



AIRPORTS ECONOMIC REGULATORY AUTHORITY OF INDIA

**IN THE MATTER OF
DETERMINATION OF AERONAUTICAL TARIFF FOR
RAJIV GANDHI INTERNATIONAL AIRPORT (HYD),
SHAMSHABAD, HYDERABAD
FOR THE THIRD CONTROL PERIOD
(01.04.2021 – 31.03.2026)**

DATE OF ISSUE: 02 JULY, 2021

**AERA BUILDING
ADMINISTRATIVE COMPLEX
SAFDARJUNG AIRPORT
NEW DELHI - 110003**

STAKEHOLDER COMMENTS

The Authority is aware of the fact that the aviation sector has been severely affected by the COVID-19 pandemic and the associated lockdown situation in the major cities around the world which has resulted in restrictions in air travel both domestic and international. The recovery in air traffic by the end of FY 2021 has been affected due to the second wave of COVID-19 in India. In this background, Authority understands the challenges involved in the traffic forecast. Authority has put forward traffic forecast proposals in the Consultation Paper based on the inputs provided by the Airport Operator in the Multi Year Tariff Proposal (MYTP) and Authority's own analysis. Stakeholders are expected to give their valuable suggestions/comments on these proposals during the Consultation process.

The Authority has used estimated figures for FY 2021(except for capital expenditure and operating expenditure) for various building blocks for true-up of the Second Control Period as the audited financial statements of FY 2021 were not available at the time of release of this Consultation Paper. This is done to avoid delay in the tariff determination exercise for the Third Control Period and the Authority shall use the actual figures or the audited financial statements of FY 2021 in the final Tariff Order.

The Authority shall consider written evidence-based feedback, comments and suggestions from stakeholders (preferably in electronic form (editable "Microsoft Word" file) on the proposals made in the Consultation Paper No. 11/ 2021-22 dated 02 July 2021 at the following address:

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Stakeholder Consultation Meeting:	14 July 2021
Last Date for Submission of Stakeholder Comments:	30 July 2021
Last Date for Submission of Counter Comments:	09 August 2021

Comments and counter comments will be posted on AERA website www.aera.gov.in

For any clarification/information, Director (P&S, Tariff) may be contacted at Telephone Number: +91-11-24695048

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Glossary

Abbreviation	Full Form
AAI	Airport Authority of India
ACI	Airports Council International
ADFG	Advance Development Fund Grant
AEP	Airport Entry Pass
AERA	Airports Economic Regulatory Authority
AERAAT	Airports Economic Regulatory Authority Appellate Tribunal
AGL	Airfield Ground Lighting
AOCC	Airport Operations Control Center
AOL	Airport Operator Liability
ARR	Aggregate Revenue Requirement
ASF	Aviation Security Fee
ASQ	Airport Service Quality
ATC	Air Traffic Control
ATM	Air Traffic Movement
ATRS	Automated Tray Retrieval System
AUCC	Airport Users Consultative Committee
BCAS	Bureau Of Civil Aviation Security
BIAL	Bangalore International Airport Limited
BRS	Baggage Reconciliation System
CAGR	Compounded Annual Growth Rate
CAM	Common Area Maintenance
CAPEX	Capital Expenditure
CAPM	Capital Asset Pricing Model
CGF	Cargo, Ground handling and Fuel
CISF	Central Industrial Security Force

Abbreviation	Full Form
CNS	Communication, Navigation and Surveillance
COD	Commercial Operations Date
COE	Cost of Equity
COVID	SARS-CoV-2 Disease
CPD	Commercial Property Development
CRIS	CRISIL Risk and Infrastructure Solutions Limited
CSB	Cargo Satellite Building
CSR	Corporate Social Responsibility
CTB	Cargo Terminal Building
CUSS	Common Use Self Service
CUTE	Common Use Terminal Equipment
CWIP	Capital Works in Progress
DGCA	Directorate General of Civil Aviation
DIAL	Delhi International Airport Limited
EBIT	Earnings Before Interest and Tax
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation
ECB	External Commercial Borrowing
FAR	Fixed Asset Register
FEGP	Fixed Electrical Ground Power
FIA	Federation of Indian Airlines
FROR	Fair Rate of Return
GACAEL	GMR Air Cargo and Aerospace Engineering Limited
GDP	Gross Domestic Product
GHIAL	GMR Hyderabad International Airport Limited
GHRL	GMR Hospitality and Retail Limited
GIL	GMR Infrastructure Limited

Abbreviation	Full Form
GMR	GMR Group
GOI	Government of India
GPU	Ground Power Unit
GSE	Ground Services Equipment
HAML	Hyderabad Airport Metro Limited
HIAL	Hyderabad International Airport Limited
HMACPL	Hyderabad Menzies Air Cargo Pvt Ltd
HVAC	Heating, ventilation, and air conditioning
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ICF	ICF International Limited
ICT	Information and Communications Technology
IDAT	Integrated Domestic Arrival Terminal
IDC	Interest During Construction
IFK	In Flight Kitchen
IFL	Interest Free Loan
IIDT	Integrated International Departure Terminal
IIM	Indian Institute of Management
IMC	Instrument Meteorological Conditions
INR	Indian Rupee
IRR	Internal Rate of Return
MAG	Minimum Annual Guarantee
MAHB	Malaysia Airports Holding Berhad (Mauritius)
MAT	Minimum Alternate Tax
MIAL	Mumbai International Airport Limited
MPPA	Million Passengers Per Annum

Abbreviation	Full Form
MYTP	Multi Year Tariff Proposal
NAR	Non-Aeronautical Revenue
NATS	National Air Traffic Services UK
NOB	New Office Building
OMDA	Operations, Maintenance and Development Agreement
PBT	Profit After Tax
PCPE	Pre Control Period Entitlement
PMC	Project Management Cost
PPP	Public Private Partnership
PSF	Passenger Service Fee
PSU	Public Sector Units
PTC	Passenger Transport Center
RAB	Regulated Asset Base
RBI	Reserve Bank of India
RGIA	Rajiv Gandhi International Airport
ITES	Rail India Technical and Economic Service Limited
ROI	Return on Investment
RTL	Rupee Term Loan
SATS	Singapore Airport Terminal Services Limited
SFIS	Served From India Scheme
SLP	Special Leave Petitions
SOB	Site Office Building
SOCC	Security Operations Control Centre
SOP	Standard Operating Procedure
SPP	Spend Per Pax
SSA	State Support Agreement

Abbreviation	Full Form
TDSAT	Telecom Disputes Settlement and Appellate Tribunal
TRA	Trust and Retention Account
UDF	User Development Fees
USD	US Dollar
WACC	Weighted Cost of Capital
WDV	Written Down Value
WIP	Work in Progress
WPI	Wholesale Price Index
YOY	Year on Year
YPP	Yield Per Passenger

1. BACKGROUND

1.1 Introduction

- 1.1.1 The airport, named as Rajiv Gandhi International Airport (RGI Airport / RGIA), Hyderabad, is among the few airports to be operationalized under the Public-Private Partnership (PPP) model in India. The airport was inaugurated on 14.03.2008 and started the commercial operations from 23.03.2008.
- 1.1.2 Rajiv Gandhi International Airport is an international airport that serves Hyderabad, the capital of the Indian state of Telangana. It is located in Shamshabad, about 24 kilometres (15 mi) south of Hyderabad.
- 1.1.3 In November 2000, the Andhra Pradesh government and the Airports Authority of India (AAI) signed a memorandum of understanding on the greenfield airport project, establishing it as a Public-Private Partnership (PPP). The State and AAI together held a 26% stake in the project, while the remaining 74% was to be held by a private partner. Through a competitive bidding process, the Rajiv Gandhi International Airport was awarded to a consortium of GMR Group and Malaysia Airports Holdings Berhad (MAHB).
- 1.1.4 In December 2002, Hyderabad International Airport Ltd (HIAL) was created as a special purpose entity, to design, finance, build, operate and maintain a world class Greenfield Airport at Shamshabad, Hyderabad. The State, AAI and GMR–MAHB placed their stakes in this special purpose entity.
- 1.1.5 In September 2003, the members of HIAL signed a shareholders' agreement, as well as an agreement for state subsidy of over ₹4 billion (US\$56 million). A concession agreement between HIAL and the Government of India was signed in December 2004.
- 1.1.6 HIAL being a joint venture company has the following shareholding pattern as of March 31, 2021:

Table 1: Summary of shareholding structure of HIAL

Holding Company	Percentage of Stake (%)
GMR Airports Limited	63
Airports Authority of India	13
Government of Telangana	13
Malaysia Airports Holding Berhad (Mauritius)	11
Total	100

Source: HIAL MYTP for the Third Control Period

- 1.1.7 RGIA has an integrated passenger terminal with a capacity of 12 million passengers per year. It presently has a Code-F runway and a parallel standby runway.
- 1.1.8 The concession has been granted for 30 years and is further extendable by 30 years subject to conditions as described in clause 13.7 of the Concession Agreement. The key agreements governing the functioning of HIAL inter alia include:
- Concession Agreement, executed between Government of India, MoCA and HIAL, on 20th December 2004.
 - Land Lease Agreement executed between the State Government (Lessor) and HIAL (Lessee) on 30th September 2003.

- State Support Agreement (SSA) executed between the State Government and HIAL on 30th September 2003.
- CNS / ATM Agreement executed between AAI and HIAL on 11th August 2005. It defines the scope of services for Pre-Commissioning Phase, Commissioning Phase and Operation Phase.
- Shareholder's Agreement executed between State Government, AAI, GIL, MAHB and HIAL on 30th September 2003.
- Sponsors' Agreement executed between GMR Group and MAHB on 30th September 2003. The Sponsors' Agreement defines the roles of GMR Group and MAHB in the JV.

1.2 Tariff Setting principles for HIAL

1.2.1 The legislature has provided policy guidance to the Authority regarding determination of tariff for aeronautical services under the provisions of the AERA Act. The Authority is required to adhere to this legislative policy guidance in discharge of its functions in respect of major airports. These functions are indicated in Section 13 (1) of the AERA Act, which reads as under:

- a) *"to determine the tariff for aeronautical services taking into consideration -*
- i. the capital expenditure incurred and timely investment in improvement of airport facilities;*
 - ii. the service provided, its quality and other relevant factors;*
 - iii. the cost for improving efficiency;*
 - iv. economic and viable operation of major airports;*
 - v. revenue received from services other than the aeronautical services;*
 - vi. concession offered by the Central Government in any agreement or memorandum of understanding or otherwise;*
 - vii. any other factor which may be relevant for the purposes of this Act.*

Provided that different tariff structures may be determined for different airports having regard to all or any of the above considerations specified at sub-clauses (i) to (vii);

- b) to determine the amount of development fees in respect of major airports;*
- c) to determine the amount of passenger service fee levied under rule 88 of the Aircraft Rules, 1937 made under Aircraft Act, 1934 (22 of 1934);*
- d) to monitor the set performance standards relating to quality, continuity and reliability of service as may be specified by the Central Government or any authority authorized by it in this behalf;*
- e) to call for such information as may be necessary to determine the tariff under clause 13(1)(a).*
- f) to perform such other functions relating to tariff, as may be entrusted to it by the Central Government or as may be necessary to carry out the provisions of this Act."*

1.2.2 Further, the Authority had issued Order No.13/2010-11 dated 12th January 2011 – "In the matter of Regulatory Philosophy and Approach in Economic Regulation of Airport Operators" (Airport Order) and "The Airports Economic Regulatory Authority of India (Terms and Conditions for determination of tariffs for Airport Operators) Guidelines, 2011" dated 28th February 2011 (Airport Guidelines). These form the guiding principles of the Authority's tariff determination methodology for Airport Operators including HIAL.

Authority's order applied in tariff proposals in this Consultation Paper

1.2.3 The Authority had issued Order No. 14/ 2016-17 on Till applicable for determination of Aeronautical Tariffs. Extract of the Order is as stated below:

"... The Authority will in future determine the tariffs of major airports under "Hybrid Till" wherein 30% of non-aeronautical revenues will be used to cross-subsidize aeronautical charges. Accordingly, to that extent the airport operator guidelines of the Authority shall be amended.

The provisions of the Guidelines issued by the Authority, other than regulatory till, shall remain the same...”

Accordingly, the above order No. 14/ 2016-17 was applied by the Authority in determination of aeronautical tariffs for the Second Control Period and the same order is being applied for the tariff determination for the Third Control Period.

- 1.2.4 The Authority had also issued Order No. 35/2017-18 dated 12th January 2018 together with Amendment No. 01 to Order No. 35/2017-18 dated 9th April 2018 detailing the useful lives of Airport Assets. The Authority has considered this Order on depreciation for HIAL for the Second Control Period and the Third Control Period.

1.3 Past tariff determination history

- 1.3.1 A brief on the timeline of events for the First Control Period is as follows:

- a) HIAL vide their letter no. GHIAL/AERA/2011-12/01 on 31st July 2011, in compliance of Order of Airports Economic Regulatory Authority Appellate Tribunal (“AERAAT”), submitted its Multi-Year Tariff Proposal (MYTP) proposal for the First Control Period starting from FY 2011-12 to FY2015-16 for tariff determination for the Authority’s consideration.
- b) Pursuant to their submission, a series of discussions / meetings / presentations were held on the proposal including discussions in respect of the financial model developed by HIAL for this purpose.
- c) The Authority considered and analysed the views of various stakeholders on the proposals of the Authority on various building blocks in respect of determination of aeronautical tariff for HIAL and determined the aeronautical tariff vide its Order No. 38/2013-14 dated 24th February 2014, (“hereinafter called Order No. 38/2013-14”) in the matter of Determination of Aeronautical Tariff in respect of HIAL for the First Control Period (1st April 2011 – 31st March 2016).

- 1.3.2 A brief on the timeline of events for the Second Control Period is as follows:

- a) HIAL had approached the Hon'ble High Court of Hyderabad through a writ petition bearing WP No.22474/2014 on 06.08.2014 to challenge the impugned First Control Period Tariff Order (Order No. 38/2013-14) and also to seek a stay in the matter. Further, HIAL had filed another writ petition bearing WP No. 27390/2015 in 2015 before the Hon'ble High Court of Hyderabad wherein HIAL requested immediate revision of the tariff.
- b) For the Second Control Period, HIAL submitted its initial Multi-Year Tariff Proposal (MYTP) on shared till basis on 25.03.2016. HIAL further submitted a revised MYTP proposal dated 5.12.2016 and subsequently updated its tariff financial model which was submitted on 28.01.2017 (updated with HIAL’s audited financial results for FY 2015-16).
- c) HIAL made another submission, dated 31.08.2017, to the Authority with revisions on the following accounts:
 - i. Revised implementation plan for capital expenditure
 - ii. Treatment of foreign exchange variation
 - iii. Correction in the rate of depreciation and
 - iv. Computation of revenues from other than aeronautical service(s) for cross-subsidisation

- d) The Authority had reviewed various submissions made by HIAL for different building blocks and proposed the treatment for each building block for determination of tariffs for the Second Control Period as part of the Consultation Paper No. 30/2017-18 dated 19.12.2017 (“hereinafter called Consultation Paper No. 30/2017-18”).
- e) The Authority had invited formal comments from all stakeholders on the issues and proposals presented in the Consultation Paper No. 30/2017-18.
- f) On October 17, 2019, both the writ petitions were finally disposed of by the Hon’ble High Court for the state of Telangana and Andhra Pradesh by a common order and a direction was issued that the AERA Appeal No.2/2014 (“Appeal”) was to be remitted back to the Telecom Disputes Settlement and Appellate Tribunal (“TDSAT”) in terms of Section 17 of the AERA Act and HIAL could raise all the issues before the TDSAT.
- g) Pursuant to the said order of the Hon’ble High Court, the Appeal was listed before the TDSAT and heard. By virtue of orders (“HIAL TDSAT Order”) dated March 04, 2020, the Appeal was disposed of and the unresolved issues pertaining to the appeal was remanded to AERA for its fresh consideration and adjudication
- h) Hon’ble TDSAT allowed the Authority to issue interim / ad hoc directions for the purpose of regulating UDF as an interim measure till another Tariff Order is issued.
- i) Given the above context, the Authority decided to proceed with the exercise of determining tariffs for the Second Control Period of HIAL for the remaining period of one year till the finalization of the Third Control Period tariff effective from 01.04.2021.
- j) Pursuant to the issue of tariff order no. 34/2019-20 wherein revised tariff was levied from April 1, 2020 till the end of the Second Control Period, HIAL has submitted its Multi Year Tariff Proposal for the Third Control Period before the Authority and made a request to have a fresh consideration of all the pending and open issues. HIAL has also submitted the Concession Agreement signed by the Government of India with them, which HIAL has further emphasized that it is binding and as per the provisions of the AERA Act, the integrity and sanctity of contractual provisions are to be respected and upheld. HIAL has requested the Authority to determine tariff in a manner that are consistent with the contractual and vested rights of the Company under the Concession Agreement, Land Lease agreement and State Support Agreement.
- k) Further HIAL has requested the Authority for fresh consideration of the key open issues pertaining to the provisions of Concession Agreement entered into with the Ministry of Civil Aviation (for PCPE and CGF treatment), Land Lease Agreement and State Support Agreement entered into with the State Government of Telangana (erstwhile united State of Andhra Pradesh) (for treatment of real estate income) and the principles of tariff determination issued by the Authority (for treatment of forex loss and other open issues) in this regard.
- l) Subsequently, the Authority has conducted a meeting on 10.11.2020 to allow HIAL to make its submissions on the open and unresolved issues. The Authority has considered these issues and its stand on each issue is detailed in the subsequent chapters of this Consultation Paper.

1.4 Hon'ble TDSAT directions with regards to decisions taken by AERA

- 1.4.1 As discussed above, pursuant to the Appeal, the Hon'ble TDSAT has issued the HIAL TDSAT Order in March, 2020. The matters for the First Control Period raised by HIAL under the Appeal and the HIAL TDSAT Order with regards to the same is given below.
- 1.4.2 The Authority has looked at the directions under the Hon'ble TDSAT Order and has applied the directions as applicable under the various regulatory building blocks towards tariff determination for the Third Control Period.
- 1.4.3 The major decisions of Hon'ble TDSAT (HIAL TDSAT Order) are described below:
- a) HIAL Appeal was disposed off in the larger interest of justice and in the interest of all the parties and the stakeholders such as the general public, who ultimately pays the UDF charges. The reasons for such disposal were two fold - First Control Period had already expired and the Order No. 38/2013 – 14 cannot govern that period anymore because of the stay order passed by the Hon'ble High Court.
 - b) In the considered view of AERA, unresolved issues, inter alia, (i) consideration of the alleged losses of pre-control period, (ii) the claim on account of fluctuations in foreign exchange rates; and (iii) the claim to treat Cargo, Ground Handling and Fuelling (CGF) as non-aeronautical services, should not be a hindrance for AERA in proceeding with the determination of tariff for the next relevant control period in accordance with law.
 - c) The unresolved issues as stated above deserve to be reconsidered by AERA expeditiously after giving an opportunity of further hearing or of making representation in the matter, to HIAL. This would ensure that no loss is caused to HIAL. It would also provide justice to all the stakeholders by ensuring that the ad-hoc rates of 2010 do not continue for an unnecessarily long period on account of the pendency of the HIAL Appeal.
 - d) In light of the above and to prevent further delays and prevent further loss to the stakeholders involved, unresolved issues, as stated above, were remitted back to AERA for its fresh consideration and adjudication on merits. While deciding such unresolved issues, AERA has been directed to keep its views open so that the issues are decided fairly and in accordance with law without any prejudice on account of the earlier litigation or the HIAL TDSAT Order.
 - e) AERA may issue any interim or ad hoc orders or directions for the purpose of regulating the UDF as an interim measure till another tariff order is issued in regular course with due expedition and in accordance with law.
- 1.4.4 The Authority would also like to highlight the order passed by Hon'ble TDSAT in case of BIAL that is equally applicable to HIAL since the Concession Agreement of both the airport operators is similar in nature. The issues those remained undecided in Hon'ble TDSAT's HIAL order have been decided on merit by Hon'ble TDSAT's BIAL order.
- 1.4.5 Some of the major decisions of Hon'ble TDSAT in case of BIAL (BIAL TDSAT Order) dated December 16, 2020, which are also relevant for HIAL are described below:
- a) The dual/hybrid Till model for Bangalore Airport is as per request made by BIAL and accepted by AERA on the basis of directives of MoCA. Demand of FIA for single Till cannot be accepted because the directives are under Section 42 of the Act.
 - b) The claim of BIAL that there is additional land beyond the airport precincts and therefore, beyond the tariff determination power of the Authority cannot be accepted. Income from such land has been correctly treated as non-aeronautical revenue.

- c) The claim for Pre-Control Period losses as determined in various parts of Para 5 of the first tariff order of BIAL and virtually reiterated in the next tariff order of BIAL are set aside and the claim is remitted back to AERA for fresh consideration on its own merits and in accordance with law.
- d) The claim of BIAL for 21.66% equity IRR is not found acceptable as it is not promised or guaranteed in terms of any agreement between the concerned parties.
- e) The decision to impose 1% penalty by way of reduction of the value of the Terminal II Building from ARR is just, proper and within the jurisdiction of the Authority because the word 'penalty' has been used differently in a peculiar context.
- f) The order that BIAL should offer explanation if the cost incurred exceeds 10% of the cost approved by the Consultant suffers from no error and is within the powers of the Regulator.
- g) Challenge by BIAL to the decision of AERA to grant uniform exemption to all transit/transfer passengers transiting within 24 hours, from the payment of UDF does not merit acceptance.
- h) The decisions of AERA in respect of allocation of assets as well as of expenses as aeronautical and non-aeronautical needs no interference.
- i) The decision of the Authority to consider interest income as non-aeronautical revenue is correct and BIAL's claim to exclude such income altogether is not found acceptable.
- j) The direction of the Authority in both the tariff orders requiring BIAL to ensure service quality at the Airport is in conformity with the performance standards as indicated in the Concession Agreement is within the jurisdiction of the Authority and requires no interference.
- k) The decision of the Authority to not allow CSR expenditure as a cost of the Airport Operator is not proper and is set aside. The Authority shall pass consequential orders so as to prevent loss of or reduction in the determined fair return to the equity holders. Necessary truing-up exercise shall be done accordingly.
- l) The treatment by the Authority in respect of Lease Rentals and Infrastructure Recovery is proper and requires no interference.
- m) Issues raised by BIAL in respect of cost of debt do not require any interference with the impugned tariff orders.
- n) The plea for light touch regulation has rightly not been accepted by AERA. A preliminary issue raised by BIAL as to maintainability of appeal by FIA is found to be without merits.
- o) As held earlier, the plea of FIA for single Till approach cannot be accepted.
- p) The grievances raised by FIA against the decisions in respect of initial RAB have no merits.
- q) The decision of AERA to allow in the peculiar facts depreciation up to 100% of the value of the assets suffers from no error.
- r) Allowing bad debts to be recovered as operating expenses is a bad precedent and should not be followed in future because users should not be put to penalty for no fault of theirs.

However, for pragmatic reasons such decision for the First Control Period is not set aside..

1.5 Tariff submission by HIAL for the Third Control Period

- 1.5.1 HIAL submitted its MYTP proposal dated July 23, 2020 to AERA for the Third control period (FY2022 - FY2026).
- 1.5.2 The Authority has examined the MYTP submitted by HIAL and verified the data with reference to Balance Sheet and Profit & Loss account from audited financial statements of HIAL, examined the projections for the Third Control Period and raised queries / sought clarifications on the information provided by HIAL for finalising this consultation paper.
- 1.5.3 HIAL has submitted the MYTP for the Third Control Period from FY2022 to FY2026, the document is available on the AERA website along with the Consultation Paper.

1.6 Studies commissioned by the Authority

- 1.6.1 The Authority conducted the following independent studies for the purpose of its current assessment:
 - a) Study on allocation of assets between Aeronautical and Non-Aeronautical assets for the Second Control Period
 - b) Study of Efficient Operation and Maintenance costs for the Second Control Period
 - c) Study of the Determinants of Cost of Equity to be used for computation of Weighted Average Cost of Capital for the Third Control Period
 - d) Analysis of Capital Expenditure on expansion for Third Control Period

1.7 Construct of the Consultation Paper

- 1.7.1 The background of the Authority's tariff determination is explained in this Chapter 1. Chapter 2 lists out HIAL's submissions regarding Pre Control Period as part its submission for the Third Control Period.
- 1.7.2 In Chapter 3, the Authority has summarized its earlier analysis and decision as per the Order of the Second Control Period against each point submitted by HIAL regarding true up of the First Control Period. This is followed by the Authority's current examination and proposals regarding the true up for First Control Period as part of current tariff determination process.
- 1.7.3 Chapter 4 lists out HIAL's submissions regarding true up for the Second Control Period with respect to specific issues followed by a summary of the Authority's analysis and decisions regarding the various building blocks for the Second Control Period as per the Second Control Period Tariff Order pertaining to those specific issues. This is followed by Authority's current examination and proposals on the specific issues regarding the true up for the Second Control Period. This chapter also discusses the assessment and the outcome of the studies conducted by the Authority regarding asset allocation ratios between aeronautical and non-aeronautical assets and efficient cost segregation between aeronautical and non-aeronautical operating expenses. The summary of these reports is given under appendices to this Consultation Paper and the reports have been appended separately to the Consultation Paper.
- 1.7.4 Chapter 5 - 13 discuss HIAL's submissions and the Authority's examination of HIAL's submissions along with its proposals with respect to various building blocks pertaining to the Third Control Period.
- 1.7.5 The summaries of the reports are given under appendices. The detailed reports have also been appended separately to the consultation paper.

- 1.7.6 Chapter 13 presents the revised Aggregate Revenue Requirement as determined by the Authority based on the proposals and proposed adjustments in tariff considered by the Authority for the Third Control Period.
- 1.7.7 Chapter 14 summarizes the Authority's proposals regarding each of the building blocks.
- 1.7.8 The Authority invites views of the stakeholders regarding proposals put forward for tariff determination for the Third Control Period in the Consultation Paper.

2. REVIEW OF THE PRE CONTROL PERIOD ENTITLEMENT FROM 01.04.2008 TO 31.03.2011

2.1 HIAL's Submissions regarding True up for the Pre-Control Period from 01.04.2008 to 31.03.2011

- 2.1.1 HIAL in its MYTP submission of the Third Control Period has raised the issue of Pre Control Period Entitlement (PCPE). As per HIAL, it is entitled to levy and collect the airport charges from the date of commencement of its operations i.e. from 01.04.2008 in accordance with the provisions of the Concession Agreement.
- 2.1.2 According to HIAL, on constitution of the Authority on 01.09.2009, the entire process pertaining to the determination of airport charges was transferred by the Ministry of Civil Aviation (MoCA) to the Authority in accordance with the terms of the Concession Agreement and the provisions of the AERA Act, 2008.
- 2.1.3 As stated by HIAL, even though the Authority came into being from 01.09.2009, it assumed the duties, powers and responsibilities of erstwhile MoCA for determination of tariff. Hence, in HIAL's view, it is only a transfer of power for determination of tariff from MoCA to AERA and therefore the date of constitution of the Authority has no relevance. In this backdrop, the Authority has jurisdiction to consider tariff for the period from 23.03.2008 till 31.08.2009. As a matter of principle, PCPE should be true up while determining the tariff for aeronautical services in the Third Control Period.
- 2.1.4 HIAL has further stated that the Authority in its Order No. 6/2010-11, while revising the ad-hoc UDF being charged by the HIAL (on the basis of the communication of the Ministry of Civil Aviation), had itself recognized that it is (a) passing an ad-hoc order; (b) was "conscious" that on a "detailed assessment" of all revenues and expenditures, the UDF rates may need to be altered, and such exercise will be undertaken at the stage of final tariff determination.
- 2.1.5 Additionally, as per HIAL, no final tariff determination exercise had ever been done in case of the subject airport. Further, the Central Government on constitution of the Authority (and upon notification of its powers) "transferred" the request of HIAL to seek a hike of UDF (from the ad-hoc UDF put in place by the Ministry of Civil Aviation) thereby leaving open the issues for consideration by the Authority regarding the eligibility of tariff from the date of commercial operations i.e. 23.03.2008.
- 2.1.6 HIAL has made reference to the Hon'ble TDSAT judgment dated 23rd April, 2018 in case of HIAL's First Control Period tariff order wherein it stated that the Authority has requisite jurisdiction to determine tariff for period prior to its existence as long as it is carried out on a fair and transparent basis. The relevant extract of the above referred TDSAT judgment is as below:
- "Once AERA was legally constituted from September 2009, the unfinished exercise could have been finished only by AERA. Clearly, the Central Government had the authority to consult independent expert body for the period between 01.04.2009 and 01.09.2009 when AERA came into existence. The exercise by AERA for that period has been within the knowledge of Central Government which has issued communications relating to tariff formulation." It further stated that ".....Section 13 of the Act gives sufficient latitude in selecting an appropriate beginning of the first regulatory term of 5 years subject to rules of transparency and fairness"*
- 2.1.7 Based on above, HIAL has requested the Authority to consider pre-control period eligibility as part of true up as submitted in its MYTP for Third Control Period.
- 2.1.8 HIAL has submitted the true-up for PCPE based on two points:
- True-up due to consideration of the period before the Authority came into existence (23rd March 2008 to 31st August 2009)

- True up as a result of its own interpretation of tariff determination principles as stated in chapter 1, para 1.2 of this consultation paper

2.1.9 The computation of true up of the Pre Control Period Entitlement as submitted by HIAL as part of the MYTP for the Third Control Period is as summarized in the table given below:

Table 2: Pre Control Period Entitlement submitted by HIAL for True up of the Pre-Control Period

S.no	Particulars (In Rs. Crores)	2009	2010	2011	Total
1	Return on Capital Employed (a)	197.60	194.74	191.40	583.74
2	Total Expenses (incl. Concession Fee) (b)	175.61	157.08	180.31	513.00
3	Depreciation (c)	90.14	92.60	94.63	277.37
4	Tax (d)	-	-	-	-
5	NAR Cross-Subsidisation (e)	(23.14)	(22.09)	(25.18)	(70.41)
6	Aggregate Revenue Requirement (f) = (sum of a to e)	440.21	422.34	441.16	1303.71
7	Less: Actual Aero Revenue (g)	(207.22)	(244.52)	(324.77)	(776.51)
8	Annual Deficit (h) = (f) + (g)	232.98	177.81	116.39	527.18
9	Pre Control Period Entitlement as per Order No. 38 under Single Till (i)	0.00	39.60	-3.09	36.51
10	Revised True up (j) = (h) - (i)	232.98	138.21	119.48	490.67
11	Discounting factor for the PCPE (k)	1.30	1.17	1.05	
12	PV of true up as on 01.04.2011 (l) = (j) * (k)	302.29	161.65	125.97	589.90
13	Discounting factor for the First Control Period (m)				1.68
14	PV of true up as on 01.04.2016 (n) = (l) * (m)				991.08
15	Discounting factor for the Second Control Period (o)				1.68
16	PV of True Up (as on 01.04.2021) (p) = (n) * (o)				1665.08

2.2 Authority's Examination regarding True up for the Pre-Control period from 01.04.2008 to 31.03.2011

Decisions taken by the Authority regarding True up of PCPE as per the Tariff Order for the First Control Period

- 2.2.1 The Authority mentioned that in its ad-hoc UDF Order No. 06/2010-11, dated 26.10.2010 it had stated that the ad-hoc determination of UDF for Hyderabad Airport would be reviewed at the stage of tariff determination for the first cycle in respect of Hyderabad Airport
- 2.2.2 The Authority stated that while it had initially proposed to consider the Pre Control Period Entitlement for the period since commencement of airport operations i.e. 23.04.2008 to 31.03.2011 (inclusive of carrying costs) as per Proposal No. 1.a under section 4 of the Consultation Paper 09/2013-14, it finally decided to revise the Pre Control Period duration to nineteen months starting from 1st September 2009 i.e. after the Authority came into existence as per Decision 2.a under Section 5 of Order No. 38/2013-14.
- 2.2.3 The change in the Authority's stance was based on concerns raised by the stakeholders, who submitted that the Authority had no legal jurisdiction over the period prior to its establishment. The Authority justified the change in its proposed treatment in para 5.38 of Order No. 38/2013-14 stating that the financial status and concerns of HIAL were already taken care of by the then independent regulatory body i.e. the Government of India, in the absence of the Authority. The relevant extracts stating the Authority's position in section 5.38 of Order No. 38/2013-14 for the First Control Period is reproduced below:
- “Upon reading the responses of various stakeholders including that of AAI mentioned above, it appears to the Authority that some of the stakeholders have viewed the Authority's approach regarding consideration of Pre-Control Period losses as extending the Authority's CP. No. 30/2017-18 HIAL-MYTP Page 40 of 218 ambit to the period “prior to its establishment”....the powers and functions of the Authority were notified from 01.09.2009. The Authority feels that the financial position of the airport operator before 01.09.2009 were addressed by the then Regulator, namely Government and that the Authority should focus on the period after 01.09.2009 till 31.03.2011 to examine if the airport operator has incurred any deficit (loss) for this period.”*
- 2.2.4 Consequently the Authority decided to consider the Pre Control Period Entitlement of Rs 40.25 Crores, as on 01.04.2011, for the period 01.09.2009 to 31.03.2011 towards determination of aeronautical tariff for the First Control Period commencing from 01.04.2011.

Decisions taken by the Authority regarding True up of PCPE as per Tariff Order for the Second Control Period

- 2.2.5 The Authority had noted HIAL's submission for true up of PCPE during the Second Control Period tariff determination. The Authority had further noted HIAL's submission for considering a Pre Control Period Entitlement for the period starting from the day of commencement of its operations till the beginning of the First Control Period. The Authority also noted that the airport operator had proposed the same duration for calculating the Pre Control Period Entitlement during the tariff determination for the First Control Period.
- 2.2.6 The Authority had decided to maintain its position regarding computation of the Pre Control Period Entitlement from 01.09.2009 to 31.03.2011, i.e. after it came into existence, as HIAL issued no fresh arguments for consideration of the Authority in its MYTP for the Second Control Period.
- 2.2.7 The Authority had computed HIAL's true-up entitlements by considering gross non-aeronautical revenues in line with AERA Act, AERA guidelines and orders issued from time to time instead of the net of concession fees and allowed an entitlement of Rs. 198.65 Crores as true-up in Order No. 34/2019-20.

Authority's Examination and Proposals regarding issues pertaining to PCPE as part of the tariff determination process for the Current Control Period:

- 2.2.8 The Authority notes HIAL's submission regarding computation of PCPE based on HIAL's own interpretation of principles of tariff determination and consideration of period before the Authority came into existence.
- 2.2.9 The Authority further notes that the Hon'ble TDSAT vide its order dated March 04, 2020 ("HIAL TDSAT Order"), held that the issues that are surviving should be remitted back to AERA for its fresh consideration and adjudication. The TDSAT Order also stated that
- "While deciding the remitted issues AERA should keep its views open so that the issues are decided fairly and in accordance with law without any prejudice on account of the earlier litigation or this judgment and order."*
- The Authority also notes that all remitted issues have been decided by Hon'ble TDSAT on merit in BIAL order dated December 16, 2020.
- 2.2.10 The Authority has noted the direction of Hon'ble TDSAT order dated December 16, 2020 ("BIAL TDSAT Order") in the matter of Bangalore International Airport Limited vs. Airports Economic Regulatory Authority of India, passed in relation to the tariff determination for Bangalore International Airport Limited ("BIAL"), inter alia, on the issue of PCPE, wherein the TDSAT has opined as follows:
- "47. In the considered opinion of this Tribunal, it will not be proper to hold that in the exercise of its statutory powers to provide for a purposeful and good tariff order, the AERA should depend upon a direction from MoCA to look into facts relating to ad hoc rates and resultant loss, if any. Similarly, for the lapses of MoCA, if any, it will not be proper now to refer the task of looking into deficiencies in tariff formulation for the period prior to First Control Period to MoCA. The relevant facts, figures and accounts for the earlier period should have been gone into by AERA to find out whether there was any merit in the claim of BIAL. Since that has not been done, the claim for pre-control period losses as determined in various parts of Para 5 of the tariff order for the First Control Period and virtually reiterated in the next tariff order are set aside for the purpose of remitting the claim back to AERA for fresh consideration on its own merits and in accordance with law and this order."*
- 2.2.11 Accordingly, the Hon'ble TDSAT had set aside the treatment of the Pre Control Period Entitlement determined as per the tariff orders for the First Control Period and the Second Control Period of BIAL and the said claim was remitted back to AERA for fresh consideration on its own merits and in accordance with law.
- 2.2.12 Based on the judgment of Hon'ble TDSAT in the HIAL Order and based on the similar view and direction given by the Hon'ble TDSAT in the BIAL Order, the Authority proposes to revisit the entitlement of balance period of PCPE and provide for the same.
- 2.2.13 Further on the matter of consideration of true-up of PCPE, the Authority has analysed proposal of HIAL based on their own interpretation of principles of tariff determination, the Concession Agreement and AERA guidelines. The Authority has dealt with the issues based on Court judgments, AERA ACT, AERA guidelines of tariff determinations, related orders and Concession Agreement of HIAL. Further, analysis and treatment of various components of tariff determination have been elaborated in para 3.2 of the Consultation Paper.
- 2.2.14 The Authority observed that HIAL is not eligible for any true up with regard to CSR expenses for the PCPE period.
- 2.2.15 The Authority proposes to consider the entire PCPE period (01.04.2008 – 31.03.2011) for the purpose of the true up exercise during the Current Control Period.
- 2.2.16 The Authority also noted that as part of the previous tariff orders for the First Control Period as well as the Second Control Period, a combined value of Rs. 131.20 Crores (Absolute values of

Rs. 81.32 Crores for FY10 and Rs. 49.88 Crores for FY11) had already been awarded in respect of the PCPE. This included the 7 months of FY10 and complete 12 months of FY11.

Subsequently, the Authority proposes to also consider the balance 5 months of FY10 as well as complete 12 months of FY09 for determining the PCPE True up during the current Control Period.

- 2.2.17 Based on the abovementioned analysis, and verification of the relevant data in reference to audited financial statements of HIAL, the Authority has computed the Pre-Control Period Entitlement, based on tariff determination principles, as depicted in the table given below:

Table 3: Pre Control Period Entitlement proposed to be considered by the Authority for True up of the Pre Control Period

S.no	Particulars (In Rs. Crores)	2009	2010	2011	Total
1	Return on Capital Employed (a)	201.15	197.66	192.38	591.19
2	Total Expenses (incl. Concession Fee) (b)	191.52	169.24	196.76	557.52
3	Depreciation (c)	98.66	102.67	105.00	306.33
4	Tax (d)	0.00	0.00	0.00	0.00
5	NAR Cross-Subsidisation (e)	-27.04	-28.61	-32.23	-87.88
6	Aggregate Revenue Requirement (f) = (sum of a to e)	464.29	440.96	461.90	1367.15
7	Actual Aero Revenue (g)	-289.98	-329.89	-412.02	-1031.89
8	Annual Deficit (h) = (f) + (g)	174.30	111.07	49.88	335.25
9	Combined true-up awarded in previous control periods (i)	0.00	81.32	49.88	131.20
10	True-Up (j) = (h) – (i)	174.30	29.75	0.00	204.05
11	Discounting factor for the PCPE (k)	1.21	1.10	1.00	
12	PV of true up as on 31.03.2011 (l) = (j) * (k)	210.99	32.73	0.00	243.72
13	Discounting factor for the First Control Period (m)				1.62
14	PV of true up as on 31.03.2016 (n) = (l) * (m)				394.28
15	Discounting factor for the Second Control Period (o)				1.85
16	PV of True Up (as on 31.03.2022) {(p) = (n) * (o)}				731.05

- 2.2.18 The Authority understands that some stakeholders may seek legal remedy against the proposals of the Authority related to pre-control period losses for HIAL. This proposal of AERA is thus subject to the outcome of any such litigation.

2.3 Authority's Proposal regarding True up for the Pre-control Period from 01.04.2008 to 31.03.2011

Based on the material before it and consequent analysis, the Authority proposes the following regarding true up for the Pre-Control Period from 01.04.2008 to 31.03.2011

- 2.3.1 The Authority proposes to consider the true-up of the entire Pre Control Period from 01.04.2008 to 31.03.2011.
- 2.3.2 The Authority proposes a true up of Rs. 731.05 Crores (as on 31.03.2022) which shall be provided to the airport operator along with the proposed true up for the Second Control Period as part of the tariff determination for the Third Control Period. (Table no.3).

3. TRUE UP FOR THE FIRST CONTROL PERIOD

3.1 Issues raised by HIAL pertaining to True up for the First Control Period

3.1.1 HIAL has raised the following issues concerning the First Control Period for true up as part of its MYTP for the Third Control Period.

- Regulatory Asset Base,
- Weighted Average Cost of Capital,
- Aeronautical Depreciation,
- Operating Costs and concession fees
- CSR expenses incurred by the company
- Incidental income from NoB, SOB and township netted off from common expenses
- Aeronautical Taxes,
- Treatment of various items under Revenue from Non-aeronautical Revenue,
- Aeronautical revenue

Table 4: Treatment followed by HIAL to determine Tariff for the First Control Period

Particulars	Basis of Filing	Understanding for filing
CGF Treatment	Considered as Non-aeronautical	Based on concession provisions and Attorney General's opinion
Forex Loss	Claimed as pass through based on actual loss incurred	In the absence of guidelines on treatment of forex loss, the Authority is requested to consider the actual loss suffered by the Company
Revenue from Real Estate operations	Considered as non-airport	Based on Concession Agreement which clearly states the activities that would be considered as non-airport Also Land Lease Agreement and State Support Agreement stating the land is given for the socio economic development of the region
Regulatory Till-Hybrid/Shared till	Considered 30% Shared Till with cross subsidisation of 30% of Non-Aeronautical PBT	Based on ICAO guidelines
Cost of Equity	Relied on expert study on cost of equity for the covered control periods	As per the study carried out by Jacobs for previous control periods and CRIS for the Third Control Period based on CAPM Methodology

3.1.2 HIAL has further requested the Authority to have a fresh consideration of its submissions as per the direction of Hon'ble TDSAT order dated March 04, 2020, while determining the tariff Order for RGI Airport, Hyderabad.

3.1.3 For each of the issues raised, the Authority has looked at the past decisions taken with regard to the true up of the particular building block for the First Control Period as per the tariff order for the Second Control Period and has then proceeded to examine the same as part of the order of Hon'ble TDSAT for HIAL from a fresh perspective for the tariff determination for the Third Control Period. The following paras explain these issues in detail.

3.2 Authority's Analysis and Proposal for the treatment of various issues raised by HIAL

3.2.1 The Authority has noted the reference made by HIAL to the direction of Hon'ble TDSAT Order dated March 04, 2020 to the effect "It would be a just and better course of action to remit the limited number of surviving issues for fresh consideration and adjudication by AERA, which is

direct to act accordingly.” The Authority has further taken note of the Order of Hon’ble TDSAT dated December 16, 2020 (BIAL order) wherein all the issues, which are equally relevant for HIAL have been decided on merit and the surviving issues stand decided as listed in para 1.4.5, Chapter 1 of this Consultation Paper.

- 3.2.2 AERA has analysed the submissions made by the HIAL in MYTP for the Third Control Period based on the judgments of Hon’ble TDSAT, AERA Act, AERA’s tariff determination principles and provisions of Concession Agreement of HIAL and accordingly put forward the proposals in this Consultation Paper. The examinations on important issues in this regard are in following paras:

Treatment of Cargo, Ground handling and Fuel (CGF) services

- 3.2.3 The Authority had observed that HIAL’s Concession Agreement defines ‘airport activities’ to mean provision at or in relation to the airport, of the activities set out at Schedule-3, Part-1, as amended from time to time. The provision of ground handling, cargo and aircraft fueling services have been included in the list of ‘airside facilities’ provided in Schedule-3, Part-1 of the Concession Agreement.

- 3.2.4 The Authority further observed that as per HIAL’s Concession Agreement, "Independent Regulatory Authority" or "IRA" means the Airports Economic Regulatory Authority or any other regulatory authority set up to regulate any aspect of ‘airport activities’.

- 3.2.5 Hence, even going by the Concession Agreement, the Authority is to regulate “any aspect” of “airport activities” thus, including cargo, ground handling and fuel farm. Accordingly, the Authority in Order No. 38/2013-14 for the First Control Period had ruled that,

“The remit of the Authority would thus be what the legislature has given to it and this has already been embodied and expressly provided for in the Concession Agreement. After the promulgation of AERA Act, there can be no doubt that it needs to determine tariff for cargo, ground handling and fuel services.”

- 3.2.6 The Authority had further observed that the Government of India had suo moto included services pertaining to cargo, ground handling and supply of fuel to aircraft in the list of aeronautical services under Section 2 (a) (iv), (v) and (vi) in the AERA Act, 2008. Therefore, classifying cargo, ground handling and fuel farm services as aeronautical services was conscious decision of the Government during the formulation of the AERA Act, which was taken post the award of concessions of all four airports i.e. HIAL, MIAL, DIAL and BIAL.

- 3.2.7 Further, the Authority was guided by the letter issued by the Ministry of Civil Aviation to the Authority in respect of Determination of Multi-year Tariff for Bangalore International Airport Limited (BIAL) - Consultation Paper No. 14/2013-14, wherein the Ministry had recommended the recognition of cargo, ground handling and fuel farm as aeronautical services.

More recently, the Hon’ble TDSAT judgment passed in the matter of AERA vs BIAL on 16th March, 2021 has put forward that:

‘by the virtue of explicit list of regulated charges given in Schedule 6 of the Concession Agreement, Clause 10.3 of the Concession Agreement vested BIAL and/or Service Provider Right Holders the freedom to determine the charges in respect of other facilities and services provided at the Airport or on the site, without any restrictions. But the right noted above is only to determine the charges and not to treat it as non-aeronautical charges. Significantly Clause 10.3 is for other charges, i.e. other than Airport Charges that are covered by Clause 10.2. Airport Charges vide above clause are restricted to only the regulated charges specified in Schedule 6 but Clause 10.1 which grants right to impose charges only upon BIAL or any Service Provider Right Holder or the AAI for any facilities and/or services provided at the Airport which are included within Airport Activities cannot be ignored. This clause begins with the words – “subject to Applicable Law.....”. The parties were aware that statutory provisions are in the

offing for establishing a Regulator to look after the economic activities at the Airport and only temporarily this role was given to MoCA. Once the Act came into force, the right to impose charges in respect of Airport Activities became subject to such a law particularly as per definitions in the Act and therefore, a subordinate right of determining such charges impossible or determinable under the Concession Agreement will definitely be governed by the applicable law i.e. the Act. Section 13(1)(a) entitles the Authority to perform the function of determining the tariff for the aeronautical services taking into consideration various factors including the Concession Agreement. Hence, when the provisions in the Concession Agreement such as Clause 10.1 permit the operation of applicable law on the subject, AERA definitely got the right to determine the aeronautical services covered by CGF, more so in view of policy directive of MoCA for a dual Till regime.'

- 3.2.8 Additionally, the judgment clearly states 'that any other interpretation allowing important aeronautical services of CGF to go beyond the tariff determination power of AERA will lead to diarchy in respect of determination of tariff for the aeronautical services. Such exercise must remain holistic and therefore, unified in the hands of the Regulator as per Section 13 of the Act.
- 3.2.9 Hence based on decision given by the Hon'ble TDSAT in case of BIAL and the HIAL Concession Agreement, HIAL TDSAT Order, Authority's principles of tariff determination in line with AERA Act and AERA Guidelines as issued from time to time, the Authority proposes to treat these three services as aeronautical in nature and the treatment of all building blocks pertaining to these services has been treated aeronautical in nature.

Treatment of Forex losses

- 3.2.10 The Authority has observed that HIAL had included "Forex Loss Adjustment as per AS 11" as part of its aeronautical and non-aeronautical RAB for the First Control Period. As per the Authority's Order No. 38/2013-14, the Authority had observed that "sourcing of funds is a conscious business decision of the airport operator" and accordingly had proposed to disallow the capitalization of adjusting for forex losses and excluded it from the calculation of RAB. For the Current Control Period, the Authority has decided to continue with its extant stance of disallowing the inclusion of forex loss adjustment in the calculation of RAB. However, such losses were proposed to be allowed partially as part of one-time adjustment to operating expenses subject to a certain cap in Order No. 34/2019-20.
- 3.2.11 Further, the Authority as part of the tariff determination of the Second Control Period, while fixing the cap on cost of borrowing through ECBs, had not considered any fluctuation in foreign exchange rate during the First Control Period. However, the Authority had proposed to compare the cost of borrowing through ECBs (foreign currency borrowings) with that of the RTLs (domestic borrowings) and allow HIAL to recover forex losses to the extent that the effective cost of borrowing in foreign currency (net of forex gains / losses) is not higher than the cost of RTLs, subject to the ceiling of interest rates as per the decisions of the Order no 34/2019-20 for the Second Control Period. This is essential to ensure efficient borrowing by the Airport Operator in interest of the airport users.
- 3.2.12 Consequently, based on the direction of Hon'ble TDSAT's in case of HIAL, the Authority has reviewed the submission of HIAL and is of the view that foreign exchange losses are part of ordinary business risks to be borne by the operator and may not be foreseen as the fluctuations are not certain. Hence, the Authority proposes to consider the forex losses as per the previous treatment and the cap on upper limit as part of the operational expenditure.

Treatment of income from real estate development

- 3.2.13 The Authority had proposed in the Consultation Paper No 09/2013-14 dated 21.05.2013 that it would reduce the market value or sale value (premium lease) of land from the RAB to bring about a nexus between real estate development and interest of the passengers. Since the land was acquired and leased to HIAL by the GoAP, the Authority had separately sought the views of the

GoAP on this issue, which recommended the treatment of income from real estate to be treated as non-aeronautical revenue, but the state didn't comment on reduction of market value of land from RAB. Accordingly, for the First Control Period, the Authority did not proceed with its proposed treatment of reducing RAB by the market value of land and instead adopted the recommendation of the GoAP to treat real estate income as non-aeronautical revenue.

- 3.2.14 Based on the above context, and given the scenario of following a 30% shared till (compared to a single till which was followed as per Order No. 38/2013-14), the Authority proposes to consider property development as a non-aeronautical activity. Accordingly, the income from property development was used to cross-subsidize airport operations to the extent of 30% and any expenditure associated with these revenues would not be allowed through RAB or Operating Expenses.

It needs to be noted that proposal of the Authority regarding reduction of market value of land from RAB was in context of single till mechanism. Once the share till has been made applicable, the real estate is already non-aeronautical in nature, and outside the aero assets.

- 3.2.15 Further, Hon'ble TDSAT in its order for BIAL, has clearly stated that
'Land lease agreement do not show that land comprising the site was divided into two or more parts so as to confine the area of Airport to a limited extent. Since no such arrangement was made under any of the agreements, the claim of BIAL that there is additional land beyond the airport precincts over which AERA will have no legal Authority of regulation for tariff determination cannot be accepted.'

- 3.2.16 Hence based on the above arguments, the Authority proposes to continue its treatment of income from real estate development as part of non-aeronautical revenue which will be used for cross subsidisation under shared till framework.

- 3.2.17 The Authority in its Order No. 34/ 2019-20 had observed that the Cargo Satellite Building ("CSB") was being used as an administrative office for the staff of freight forwarders and some portion of the building was also being used as a storage/warehouse for cargo parcels. Since the building was being used to undertake cargo related operations related to the cargo handling at the airport, it was proposed to be treated as an aeronautical service in line with the treatment of cargo services as decided by the Authority in the previous chapter and hence all building blocks related to CSB have been accorded the treatment of aeronautical services.

- 3.2.18 The Authority would like to re-iterate that the fueling station is providing service which is incidental to aircraft operations since these vehicles are necessary to support the operation of aircraft services, cargo and passenger services, emergency services, and maintenance of the airport and hence, qualify as an aeronautical service. Hence, the Authority proposes to include vehicle fueling service as aeronautical service and therefore all building blocks related to vehicle fueling service have been accorded the treatment of aeronautical services

Treatment of dividend received by HIAL on investment made

- 3.2.19 The Authority had noted that HIAL received interest and dividend income from two of its subsidiaries Hyderabad Duty Free Retail Limited and Hyderabad Menzies Air Cargo Pvt. Ltd. The Authority had also examined HIAL's comment on the treatment of dividend and interest income received from cargo and duty free subsidiaries. Given that the Authority has considered cargo as an aeronautical activity, the corresponding revenues from the cargo subsidiary have also been considered as aeronautical revenues. Similarly, revenues from duty free services have been treated as non-aeronautical income and accordingly, the Authority proposes to include the dividend and interest incomes received from Hyderabad Duty Free Retail Ltd as non-aeronautical income.

Treatment of cross subsidisation of 30% of Non-Aeronautical PBT under shared till

- 3.2.20 The Authority has noted the submission of HIAL for considering the non-aeronautical PBT as cross subsidy for computing the Aggregate revenue requirement (ARR). The Authority is of the opinion that only 30% of non-aeronautical revenue is used for cross subsidy under shared till model, the Airport Operator gets to retain the balance 70% of non-aeronautical revenue.

Subsequently, the Airport Operator should bear the expenses pertaining to the non-aeronautical activities as most of them are being incurred by the concessionaire engaged for it. Further, the usage of 30% of the gross non-aeronautical revenues towards cross subsidization purpose is uniform across the airports under the purview of the Authority. The said treatment is also in line with the agreements such as OMDA, SSA etc. pertaining to DIAL and MIAL.

Hence, the Authority does not agree with HIAL to allow for 30% non-aeronautical PBT for cross subsidising the ARR. The Authority proposes to continue using 30% non-aeronautical revenue for cross subsidising under shared till framework.

Treatment of Cost of Equity

- 3.2.21 The Authority had examined the arguments made and reports submitted by stakeholders recommending a higher cost of equity that is commensurate with the operational risks of the aviation sector and also ensures an appropriate return to investors in the Second Control Period. However, the Authority had observed that similar arguments had been made by stakeholders including HIAL in the First Control Period and also reiterated in HIAL's MYTP submission for the Second Control Period and now the Third Control Period as well. The Authority had analysed the arguments and reports in detail and already responded to the same in its Order No. 38/2013-14 for the First Control Period.

- 3.2.22 Additionally, order of Hon'ble TDSAT for BIAL has supported the Authority's decision in the matter of considering the cost of equity based on its own computation and that it requires no interference. The excerpt from the said order is as given below:

51. 'On a careful perusal of the chart depicting Project IRR for claiming state support through SSA, it is found that there was no agreement or contract between the parties to which MoCA would have been necessary, to guarantee equity return of 21.66% or any fixed return on equity. The charts were to work as models for understanding the need/quantum of state support claimed by BIAL. The model and the figures for its formulation do reflect the understanding of BIAL on Project IRR but that cannot amount to an agreement between the concerned parties, particularly MoCA on the fair return on equity. It is not guaranteed or promised in the terms of any agreement between the concerned parties, be it the Concession Agreement or the SSA. This claim of BIAL is not found acceptable. In Para 13.4.9 of the tariff order the Authority has correctly concluded that the equity IRR of 21.66% is not specified either in the Concession Agreement or in the SSA. The decision of AERA on this issue requires no interference.'

- 3.2.23 Hence, taking these facts into consideration, the Authority proposes to maintain its stance of considering cost of Equity as 16% for both First and Second Control Period.

- 3.2.24 Based on the treatments considered above, the Authority proposes the following treatment for purpose of tariff computation of HIAL:

Table 5: Treatment proposed to be considered by the Authority for Tariff Determination for the First Control Period and the Second Control Period

Particulars	Treatment	Rationale for treatment
CGF Treatment	To be considered as aeronautical service	As per TDSAT order for BIAL and the Authority's stand in para 3.2.3 – 3.2.9

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Particulars	Treatment	Rationale for treatment
Forex Loss	To consider forex losses to the extent that the effective cost of borrowing in foreign currency (net of forex gains / losses) is not higher than the cost of RTLs	As per the Authority's stand in para 3.2.10 – 3.2.12
Revenue from Real Estate operations	To be considered as non-aeronautical in nature and used for cross subsidisation under 30% shared till	As per TDSAT order for BIAL and the Authority's stand in para 3.2.13 – 3.2.18
Income from dividend received from Subsidiaries	To be considered aeronautical or non-aeronautical depending on business of subsidiaries under consideration.	As per the Authority's stand in para 3.2.19
Regulatory Till-Hybrid/Shared till	To be considered as 30% shared till with non-aeronautical revenues computed by the Authority Considered 30% Shared Till with cross subsidisation of 30% of Non-Aeronautical PBT	As per the Authority's stand in para 3.2.20
Cost of Equity	To be taken as 16% for previous control periods. The stance on the Third Control Period is covered in relevant chapter of this consultation paper.	As per TDSAT order for BIAL and the Authority's stand in para 3.2.21- 3.2.23

Further the Authority has given fresh consideration to the following issues and proposes the treatment for the same as follows:

Table 6: Treatment proposed to be considered by the Authority of various issues for Tariff Determination for the First Control Period and the Second Control Period

Particulars	AERA's Treatment as per the Second Control Period tariff order	The Authority's proposed treatment as per this Consultation Paper
1) CGF, ICT, GPU	Aeronautical	- CGF to be considered as aeronautical as stated in table above - The Authority has decided to maintain its stance on ICT as aeronautical. Further HIAL itself has treated assets pertaining to ICT in the expansion as aeronautical which is contradictory to its stand against revenue from ICT. - GPU is an integral part of the airport operations and used by airlines and hence is to be treated as aeronautical service. - Further all building blocks pertaining to CGF, ICT and GPU is proposed to be treated as aeronautical in nature for purpose of tariff determination in this consultation Paper
2) New Office Building(NOB)	60% Non-Aero, 40% Common	The percentage of floors usage has been considered as the driver for NOB. Prior to 2014-15, two floors of NOB were used by HIAL employees for both aeronautical and non-aeronautical purpose and remaining three floors are not being utilized by HIAL 2015-16 onwards. The usage of NOB is categorized as 60% non - aeronautical and 40% common for FY 2008-09 to FY 2014-15 consistent with the previous tariff orders. FY16 onwards, since three floors of NOB are used by HIAL employees for both aeronautical and non-aeronautical purpose and

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Particulars	AERA's Treatment as per the Second Control Period tariff order	The Authority's proposed treatment as per this Consultation Paper
		remaining two floors are not being utilized by HIAL, usage of NOB is categorized as 40% non - aeronautical and 60% common for the Second Control Period as well as the Third Control Period. The building blocks pertaining to NOB will be accorded the same treatment for purpose of tariff determination in this Consultation Paper.
3) Site Office Building	Common (78% Aero, 22% Non-Aero)	Based on the area utilization, the Site Office building is divided into common and this area utilization is calculated each year for purpose of arriving at actual utilization and then allocated into aeronautical and non-aeronautical. All building blocks pertaining to Site Office Building are proposed to be treated as common for purpose of tariff determination in this consultation Paper
4) Township	To be allocated based on critical/non critical staff occupancy.	Township is housing both critical and non-critical employees. Critical employees are typically employed for handling critical airport operations, airport fire safety services, security services etc. Hence the building blocks pertaining to Township are proposed to be treated based on critical staff ratio as aeronautical and remaining as non-aeronautical for purpose of tariff determination in this consultation Paper. This ratio is calculated every year based on actual occupancy.
5) Landscaping	Common	Although landscaping enhances passenger experience, it is not integral to airport operations in general and hence proposed to be treated as common. All building blocks pertaining to landscaping is proposed to be treated as common for purpose of tariff determination of this consultation Paper.
6) Income from SFIS	To be treated as common	The Authority proposes to allocate the realized income from SFIS scrips between aeronautical and non-aeronautical based on the allocation of income that resulted in earning these SFIS scrips as HIAL earned foreign income from certain aeronautical or non-aeronautical activities as part of the airport operations, which in turn made it eligible for earning the SFIS scrips.
7) Income from NOB and PSO	To be treated as non-aeronautical income	The Authority proposes to treat income from NOB and SOB as part of non-aeronautical and use it for cross subsidy under 30% shared till model.

3.3 True up for Return on Regulatory Asset Base

HIAL's submissions regarding true up of Regulatory Asset Base for the First Control Period

- 3.3.1 HIAL has computed the true-up for RAB for the First Control Period based on its own interpretation of tariff determination principles based on the Concession Agreement and the Authority's guidelines.
- 3.3.2 HIAL in its MYTP submission, has reclassified the components of the RAB for the First Control Period based on its own methodology and interpretation as follows:
- CGF, Information and Communication Technologies ("ICT") & Ground Power Unit ("GPU") assets have been treated as non-aeronautical,

- Administrative building is treated as non-airport, while the new office building & site office building are treated as 100% common assets.
- Employee Township is treated as aeronautical in nature.
- Weighted Average Cost of Capital (“WACC”) has been recalculated considering Cost of Equity (“COE”) at 24% based on a study done by Jacobs. The revised WACC for the First Control Period as submitted by HIAL is 11.46% as against 10.10% (approved earlier by the Authority).
- Depreciation has been trued up as per the revised Regulatory Asset Base (“RAB”) submission by HIAL for the First Control Period.
- In case of the forex losses, the true up of operating expenses on account of allowance of complete forex losses incurred by HIAL has been considered in the MYTP.”

3.3.3 Further on account of the changes proposed by HIAL to RAB, HIAL also submitted the revised computation for aeronautical depreciation to be considered as true-up for the First Control Period as below:

Table 7: Aeronautical Depreciation submitted by HIAL for True up of the First Control Period

Particulars (In Rs. Crores)	2012	2013	2014	2015	2016	Total
True up as per the Second Control Period Order (a)	-4.74	-7.12	-7.22	42.08	60.65	83.65
Depreciation as per the Second Control Period Order (b)	105.88	106.12	106.73	139.19	153.38	611.3
Revised Aero Depreciation (c)	95.37	95.58	95.73	136.09	139.10	561.87
Aero Depreciation	95.37	95.58	95.73	136.09	139.10	561.87
Revised True up for Depreciation (d) = (c) – {(b) - (a)}	(15.25)	(17.66)	(18.22)	38.98	46.37	34.22

Decisions taken by the Authority regarding True up of Regulatory Asset Base for the First Control Period as per Tariff Order for the Second Control Period

3.3.4 The Authority vide order no. 34/2019-20 had taken the following decision for true-up of RAB by considering the following:

Table 8: Decisions taken by the Authority for True up of Regulatory Asset Base for the First Control Period as per order no. 34/2019-20

Particulars	AERA’s Treatment as per the Second Control Period tariff order
1) CGF, ICT, GPU	Aeronautical
2) New Office Building(NOBS)	60% Non-Aero, 40% Common
3) Site Office Building	Common (78% Aero, 22% Non-Aero)
4) Township	75% Aero (based on critical/non critical staff occupancy)
5) Landscaping	Common
6) CSB	Aeronautical

- 3.3.5 The Authority had further allowed true-up of additional capital expenditure for FY2015-16. The Authority undertook an examination of the actual amount capitalised in FY2015-16 against the amounts approved in tariff Order no. 38/2013-14 for the First control period. The Authority's examination is as given in the table below:

Table 9: Examination of the Authority for True up of capital expenditure for the First Control Period

Particulars	AERA's Treatment as per the Second Control Period tariff order
1) 5 MW solar Power Plant	True-up of capitalised amount of Rs. 31.59 Crores in FY2015-16
2) Flood control and rain water harvesting	True-up of Rs. 20 Crores which was approved in the First Control Period and had been capitalized in FY2015-16
3) Fuel farm	True-up of Rs. 12 Crores for FY2014-15 as allowed in Order No. 38/2013-14
4) General capex	True-up of general capital expenditure worth Rs. 18.84 Crores incurred by HIAL out of Rs. 59.70 Crores of capex amount approved in the Order no. 38/2013-14
5) Employee Township	Capex incurred towards employee township based on critical and non-critical staff ratio (75% Aero)

- 3.3.6 Accordingly, the Authority had computed RAB based on actual additions and deletions given in the financial results of HIAL as certified by its auditor for such purpose.

Table 10: Aeronautical Regulatory Asset Base considered by the Authority for True up of the First Control Period as per Order no. 34/2019-20

Particulars (In Rs Crores)	2012	2013	2014	2015	2016	Total
Opening RAB (a)	1877.02	1771.63	1696.21	1601.99	1470.96	8417.81
Add: Additions to RAB (b)	15.21	31.59	15.34	15.64	117.83	195.61
Less: Deletions to RAB (c)	16.19	0.25	3.00	20.63	1.70	41.77
Less: Depreciation (including ADFG adjustment (d)	105.88	106.12	106.73	139.19	153.38	611.3
Closing RAB (e) = (a)+(b)-(c)-(d)	1771.63	1696.21	1601.99	1470.96	1445.12	7985.91
RAB for Tariff Determination {(a)+(e)}/2	1824.33	1733.92	1649.10	1536.48	1458.04	8201.87

Note: The Closing RAB is computed after reallocation of the common gross block based on the asset allocation ratio for the current year

Authority's examination of the matters as part of tariff determination for the Current Control Period

- 3.3.7 The Authority has carefully examined the calculation of RAB as per HIAL's submission in this regard. The Authority's examination of HIAL is detailed in the following sections.
- 3.3.8 The Authority, in its Airport Order No. 38/2013-14 for the First Control Period of HIAL had outlined the principles for inclusion / exclusion of assets from the aeronautical RAB to be

considered for tariff determination. The principles for exclusion of assets from RAB Boundary as per the abovementioned tariff order are presented below:

- The assets that substantially provide amenities/facilities/ services that are not related to, or not normally provided as part of airport services, may be excluded from the scope of RAB;
- The assets that in the opinion of the Authority do not derive any material commercial advantage from the airport (for example from being located close to the airport) may be excluded from the scope of RAB;
- The Authority will not include working capital in the RAB.
- Work in progress assets (WIP) assets would not be included in the RAB until they have been commissioned and are in use.
- The investment made from pre-funding levy (DF) would not be included in the RAB.
- Adoption of the 30% Shared Till mechanism for the Second Control Period as per the direction issued by the Ministry, which is also in line with the provisions of the National Civil Aviation Policy, 2016 and Authority's Order No. 14/2016-17 dated 23.01.2017

- 3.3.9 The Authority, in its Airport Guidelines, has provided for a mechanism for calculation of Regulatory Asset Base, wherein the initial RAB takes into consideration original value of fixed assets, accumulated depreciation, accumulated capital grants, subsidies or user contribution, and adjustment for value of land excluded from the scope of RAB. The same has been considered by HIAL in its MYTP submissions while computing RAB.
- 3.3.10 The Authority acknowledged that HIAL had correctly applied shared till methodology by computing RAB based on aeronautical assets and accordingly, depreciation too compromising only aeronautical depreciation.
- 3.3.11 With respect to the classification of assets and their inclusion and exclusion in the RAB, the Authority has outlined the principles of RAB boundary. This has been the stated position of the Authority that the assets, which are integral to the Airport or the activities pertaining to it or are integral for the functioning of the airport should form part of the RAB. Consequently, the assets pertaining to those activities, which are not integral or non-related to the airport, should be excluded from the RAB.
- 3.3.12 The Authority in para 3.2 and table no. 5 and 6 of this chapter has clearly explained the proposed treatment of various issues raised by HIAL for fresh consideration and the Authority proposes to use the same for the true up of the First Control Period as part of this Consultation Paper.
- 3.3.13 The Authority further noted that HIAL had classified the assets funded out of Advance Development Fund Grant of Rs. 107 Crores from the Government of Andhra Pradesh as common assets. The Authority had dealt with this issue in detail in chapter 5, para 5.54 to 5.55, of order no. 34/2019-20. As per the Authority's decision, since the State Support Agreement states that this amount of Rs. 107 Crores is neither to be repaid nor shall attract any interest, it was considered that this should be treated as a Grant in the calculations of RAB. Accordingly, under 30% shared till the Authority proposed to deduct this amount from aeronautical RAB only as opposed to a proportionate deduction from aeronautical and non-aeronautical RAB by HIAL
- 3.3.14 Based on the above consideration, the matters pertaining to the RAB for the First Control Period have been reviewed by the Authority and based on its philosophy of tariff determination principles guided by AERA Act, AERA Guidelines, TDSAT orders and orders issued by the Authority from time to time, the Authority has recomputed the additions to RAB and proposes no revision to RAB for the First Control Period.

- 3.3.15 On the issue of revised aeronautical depreciation, the Authority would like to state that as it does not propose any changes to RAB on account of revised submission of HIAL, consequently, there will not be any changes in the computation of aeronautical depreciation.

3.4 **True up of Weighted Average Cost of Capital**

HIAL's submission regarding true up of Weighted Average Cost of Capital for the First Control Period

- 3.4.1 HIAL in its submission has considered the post-tax Cost of Equity as 24% in line with the study carried out by Jacobs and cost of debt and gearing ratio as what has been determined in order no. 34 2019-20. Hence, as a result of this, HIAL has submitted a revised WACC as 11.46% as against 10.10% considered by the Authority in Order No. 34/2019-20.

Based on these considerations, HIAL has re-computed the return on RAB and submitted the same for true-up as below:

Table 11: Aeronautical Regulatory Asset Base submitted by HIAL for True up of the First Control Period as per MYTP

Particulars (In Rs. Crores)	2012	2013	2014	2015	2016	Total
True-Up as per the Second Control Period Order (a)	-20.07	-19.53	-20.01	-27.20	-32.94	-119.75
As per the Second Control Period Order (b) = (c) * (d)	184.26	175.13	166.56	155.18	147.26	828.39
Regulatory Asset Base (Refer table 10) (c)	1824.33	1733.92	1649.10	1536.48	1458.04	8201.87
Fair Rate of Return (d)	10.10%	10.10%	10.10%	10.10%	10.10%	
Revised Aero RAB as per the Third Control Period filing basis (e) = (f) * (g)	190.80	180.69	171.30	159.13	151.70	853.62
Regulatory Asset Base (f)	1664.56	1576.32	1494.46	1388.28	1323.46	7447.08
Fair Rate of Return (g)	11.46%	11.46%	11.46%	11.46%	11.46%	
Revised True-Up (h) = (e) - {(b) - (a)}	(13.52)	(13.97)	(15.26)	(23.25)	(28.50)	(-94.50)

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding True up of WACC for the First Control Period as per Tariff Order for the Second Control Period

- 3.4.2 The Authority had considered submission of HIAL based on Decision No. 10 of the HIAL's Tariff Order No. 38/2013-14. The Authority had decided to true up the WACC on account of changes in equity, and reserves and surplus, adjustments to cost of debt (subject to the cap imposed on the cost of debt as per Decision No. 8 of the Order No. 38/2013-14) and additional means of finance that HIAL may contract. Thus, considering the audited financial results for the period FY 2008-09 to FY 2015-16 and cost of equity at 16%, the Authority had computed the WACC for the First Control Period as 10.10%

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- 3.4.3 The Authority notes the submission made by HIAL for considering cost of equity as calculated by Jacob's report for the First Control Period. The Authority has looked into the matter of cost of equity and as suggested in table no. 5, the Authority proposes to adopt 16% as cost of equity for HIAL for the true up of the First Control Period and as a result proposes no revision in calculation of WACC for the First Control Period.

3.5 True up of the Operating Expenses

HIAL's submission regarding true up of operating expense for the First Control Period

- 3.5.1 HIAL in its MYTP submission for the Third Control Period has submitted true-up of operating expenses for Authority's consideration. HIAL, based on its own allocation methodology, has recomputed the operating expenditure for the following heads:
- On the basis of the opex allocation methodology as submitted by HIAL as part of Annexure 9 of its MYTP submission for the Third Control Period, HIAL has submitted revised true-up of operating expenses and concession fee.
 - Further HIAL stated that the Authority vide the Second Control Period Order [Order No 34/2019-20 dated 27th March 2020] had allowed for the recovery of forex losses as an operating expense to the extent that the effective cost of borrowing in foreign currency (net of forex gains / losses) is not higher than the cost of RTLs in respective years. However, this treatment led to only partial recovery of forex losses incurred by the company. Based on the rationale and justification provided by HIAL in its MYTP, true up of operating expenses on account of allowance of complete forex losses incurred by the company has been considered in the workings for the Authority's reconsideration.
 - HIAL has further submitted for true up of CSR expenses not recognized in the Order No.34/2019-20 on the grounds that non consideration of CSR expense as part of opex will lead to lower equity return since CSR expenses are statutory in nature.
 - HIAL has further considered the true up for incidental income from NoB, SOB and township to be netted off from common expenses as stated in earlier chapters.

Table 12: Operating Expenses submitted by HIAL for True up of the First Control Period as per MYTP

Particulars (In Rs. Crores)		2012	2013	2014	2015	2016	Total
1.	True-Up as per the Second Control Period Order (a)	-13.83	-18.32	-22.88	-33.04	-39.88	-127.95
2.	Aero Expenses as per the Second Control Period Order (b)	229.93	232.61	244.42	237.70	252.08	1196.74
3.	Revised Aero Expenses as per the Third Control Period Filing assumptions (incl. CSR Expenses) (c)	218.47	221.47	254.66	247.65	267.68	1209.93
4.	CGF Opex	11.46	11.14	12.15	13.25	14.46	62.46
5.	Forex Losses (not recognized in the Second Control Period Order)	0.00	0.00	22.37	23.42	30.36	76.15
6.	Revised True up for Opex (d) = (c) - {(b) - (a)}	-25.29	-29.46	-12.66	-22.87	-23.98	-114.26

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding True up of operating expenses for the First Control Period as per Tariff Order for the Second Control Period

3.5.2 The Authority had trued up the operating expenses of the First Control Period during the tariff determination of the Second Control Period based on its methodology and principles as stated in the earlier chapters. Further,

3.5.3 The Authority had trued-up the following elements of operating expenses for the First Control Period in line with Decision No. 12 of the Order No. 38/2013-14,

- Mandated costs incurred due to directions issued by Regulatory Agencies like DGCA.
- Costs on actuals related to electricity and water charges.
- Operating expenses pertaining to the selected projects, proposed by HIAL to be undertaken under the Future Capital Expenditure based on evidential submissions made by HIAL.
- Allowed bad debts from airlines but disallowed bad debts arising from default of group companies.

Table 13: Operating Expenses considered by the Authority for True up for the First Control Period as per Order no. 34/2019-20

Particulars (In Rs. Crores)	2012	2013	2014	2015	2016	Total
Aero Eligibility (Items without True-Up)	177.04	166.28	180.19	179.20	197.71	900.42
Aero utilities (1)	15.89	23.48	23.48	23.48	20.48	106.81
Aero Rates & Taxes (2)	6.25	13.14	13.14	13.14	13.14	58.81
Aero Bank Charges (3)	2.98	1.81	1.81	1.81	1.81	10.22
Non-Aero Eligibility (Items without True-Up) (4)	29.03	32.97	34.42	37.75	42.25	176.42
Non-Aero Utilities (5)	0.00	0.00	0.00	0.00	0.00	0.00
Non-Aero Rates & Taxes (6)	0.74	1.85	1.85	1.85	1.85	8.14
Non-Aero Bank Charges (7)	0.37	0.26	0.26	0.26	0.26	1.41
CGF Expenses (8)	11.46	11.14	12.15	13.25	14.46	62.46
As per Order No. 38 under Single Till (9) = sum of (1) to (8)	243.76	250.93	267.30	270.74	291.96	1324.69
Aero Eligibility (Items without True-Up including forex. Adj.) (a)	204.66	193.66	199.74	201.03	219.62	1018.72
Utilities (b)	15.89	23.48	20.68	19.23	22.42	101.69
Rates & taxes (c)	6.35	13.59	8.86	7.94	5.15	41.89
Bank Charges (d)	3.04	1.88	2.91	9.50	4.89	22.22
Bad Debts Written-Off (e)	0.00	0.00	12.23	0.00	0.00	12.23
Total (f)= (sum of a to e)	229.93	232.61	244.42	237.70	252.08	1196.75

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3.5.4 The Authority notes the submission of HIAL in matter of true-up of operating expenses for the First Control Period and has reviewed the submission of HIAL in line with AERA Act, AERA guidelines, TDSAT orders and the Authority's orders issued from time to time. The views of the Authority are as follows:

- The Authority has detailed out the principles of tariff determination and its methodology of allocation of aeronautical and non-aeronautical services in its Order No. 34/2019-20. Based on this methodology the Authority had trued-up the actual expense of HIAL for the First Control Period for aeronautical opex and aeronautical concession fees. As per HIAL's current submission, HIAL has re-computed the aeronautical opex based on its own methodology. As the Authority had dealt with this in detail in chapter no. 7 of its Order No. 34/2019-20, the Authority proposes no revision in aeronautical opex owing to allocation methodology submitted by HIAL.
- On the matter of true-up of forex losses based on actual loss as ascertained by HIAL, the Authority would like to re-iterate that the Authority has specified the treatment of forex losses in table no.5, by comparing the cost of borrowing through ECBs (foreign currency borrowings) with that of the RTLs (domestic borrowings) and allowing HIAL to recover forex losses to the extent that the effective cost of borrowing in foreign currency (net of forex gains / losses) which is not higher than the cost of RTLs.
- Further, the Authority has also looked into the matter of allowing Expenditure on Corporate Social Responsibility (CSR) as a pass through based on the TDSAT's judgment dated December 16, 2020 in the matter of Bangalore International Airport Limited vs. Airports Economic Regulatory Authority of India which is as follows:

"Hon'ble TDSAT held that there is no difference between CSR expenditure mandated by law and an expenditure in the nature of income tax which is allowed as a cost pass-through. It reasoned that not allowing such cost would amount to indirectly lowering the percentage fixed as a fair return on equity, as the CSR expenditure would be apportioned from the return allowed to equity holders. TDSAT therefore set aside the decision of AERA and directed it to pass relevant orders so that reduction in determined fair return does not cause loss to equity holders due to CSR expenditure. It further directed AERA to conduct the necessary truing-up exercise"

- The CSR is calculated based on the provision of Companies Act, 2013 where the average net profit in the aeronautical P&L for preceding three years is calculated and in case the value is positive CSR is computed as 2% of average net aeronautical profit. This is the maximum CSR eligibility applicable to be trued up as part of operational expenditure. However in case where the CSR actually paid by HIAL is lower than the eligible value, the Authority proposes to use the actual CSR values as per audited financials of HIAL.
- Based on this judgment, the Authority has decided to true-up the expenditure towards CSR derived based on aeronautical profit & loss statement as per the Authority's computation. The following table provides the net aeronautical profit computed for the First Control Period (FY12-FY16) for HIAL:

Table 14: CSR Expenses proposed to be considered by the Authority for True up of the First Control Period

S.no	Particulars (In Rs. Crores)	2012	2013	2014	2015	2016	Total
1.	Average Net Aero Profit for preceding three years (a)	-108.37	-73.07	-20.69	12.26	-68.12	-257.99
2.	CSR Computation: if (a) > 0, then (b) = (a) * 2%	0.00	0.00	0.00	0.25	0.00	0.25

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S.no	Particulars (In Rs. Crores)	2012	2013	2014	2015	2016	Total
3.	Aero CSR Expenditure by HIAL	1.62	1.26	1.40	1.50	1.78	7.56
4.	CSR Expenses to be Trued-Up = (b)	0.00	0.00	0.00	0.25	0.00	0.25
5.	WACC	10.10%	10.10%	10.10%	10.10%	10.10%	
6.	Discounting Factor for the First Control Period (c)				1.16		
7.	PV of True Up (as on 31.03.2016) (d) = (b) * (c)	-	-	-	0.29	-	0.29
8.	Discounting Factor for the Second Control Period (e)						1.85
9.	PV of True Up (as on 31.03.2022) = (d) * (e)						0.54

3.5.5 The Authority in its order No. 34/2019-20 had stated that it has changed the treatment of revenue from NOB, SOB and township and instead of netting of from common expenses, the Authority has allocated rental revenues from SOB and NOB as part of non-aeronautical revenues and computed the total true up (refer table 6). The Authority would like to re-iterate its stand on the same and proposes no revision in this matter.

3.6 True up of the Aeronautical Taxes

HIAL's submission regarding true up of taxes for the First Control Period

3.6.1 HIAL has requested the Authority to allow for true up for aeronautical tax considering the tax applicable on the aeronautical PBT incorporating 30% non-aeronautical PBT as part of aeronautical revenue for tariff determination in place of allocation of actual tax outgo based on ratio of Aeronautical and Non Aeronautical Taxes as per the respective profit and loss statement as considered by the Authority in the Second Control Period tariff order. Further HIAL has re-computed aeronautical tax eligibility by changing allocation of CGF and other revenue streams

3.6.2 Aeronautical tax has been revised based on the tax eligibility as per revised Aeronautical P&L incorporating 30% non-aeronautical PBT as part of aeronautical P&L as follows:

Table 15: Tax submitted by HIAL for true up of the First Control Period as per MYTP

Particulars (In Rs. Crores)	2012	2013	2014	2015	2016	Total
True-Up as per the Second Control Period Order (a)	-8.96	-18.22	-21.47	0.00	0.00	-48.65
Tax on Aero P&L (b)	0.00	12.77	12.49	0.00	0.00	25.26
Revised Aero tax as per Third Control Period Filing assumptions						
Tax on Aero P&L (c)	0.00	7.43	3.99	0.00	0.00	11.42
Revised True-Up (d) = (c) - {(b) - (a)}	-8.96	-23.56	-29.97	0.00	0.00	-62.49

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding True up of Tax for the First Control Period as per Tariff Order for the Second Control Period

3.6.1 The Authority has noted HIAL's submission for true up of aeronautical taxes based on its methodology of estimating aeronautical tax from aeronautical profit & loss statement including 30% non-aeronautical PBT.

The detailed rationale for the abovementioned consideration is discussed and summarised in paras 10.2.2 – 10.2.5 of chapter 10 of this Consultation Paper.

The Authority vide order No. 34/2019-20 had stated that it understands that under the 30% shared till mechanism, HIAL will have to incur taxes based on its profits as an entity however, for determination of tariffs HIAL should consider taxes incurred pertaining only to its aeronautical operations. Therefore, the allocation of the total taxes incurred by HIAL into aeronautical and non-aeronautical components becomes essential. HIAL has allocated its taxation between aeronautical and non-aeronautical by preparing a separate aeronautical profit & loss account that computes taxes for its aeronautical operations.

However, the Authority is of the view that it will be prudent to allocate taxes after considering a non-aeronautical profit and loss account in addition to the aeronautical profit & loss account used by HIAL. The Authority proposes to allocate HIAL's taxes (as per the aggregate profit & loss account) between aeronautical and non-aeronautical components based on the ratio of taxes as per both aeronautical and non-aeronautical profit & loss accounts. Based on the above allocation method, HIAL's taxes for true-up were given as:

Table 16: Tax considered by the Authority for True up of the First Control Period as per Order no. 34/2019-20

Particulars (In Rs. Crores)	2012	2013	2014	2015	2016	Total
Aeronautical PBT	-0.47	98.24	94.29	-221.35	-60.08	-89.37
Aeronautical tax (a)	0.00	20.59	19.76	0.00	0.00	40.35
Non-Aeronautical PBT	73.36	94.27	115.93	128.12	159.16	570.84
Non-Aeronautical tax (b)	15.77	29.38	37.28	47.18	57.51	187.12
PBT for HIAL as a standalone entity	29.44	143.69	82.41	-191.37	20.09	84.26
Tax for HIAL as a standalone entity (c)	8.96	30.99	36.04	0.00	0.00	75.99
Ratio for allocation of taxes to be incurred by HIAL as a standalone entity (d)={a)/(a)+(b)}	0%	41%	35%	0%	0%	
Aeronautical portion of the total tax to be considered for tariff determination (e)=(d)*(c)	0.00	12.77	12.49	0.00	0.00	

Source: Order no 34/2019-20

Authority's examination of the matters as part of tariff determination for the Current Control Period

3.6.2 The Authority in its Order No. 34 2019/20 has stated its stance on calculating the taxation building block by allocating HIAL's taxes (as per the aggregate profit & loss account) between aeronautical and non-aeronautical components based on the ratio of taxes as per both aeronautical

and non-aeronautical profit & loss accounts. The Authority proposes to continue with its stance and does not propose any revision in this matter.

3.7 True up of Non-Aeronautical Revenues

HIAL's submission regarding true up of non-aeronautical revenues for the First Control Period

3.7.1 For the purpose of the true up of the non-aeronautical revenues for the First Control Period, HIAL has made the adjustments to non-aeronautical revenues cross-subsidy for revised true-up calculation in line with the allocation methodology and revenue groupings as summarized below:

Table 17: Comparative summary of the revenue grouping submitted by HIAL for the Third Control Period as per MYTP vs considered by the Authority for the Second Control Period as per Order no. 34/2019-20

Particulars	Authority's Treatment as per the Second Control Period Tariff Order	Treatment as per the Third Control Period filing
Allocation (Revenue)		
Treatment of Revenues from Commercial Property Development	Non Aeronautical	Non Airport (Outside Regulatory Purview)
Treatment of Revenues from CGF, ICT, GPU	Aeronautical	Non Aeronautical (in line with Concession Agreement)
Revenues from NOB and SO	Non Aeronautical	Common (netted off from common expenses)
Revenues from Township	75% Aero, 25% Non-Aero	100% Aero (netted off from aero expenses)
Rental Income from Fuel Stations	Aero Revenues (Akin to Fuel Farm)	Airside fuel station – Non Aero Land side fuel station – Non Airport
Dividend and Interest Income from Subsidiaries	From Cargo Subsidiary- Aero From Duty Free Subsidiary – Non Aero	Outside Regulatory purview
Other income from SFIS Scrips	96% Aero; 4% Non-Aero	Outside Regulatory purview
Cross Subsidisation	30% of NAR	30% of NAR PBT

Source: HIAL MYTP for the Third Control Period

3.7.2 Further, the revised true-up for the non-aeronautical revenues as submitted by HIAL is summarized in the below table:

Table 18: Non-Aeronautical Revenues submitted by HIAL for True up of the First Control Period as per MYTP

Particulars (In Rs. Crores)	2012	2013	2014	2015	2016
True-Up as per the Second Control Period Order (a)	118.33	140.27	113.41	125.93	139.92
As per Actuals (b)	38.32	45.96	50.96	58.55	66.85

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Particulars (In Rs. Crores)	2012	2013	2014	2015	2016
Eligible Non-Aeronautical Revenue (c)	127.73	153.22	169.88	195.18	222.82
Revised Non Aero Revenues as per the Third Control Period Filing assumptions (d) = {(c) + (e) + (f) – (g) – (h) – (i) – (j) – (k)}	110.95	135.35	163.95	177.83	216.72
Add: CGF revenues (e)	91.69	91.66	98.15	99.47	100.99
Add: Fuel Station rentals (f)	0.14	0.14	0.15	0.15	0.16
less: Income from CPD (g)	2.68	5.17	5.28	5.35	1.21
less: Dividend and Interest Income from Duty Free Subs (h)	0.70	1.83	0.96	0.08	2.64
less: NOB, Township and SO rentals (i)	0.82	1.41	1.89	2.08	3.08
less: SFIS Scrips revenues (j)	0.03	0.07	0.00	0.00	0.00
less: Non Aero Operating Expenses, Dep & Interest (k)	104.39	101.18	96.10	109.47	100.32
Non Aero Revenues for 30% cross subsidisation (l) = (d) * 30%	33.28	40.61	49.19	53.35	65.02
Revised True-Up (m) = (a) – {(l) - (b)}	123.37	145.62	115.18	131.13	141.75

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding True up of Non-aeronautical revenue for the First Control Period as per Tariff Order for the Second Control Period

- 3.7.3 The Authority had proposed to apply 30% shared till for determination of tariffs, 30% of non-aeronautical revenues shall be used to cross-subsidise aeronautical operations. The Authority's principles for true-up of non-aeronautical revenues are presented below.
- 3.7.4 The Authority has treated CGF revenues as aeronautical based on its principles and methodology and hence they have been excluded while computing cross subsidy on account of non-aeronautical revenue.
- 3.7.5 The Authority had considered property development as a non-aeronautical activity. Accordingly, the income from property development was used to cross-subsidize airport operations to the extent of 30% and any expenditure associated with these revenues would not be allowed through RAB or Operating Expenses.
- 3.7.6 Further, the Authority did not consider interest (other than those from its subsidiaries) and other income for determining aeronautical tariffs for the Second Control Period for RGI airport, as stated below:

“The Authority had opined that it would not want to interfere in managing HIAL's day-to-day operations and accordingly decided not to consider interest income other than those from its subsidiaries, profit on sale of current investments, write back of provisions no longer required, profit on sale of discarding assets, and other non-operating income in Order No. 34/2019-20/HIAL for determining aeronautical tariff for RGI airport for the Second Control Period.

Moreover, the Authority had decided to further review its stance on this treatment based on consultations with stakeholders while determining tariff for the Third Control Period.”

The summary of the true up for the non-aeronautical revenues as considered in order no 34/2019-20 is summarized below:

Table 19: Non-Aeronautical Revenues considered by the Authority for True up of the First Control Period as per order no 34/2019-20

Particulars (In Rs. Crores)	2012	2013	2014	2015	2016	Total
Non-Aero Revenue (a)	129.39	151.75	160.93	180.86	202.97	825.90
Interest Income (b)	24.58	29.70	0.00	0.00	0.00	54.28
Revenue from Non-airport Land (c)	2.69	4.78	3.44	3.62	3.80	18.32
As per Order No. 38 @ 100% (d) = (a) + (b) + (c)	156.65	186.23	164.37	184.48	206.77	898.50
Actual Non-Aeronautical Revenue (e)	127.74	153.21	169.88	195.18	222.82	868.83
Actual Non-Aeronautical revenue net of Concession Fee (f)	122.63	147.09	163.08	187.37	213.91	834.08
As per actuals (g) = 30% * (f)	36.79	44.13	48.93	56.21	64.17	250.22
True up (h) = (d) – (g)	119.86	142.10	115.44	128.27	142.60	648.28

Source: Order no 34/2019-20

Authority’s examination of the matters as part of tariff determination for the Current Control Period

- 3.7.7 The Authority has noted the submission of HIAL for considering the non-aeronautical PBT as cross subsidy for computing the Aggregate revenue requirement (ARR). The Authority proposes to maintain its stance as discussed in Para 3.2.20 of this Consultation Paper.
- 3.7.8 The Authority has examined HIAL’s submission with regard to true up of non-aeronautical revenue. The Authority has proposed its stance in para 3.2 and table no.5 of this consultation paper which is in line with AERA Act, AERA guidelines, TDSAT orders and the Authority’s orders issued from time to time. The treatment of revenues pertaining to CGF services and related services, ICT, GPU, revenue from NOB, SO and Township, income from real estate land development, and dividend income from subsidiary and fuel station is in line with explanation provided in table no. 6.
- 3.7.9 Further, the Authority also notes that HIAL has proposed to net off the income from NOB, SO and township against operating expenses. However, the Authority proposes to modify this treatment and allocate rental revenues from SOB and NOB as part of non-aeronautical revenues as per table no. 6.
- 3.7.10 Further, the Authority proposes to treat the income from SFIS by allocating the realized income from SFIS scrips between aeronautical and non-aeronautical based on the allocation of income that resulted in earning these SFIS scrips as HIAL earned foreign income from certain aeronautical or non-aeronautical activities as part of the airport operations, which in turn made it eligible for earning the SFIS scrips as per table no. 6.

- 3.7.11 The Authority proposes to treat the non-aeronautical revenue as per above consideration and accordingly proposes no true-up for the First Control Period as per HIAL's submission for consideration of non-aeronautical revenues for the First Control Period.

3.8 True up of Aeronautical Revenues

HIAL's submission regarding true up of aeronautical revenues for First Control Period

- 3.8.1 HIAL has trued up aeronautical revenue based on changes in allocation and revenue grouping as submitted by HIAL in the previous section.

Table 20: Aeronautical Revenues submitted by HIAL for the First control Period as per MYTP

Particulars (In Rs. Crores)	2012	2013	2014	2015	2016	Total
True Up (a)	-7.40	-14.40	5.17	-45.19	-202.29	-264.11
Aero Revenues as per Second Control Period Order (b)	474.46	558.99	559.38	227.11	400.83	2220.77
Aeronautical Revenue (c)	379.50	458.89	454.35	119.31	289.91	1701.96
Cargo, Ground Handling & Fuel Farm (d)	94.96	100.10	105.03	107.80	110.92	518.81
Revised Aero Revenues as per Third Control Period Filing assumptions (e) = (b) – (f) – (g) – (h) – (i) – (j) – (k) – (l)	377.77	455.27	453.94	118.87	288.83	1694.68
Less: CGF revenues (f)	91.69	91.66	98.15	99.47	100.99	481.96
Less: CSB revenues (g)	2.23	2.46	2.71	3.11	3.49	14.00
Less: Fuel Station rentals (h)	0.42	0.41	0.42	0.45	0.47	2.17
Less: Dividend and Interest Income from Cargo Sub (i)	1.04	5.99	4.16	5.21	6.43	22.83
Less: Township rentals (j)	0.00	0.00	0.00	0.00	0.63	0.63
Less: SFIS Revenues (k)	1.30	3.19	0.00	0.00	0.00	4.49
Less: reversal of loss of inventory (l)	0.00	0.00	0.00	0.00	0.00	0.00
Revised True-Up (m) = (a) - {(e) - (b)}	89.29	89.32	110.61	63.05	-90.29	261.98

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding True up of aeronautical revenues for the First Control Period as per Tariff Order for the Second Control Period

- 3.8.2 The Authority had considered the aeronautical revenue based on reclassification of CGF into aeronautical revenue as given below:

The summary of the true up for the aeronautical revenues as considered in order no 34/2019-20 is summarized below:

Table 21: Aeronautical Revenues considered by the Authority for the First Control Period as per Order No. 34/2019-20

Particulars (In Rs. Crores)	2012	2013	2014	2015	2016	Total
As per Order No. 38 under Single Till (a) = (b) + (c)	467.06	544.59	564.54	181.92	198.53	1956.64
Aeronautical Revenue (b)	376.25	454.31	473.70	84.79	95.85	1484.9
Cargo, Ground Handling & Fuel Farm (c)	90.81	90.28	90.84	97.13	102.68	471.74
As per Actuals (d) = (e) + (f)	474.46	558.99	559.37	227.11	400.82	2220.75
Aeronautical Revenue (e)	379.50	458.89	454.35	119.31	289.91	1701.96
Cargo, Ground Handling, Fuel Farm & CSB (f)	94.96	100.10	105.03	107.80	110.92	518.81
True-Up (g) = (a) – (d)	-7.40	-14.40	5.17	-45.19	-202.29	-264.11

Source: Order no 34/2019-20

Authority's examination of the matters as part of tariff determination for the Current Control Period

- 3.8.3 The Authority has examined HIAL's submission pertaining to true up of aeronautical revenue for the First Control Period. The Authority has clarified its stance on issues raised by HIAL for classification of CGF services as well as other revenue from NOB, SO, SFIS, Fuel Station, Dividend and interest income from cargo subsidiary per Table no. 5 and Table no. 6 of this consultation paper.
- 3.8.4 In view of the above and the detailed analysis in this Chapter, the Authority finds no merit in revision of any building blocks, except providing for CSR expenses in line with direction of Hon'ble TDSAT in order dated December 16, 2020 (BIAL order) as shown in Table 14.

3.9 Authority's Proposal regarding True up of the First Control period

Based on the material before it and based on its analysis, Authority proposes the following regarding true up for the First Control Period:

- 3.9.1 The Authority proposes to consider the treatment of various issues raised by HIAL as per table no.5 and 6 in line with AERA Act, AERA Guidelines, TDSAT orders and the Authority's orders issued from time to time.(para 3.2).
- 3.9.2 The Authority proposes not to true up any building block other than CSR expenses. Subsequently, the Authority proposes no revision in computation of RAB and depreciation. (para 3.3.14 – 3.3.15), Equity and WACC (para 3.4.3), computation of tax, non-aeronautical revenue and aeronautical revenue.
- 3.9.3 The Authority proposes to use non-aeronautical revenue for cross subsidisation under 30% shared till (Para 3.7.3 – 3.7.6)
- 3.9.4 The Authority proposes to true up the operating expenses on account of CSR expenses (para 3.5.4).
- 3.9.5 The Authority proposes the true up of Rs. 0.54 Crores (as on 31.03.2022) which shall be provided to the airport operator along with the proposed true up for the Second Control Period as part of the tariff determination for the Third Control Period. (Table no.14).

4. TRUE UP FOR THE SECOND CONTROL PERIOD

4.1 Issues raised by HIAL pertaining to True up for the Second Control Period

4.1.1 HIAL has raised the following issues concerning the Second Control Period for true up as part of its MYTP.

- Regulatory Asset Base,
- Weighted Average Cost of Capital,
- Aeronautical Depreciation,
- Operating Costs,
- Aeronautical Taxes,
- Aeronautical Concession fees,
- Treatment of various items under Revenue from Non-aeronautical Revenue,
- Aeronautical revenue

4.1.2 For each of the issues raised by HIAL, the Authority has looked at the decisions taken at the time of tariff determination for the Second Control Period and has then proceeded to examine the same as part of the tariff determination for the Current Control Period. The following paras explain these issues in detail.

4.2 True up of the Regulatory Asset Base

HIAL's submissions regarding true up of Regulatory Asset Base for the Second Control Period

4.2.1 HIAL has recalculated the RAB based on the following considerations:

- The actual asset additions and deletions from FY2017 till FY2020 and revised projections for FY2021
- The allocation methodology considering CGF assets as Non aero, administrative office building as non-airport, NOB and SO as common assets and employee township as Aero
- Assets funded out of ADFG as common
- Further HIAL has re-computed the RAB based on the following interpretation of its own methodology:

Table 22: Comparison of Regulatory Asset Base treatment for the Second Control Period as per Order No. 34/2019-20 and for the Third Control Period as per MYTP

Allocation	The Authority's Treatment as per the Second Control Period Tariff Order	Treatment as per the Third Control Period filing
1. CGF, ICT, GPU	Aeronautical	Non Aeronautical (in line with Concession Agreement)
2. New Office Building (NOB)	60% Non-Aero, 40% Common	100% Common (incidental income netted off from common expenses)
3. Site Office Building	Common (78% Aero, 22% Non-Aero)	100% Common (incidental income netted off from common expenses)
4. Township	75% Aero (based on critical/non critical staff occupancy)	100% Aero (incidental income netted off from Aero expenses)
5. Landscaping	Common	Aero
6. CSB	Aeronautical	Non- Airport (outside Regulatory)

4.2.2 In terms of additions to RAB, HIAL has categorised the capex into the following categories:

- **True up for capex incurred towards expansion project**

- HIAL had submitted expansion capex of Rs. 1989 Crores for 20 million passengers as part of the Second Control Period filing. The Authority appointed RITES Limited (“RITES”) to examine the expansion project cost submitted by HIAL for the terminal expansion including ramp and forecourt and airside improvements. Based on this study, the Authority approved the project cost of Rs. 1613.77 Crores (excluding IDC) towards the expansion of the Airport to 20 million passengers from 12 million passengers.
- As per MYTP submission of HIAL, the airport experienced significant traffic growth during FY16-FY19, rendering the earlier expansion plan to be revisited in order to meet this growing demand. Accordingly, HIAL revised the capacity expansion plan and initiated capacity expansion to 34 MPPA to cater to the growth in the Third Control Period (FY22-FY26). Out of the above expansion project, two sub projects pertaining to expansion of the Kerb & Approach ramp and construction of parking stands and aprons, amounting to Rs. 745.42 Crores had been capitalized in the books of GHIAL till the end of FY2020. Hence, additions to RAB on account of this capitalization has been considered as true up for the Second Control Period.

- **True up for capex incurred towards runway re-carpeting**

- HIAL as part of the Second Control Period tariff filing had apprised the Authority, the need for runway re-carpeting for which the Authority had approved Rs. 103 Crores. This capex component included 23 meters out of the full width of 75 meters of main runway along its entire length of 4.26 km and re-carpeting of the 50% of secondary runway, connecting taxiways & apron service roads covering 5.12 lakh sq.m. The capex for this was planned to be undertaken in FY18-FY21.
- HIAL in its tariff filing for the Third Control Period further states that in order to ensure minimum operational impact during the implementation of the project, HIAL decided to defer resurfacing initiative till the main expansion project is commenced. Additionally HIAL was of the view that this step would help maximize the movements on the airside. The traffic at the airport grew at unprecedented rate owing to which there was visible distress in runway and several taxiways which demanded immediate rehabilitation works. This created a need to for runway system upkeep and upgrade measures to avoid sudden disruptions and ensuring safety.
- Further, HIAL had appointed RITES to conduct airfield pavement structural analysis. This report specified the need for carrying out structural enhancement of flexible pavements of main runway, secondary runway, associated taxiways for sustaining the operations of forecast traffic and aircrafts and eventually necessitated the need for an extensive enhancement works. Hence, HIAL intended to carry out enhanced scope of work for runway re-carpeting as against what was approved by the Authority in Order No. 34 2019/20.
- As per recommendations of RITES study, HIAL has taken up re-carpeting the runway width of 60 meters of main runway along its entire length of 4.26 km including the whole of secondary runway, existing rapid exit taxiways, connecting taxiways encompassing the total area of 7.05 lakh sq.m. with thickness ranging between 75 mm – 475 mm as against earlier plan of 40 mm. Additionally, HIAL has also planned to upgrade the existing Airfield Ground Lighting (AGL) System and upgrade the main runway (09R 27L) and associated taxiways/taxi lane to CAT-II AGL system and upgrade the secondary runway to CAT-I in order to meet operational efficiency and smooth operations. As per HIAL’s submission, these works were planned to be completed in FY21 itself. However, based on the actual

audited capex of FY21 as submitted by HIAL on 21.05.2021, only a part of the work has been completed.

- **True up for General Capex incurred during FY17 to FY20 and proposed general capex for FY2021**

- HIAL has submitted the true-up of general capex for FY17-FY20 based on actual expenditure incurred by HIAL during this period. As per HIAL, the existing terminal capacity is 12 MPPA while the traffic handled was 18.3 Mn, 21.4 Mn and 21.7 Mn in the years FY18, FY19 and FY20 respectively. In order to address the growing air traffic and sustaining the service quality and passenger experience, HIAL undertook various interim initiatives during the said period to cater to annual passenger growth while embarking on the expansion as long term solution. The interim measures included strategies/projects to sweat the assets to the maximum while sustaining the world class service quality and passenger experience such as construction of an Interim International Departure Terminal (IIDT) and Interim Domestic Arrival Terminal (IDAT) which helped in creating additional terminal capacity.
- Further, the general capex for the Second Control Period included capex towards all these projects along with the capex towards the maintenance and upgrade of existing facilities. Further, HIAL also submitted the actual audited capex incurred in FY21 on 21.05.2021 for consideration by the Authority.

4.2.3 Further, as per HIAL, the Authority considered expansion project capex and re-layering of runways and taxiways towards RAB. Additionally, the IDC was computed on the entire project cost. Also, the general & maintenance capex and the capex towards 8 MW solar power plant was approved by AERA. The classification approved for some of the major assets is presented below:

- Additional 4 lane ramp – Aeronautical
- Forecourt expansion – Common
- Terminal expansion – East module 1 - Common
- Pier expansion – East module 1 – Common
- Terminal expansion – West modules - Common
- Pier expansion – East module 2 – Common
- Pier expansion – West module - Common
- Apron development – Aeronautical

4.2.4 As part of its submission, HIAL has detailed the allocation methodology in Annexure 9 of the MYTP for the Third Control Period. The key points from HIAL's submission are presented below:

- Aeronautical assets are assumed to be those assets which are necessary or required for providing the below mentioned aeronautical services at the airport and all such assets that HIAL may procure in accordance with directions of GOI for or in relation to provision of any of the reserved activities including intangible assets and other assets which are directly related to the aeronautical services.
- Non-aeronautical assets are those which are necessary for the performance of the non-aeronautical services at the airport.
- Common assets are those assets which are not identifiable/categorized into either aeronautical asset or non-aeronautical assets.
- Passenger terminal building, heating ventilation and air conditioning system etc. are allocated in the ratio of the area of terminal building used for aeronautical and non-aeronautical services.
- Site offices, new office building, quarters for outside security personnel, common hardware, software and communication system, central stores building etc. are allocated on the basis of aero and non-aero assets ratio.

HIAL had submitted the actual capex spent and capitalization of assets for FY21 on 11.05.2021 which has been shown in the table below:

Table 23: Capex submitted by HIAL for the Second Control Period as per MYTP

As per HIAL's MYTP revised submission for actuals of FY21							
Sr. No.	Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
1	Expansion Capex (a)	0.00	0.00	328.87	416.55	25.62	771.04
2	Runway Re-carpeting & AGL upgrade (b)	0.00	0.00	0.00	0.00	66.44	66.44
3	General Capex (c)	49.76	67.85	265.89	79.26	87.30	550.06
4	Total Capex (d) = (sum of a to c)	49.76	67.85	594.76	495.81	179.36	1387.54
5	Aeronautical Portion of (d)	36.57	60.09	559.84	491.04	170.66	1318.20

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding Regulatory Asset Base as per Tariff Order for the Second Control Period

- 4.2.5 The Authority at the time of tariff determination of the Second Control Period for HIAL had outlined the principles for inclusion / exclusion of assets from the aeronautical RAB to be considered for tariff determination as per Order No. 38/2013-14 for the First Control Period of HIAL as given below:
- The assets that substantially provide amenities/ facilities/ services that are not related to, or not normally provided as part of airport services, may be excluded from the scope of RAB;
 - The assets that in the opinion of the Authority do not derive any material commercial advantage from the airport (for example from being located close to the airport) may be excluded from the scope of RAB;
 - The Authority will not include working capital in the RAB;
 - Work in Progress (WIP) assets would not be included in the RAB until they have been commissioned and are in use;
 - The investment made from pre-funding levy (DF) would not be included in the RAB.
- 4.2.6 Further, since the tariffs were being determined based on 30% shared till, the RAB excluded the portion of assets attributed to the provision of non-aeronautical services. Despite this a cross-subsidy from non-aeronautical revenues was considered for the purpose of tariff determination as explained in chapter 2, para 2.3 of Order no. 34/2019-20.
- 4.2.7 The Authority had acknowledged that HIAL had correctly applied shared till methodology by computing RAB based on aeronautical assets and accordingly, depreciation too comprising only of aeronautical depreciation.
- 4.2.8 The Authority had decided the following treatment for specific assets as per the decision of Order No. 34/ 2019-20

Table 24: Treatment for specific assets considered by the Authority as per Order No. 34/2019-20

Allocation	The Authority's Treatment as per the Second Control Period Tariff Order
1. CGF, ICT, GPU	Aeronautical
2. New Office Building (NOB)	60% Non-Aero, 40% Common
3. Site Office Building	Common (78% Aero, 22% Non-Aero)
4. Township	75% Aero (based on critical/non critical staff occupancy)
5. Landscaping	Common
6. CSB	Aeronautical

- 4.2.9 Recognition of Cargo, ground handling and fuel services: The Authority vide its order no. 34/2019/20 has clearly justified its stance on the treatment of CGF services detailed in chapter 5, para 5.40-5.43 of Order No. 34/2019-20. In absence of any fresh argument from HIAL, the Authority stood by its decision no. 5-d to treat these three services as aeronautical in the case of HIAL. Evidently, cargo, ground handling, fuel farm, vehicle fueling services, cargo satellite building and fixed electrical ground power (FEGP) have been recognized as aeronautical assets and included in the calculation of RAB.
- 4.2.10 The Authority during the time of tariff determination of the Second Control Period had allocated the assets into 90.7% aeronautical and 9.3% as non-aeronautical which was determined from the gross block of FY16. The Authority had proposed to commission an independent study to assess the reasonableness of the asset allocation and to accordingly use the findings from the study at the time of determination of tariffs for aeronautical services in the Second Control Period as may be relevant.
- 4.2.11 Further in terms of allocation other assets the Authority had decided the treatment as follows:
- The Authority had proposed to include vehicle fueling service as aeronautical and noted that there will be no change in the RAB in the absence of any assets pertaining to the same.
 - The Authority proposed to continue treating CUTE, CUSS and BRS IT services as aeronautical even for the Second Control Period.
 - Further, The Authority had considered Advance Development Fund Grant of Rs. 107 Crores as a Grant from the Government of Andhra Pradesh in the calculations of RAB. Accordingly, under 30% shared till the Authority deducted this amount from aeronautical RAB only as opposed to a proportionate deduction from aeronautical and non-aeronautical RAB.
 - Additionally, the Authority had allowed the forex losses partially as part of one-time adjustment to operating expenses subject to a certain cap which is discussed in the operating expenses section.
- 4.2.12 The Authority had approved the expansion capex for 20 million passengers, recarpeting works for runway and general capex including 8 MW solar power plant and fuel farm. Based on these, the Authority had approved the additions to RAB as follows:

Authority's Examination of HIAL Submissions on Expansion Capex and RAB for the Second Control Period

(A) Expansion Capex

- 4.2.13 The Authority had appointed RITES Limited ("RITES") to examine the expansion project cost submitted by HIAL including the terminal expansion including ramp and forecourt and airside

improvements and to increase the terminal capacity in the Second Control Period from the current passenger capacity of 12 MPPA to 20 MPPA by FY21.

4.2.14 The Authority considered expansion project capex and re-carpeting/re-layering of runways and taxiways. Further, the IDC in the form of 'Interest during Construction' was computed on the entire project cost. The classification accepted and approved by the Authority for the Second Control Period pertaining to expansion capital expenditure is as follows:

- Additional 4 lane ramp – Aeronautical asset
- Forecourt expansion – Common asset
- Terminal expansion – East module 1 – Common asset
- Pier expansion – East module 1 – Common asset
- Terminal expansion – West modules – Common asset
- Pier expansion – East module 2 – Common asset
- Pier expansion – West module – Common asset
- Apron development – Aeronautical asset

4.2.15 The Overall capex approved by the Authority for the Second Control Period as part of Order No. 34/2019-20 is summarised in the table below:

Table 25: Capex considered by the Authority for the Second Control Period as per Order No. 34/2019-20

Sr. No.	Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
1	Expansion Capex (a)	0.00	0.00	302.12	1222.81	218.56	1743.49
2	Runway Re-carpeting & AGL upgrade (b)	0	53.03	25.28	25.28	0	103.59
3	Solar Power Plant (c)	44.00	0	0	0	0	44.00
4	Fuel Farm (d)	3.15	0	0	0	0	3.15
5	General Capex (e)	150.76	61.05	34.13	25.52	22.49	293.96
4	Total Capex* (f) = (sum of a to e)	197.91	114.08	361.53	1273.61	241.05	2188.19
5	Aeronautical Portion of (f)	183.88	108.40	350.72	1082.93	205.30	1931.23

*Inclusive of IDC of Rs. 129.72 crores

4.2.16 Additionally, the Authority had also looked into the matter of CISF Township where HIAL was directed by MoCA, to reverse all the expenses incurred towards procurement and maintenance of security systems/equipment, and on creation of fixed assets using funds from the PSF (SC) escrow account. Further, HIAL had moved the court against MoCA Order and the court had stayed the order for the time being. With the matter still pending in the Hyderabad High Court, the Authority had observed that HIAL did not include the capital and maintenance costs associated with the township for tariff determination for the Second Control Period. Also, the Authority had taken note of HIAL's submission to include the same in case of an adverse judgment from the High Court. The Authority had accepted HIAL's submission in this regard.

(B) Regulatory Asset Base (RAB)

Based on the above considerations, the Authority had approved the following calculations of RAB as part of the Second Control Period in Order No. 34/2019-20.

Table 26: Regulatory Asset Base considered by the Authority for the Second Control Period as per Order no. 34/2019-20

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Opening RAB (a)	1445.12	1469.52	1409.09	1610.17	2515.96	8449.86
Additions to RAB (b)	183.88	108.40	350.72	1082.93	205.30	1931.23
Deletions to RAB (c)	0.00	0.00	0.00	0.00	0.00	0.00
Depreciation (including ADFG adjustment) (d)	159.48	168.84	149.64	177.14	220.34	875.44
Closing RAB (e)=(a)+(b)-(c)-(d)	1469.52	1409.09	1610.17	2515.96	2500.92	9505.66
RAB for Tariff Determination {(a)+(e)}/2	1457.32	1439.30	1509.63	2063.06	2508.44	8977.75

Authority's Examination and proposals regarding issues pertaining to Regulatory Asset Base for the Second Control Period as part of the tariff determination exercise for the Current Control Period

- 4.2.17 The Authority has noted HIAL's submission regarding true up of capital expenditure for the Second Control Period as part of tariff determination of the Third Control Period.
- 4.2.18 The Authority further notes that HIAL has revised the expansion plan from 20 MPPA terminal capacity to 34 MPPA which also includes enhancement of airside infrastructure. In the backdrop of HIAL breaching the 20 MPPA mark in FY19 itself and the airport experiencing higher growth of passengers during the Second Control Period, the Authority appointed 'RITES' to undertake an evaluation of HIAL's submission and ascertain the reasonableness of the proposed capital expenditure and time schedule for completion. RITES has submitted its report in this regard and proposed a revised cost for the expansion works undertaken by HIAL. As per HIAL's proposal the expansion works began in FY18 and is expected to be completed by FY24. The further details related to the expansion works are provided in chapter. The Authority also noted that HIAL conducted AUCC on 07.09.2018 appraising the Authority and stakeholders of the overall expansion plan and the requirements. Further, HIAL also wrote to the Authority seeking in principle approval of its capital outlay plan for expeditious financial closure of the project. In response to that, the Authority apprised HIAL that there is no concept of in principle approval and the Authority would take a final view on the capital outlay plan as part of tariff determination exercise for the Third Control Period
- 4.2.19 The Authority had indicated in Order No. 34/2019-20, that it would commission an independent study concerning allocation of assets between aeronautical and non-aeronautical assets for the Second Control Period for HIAL. The Authority undertook the independent study and the recommendations of the study are discussed in the sections below.
- 4.2.20 The independent study reviewed various assets added during the Second Control Period and the allocation of assets into aeronautical and non-aeronautical and arrived at the justified additions to the RAB as per the general principles of tariff determination. This study is aimed at presenting the allocation of assets between aeronautical and non-aeronautical activities as submitted by

HIAL in its MYTP and the revised allocation on the basis of general principles and treatments as considered under the prevalent tariff orders.

Table 27: Summary of Asset Re-Segregation in the Second Control Period as per the independent study

Particular	Summary
Cargo satellite Building	HIAL has considered assets pertaining to Cargo Satellite Building as Non-Airport in nature. <i>The independent study determined that the costs related to cargo satellite building are aero in nature. Hence, the assets are re-segregated as 100% Aeronautical.</i> Thus, the re-segregation of the asset increases the RAB to an extent of Rs. 9.97 Crores In the Second Control Period.
Cargo Terminal Building	HIAL has considered assets pertaining to Cargo Terminal Building as Non-Aero in nature. <i>The independent study determined that the costs related to cargo terminal building are aero in nature. Hence, the assets are re-segregated as 100% Aeronautical.</i> Thus, the re-segregation of the asset increases the RAB to an extent of Rs. 0.05 Crores in the Second Control Period.
Fuel Farm	HIAL has considered assets pertaining to Fuel Farm as Non-Aero in nature. <i>The independent study determined that the costs related to Fuel Farm are aero in nature. Hence, the assets are re-segregated as 100% Aeronautical.</i> Thus, the re-segregation of the asset increases the RAB to an extent of Rs. 31.81 Crores in the Second Control Period.
Ground Power Unit	HIAL has considered assets pertaining to Ground Power Unit as Non-Aero in nature. <i>The independent study determined that the costs related to Ground Power Unit are aero in nature. Hence, the assets are re-segregated as 100% Aeronautical.</i> Thus, the re-segregation of the asset increases the RAB to an extent of Rs. 0.19 Crores in the Second Control Period.
New Office Building(NOB)	HIAL has considered assets pertaining to New Office Building as Common assets and to be segregated as per Aero & Non-Aero Asset Ratio. <i>The independent study determined that the costs related to New Office Building are to be apportioned as 40% Non-Aero and 60% Common. Hence, the assets are re-segregated accordingly.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 4.50 Crores in the Second Control Period.
Others	<i>The independent study revised allocation of some assets depending upon the location of the asset and the classification has been modified across all asset categories.</i> This exercise has led to an increase in the RAB to an extent of Rs. 0.49 Crores in the Second Control Period.
Passenger Terminal Building	HIAL has considered assets pertaining to Passenger Terminal Building as Aero in nature. <i>The independent study determined that the costs related to Passenger Terminal building are common in nature. Hence, the assets are re-segregated based on terminal area Ratio.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 0.07 Crores in the Second Control Period.

Particular	Summary
Passenger Terminal Building – IT	HIAL has considered assets pertaining to Passenger Terminal Building – IT as Aero in nature. <i>The independent study determined that the costs related to Passenger Terminal Building – IT are Non-Aero for when explicitly used for Non-Aeronautical services and Common when used for both Aeronautical and Non-Aeronautical in nature. Hence, the assets are re-segregated on terminal area Ratio.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 0.17 Crores in the Second Control Period.
Passenger Terminal Building – Lighting	HIAL has considered assets pertaining to Passenger Terminal Building – Lighting as Aero in nature. <i>The independent study determined that the costs related to Passenger Terminal Building – Lightning are common in nature. Hence, the assets are re-segregated based on terminal area Ratio.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 0.68 Crores in the Second Control Period.
Site Office Building	HIAL has considered assets pertaining to Site Office Building as common in nature. <i>The independent study determined that the costs related to Site Office Building are to be considered as common (87%-88%) and Non-Aero (13%-12%) depending upon the leased out area for the year. Hence, the assets are re-segregated accordingly.</i> Thus, the re-segregation of the asset has a net impact Rs. 0.00 Cr ores (small value) on the RAB for the Second Control Period.
Township	HIAL has considered assets pertaining to Township as Aero in nature. <i>The independent study determined that the costs related to township are 75%-80% Aero in nature for individual year based on critical/non-critical staff occupancy. Hence, the assets are re-segregated accordingly.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 0.07 Crores in the Second Control Period.
Ground Handling	HIAL has considered assets pertaining to Ground handling as Non-Aero in nature. <i>The independent study determined that the costs related to ground handling (building & IT) are aero in nature. Hence, the assets are re-segregated as 100% Aeronautical.</i> Thus, the re-segregation of the asset increases the RAB to an extent of Rs. 0.01 Crores in the Second Control Period.
IDAT	HIAL has considered assets pertaining to IDAT as Aero in nature. <i>The independent study determined that the costs related to IDAT are common in nature. Hence, the assets are re-segregated based on terminal area ratio.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 3.11 Crores in the Second Control Period.
IIDT	HIAL has considered assets pertaining to IIDT as Aero in nature. <i>The independent study determined that the costs related to IIDT are common in nature. Hence, the assets are re-segregated based on terminal area ratio.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 6.44 Crores in the Second Control Period.

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Particular	Summary
Landscaping	HIAL has considered assets pertaining to Landscaping as Aero in nature. <i>The independent study determined that the costs related to landscaping are common in nature. Hence, the assets are re-segregated based on revised Gross Asset Ratio.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 0.18 Cr. In the Second Control Period.
Assets on land side categorized under Aero	HIAL has considered Assets on land side categorized under Aero <i>The independent study determined that the costs related to land side are Non-aero in nature. Hence, the assets are re-segregated as 100% Non- Aeronautical.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 0.47 Crores in the Second Control Period.
Raxa (Security)	HIAL has segregated RAB based on its own calculation of Gross Asset Ratio <i>The independent study determined that the Revised Gross Asset Ratio is different from that of HIAL's and therefore on account of change in gross asset ratio RAB has increased by Rs. 0.11 Cr and Rs. 0.02 Cr in FY19 and FY20 respectively.</i> Thus, due to this revision there is an increase the RAB to an extent of Rs. 0.13 Crores in the Second Control Period.
Reservoir at Hotel	HIAL has considered assets pertaining to Reservoir at Hotel as Aero in nature. <i>The independent study determined that the costs related to Reservoir at Hotel are Non-Aero in nature. Hence, the assets are re-segregated as 100% Non-Aeronautical.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 27.47 Crores in the Second Control Period.
Hardware	HIAL has considered assets pertaining to hardware as Non-Airport in nature. <i>The independent study determined that the costs related to hardware are aero in nature. Hence, the assets are re-segregated as 100% Aeronautical.</i> Thus, the re-segregation of the asset increases the RAB to an extent of Rs. 0.04 Crores in the Second Control Period.
Buildings & Civil works, others	HIAL has considered assets pertaining to Buildings & Civil works, others as Aero in nature. <i>The independent study determined that the costs related to Buildings & Civil works, others are common in nature. Hence, the assets are re-segregated based on revised Gross Asset Ratio.</i> Thus, the re-segregation of the asset reduces the RAB to an extent of Rs. 0.08 Crores in the Second Control Period.
Reconciliation due to Adjustment in FAR	Adjustment of Rs. 0.02 Crores in the Second Control Period due to rounding off in fixed asset register
Total Adjustment to RAB	Rs. (0.53) Crores

4.2.21 The summary of the independent study concerning allocation of assets can be seen in Annexure 1. The independent study also has been attached as an appendix (Appendix 1) to this Consultation

Paper. Based on the above recommendations, the independent study has made the following adjustments as part of the asset addition towards aeronautical RAB for the Second Control Period.

Table 28: Summary of Fixed Asset Adjustment for the Second Control Period as per the independent study

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
1. Total Investment in Fixed Assets for the year (as per FAR of HIAL) = (a) + (b) + (c)	49.77	67.86	594.76	495.82	179.36	1387.57
a. Aeronautical Assets (100% Aero + Apportioned from Common assets)	36.56	60.11	559.85	491.04	170.66	1318.22
b. Non- Aeronautical Assets (100% Non - Aero + Apportioned from Common assets)	13.19	7.75	24.97	4.76	8.70	59.37
c. Non-Airport Assets	0.03	0.00	9.93	0.01	-	9.97
2. Investments in RAB for the year (as per classification by HIAL) = (a)	36.56	60.11	559.85	491.04	170.66	1318.22
3. Proposed adjustments to RAB due to change in segregation logic, for the reason below:						
(i) Cargo satellite Building	0.03	-	9.93	0.01	-	9.97
(ii) Cargo Terminal Building	0.05	-	-	-	-	0.05
(iii) Fuel Farm	10.54	3.00	17.99	0.28	-	31.81
(iv) Ground Power Unit	0.11	0.08	-	-	-	0.19
(v) New Office Building(NOBS)	-0.18	-2.41	-0.59	-1.61	0.29	-4.50
(vi) Others	-0.09	-0.32	-0.07	0.59	0.38	0.49
(vii) Passenger Terminal Building	-0.07	-	-	-	-	-0.07
(viii) Passenger Terminal Building – IT	-0.02	-	-	-	-0.15	-0.17
(ix) Passenger Terminal Building – Lighting	-0.34	-	-	-0.34	-	-0.68
(x) Site Office Building	-	-	-	-	0.00	0.00
(xi) Township	0.00	-0.05	-0.02	0.00	0.00	-0.07
(xii) Ground Handling	-	0.00		-	0.00	0.01
(xiii) IDAT	-	-	-3.11	-	-	-3.11
(xiv) IIDT	-	-	-6.00	-0.33	-0.11	-6.44
(xv) Landscaping	-	-	-0.18	0.00		-0.18

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Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
(xvi) Assets on land side categorized under Aero	-	-	-0.47	-	-	-0.47
(xvii) On account of change in gross asset ratio	-	-	0.11	0.02	-	0.13
(xviii) Reservoir at Hotel	-	-	-	-	-27.47	-27.47
(xix) Hardware	-	-	-	-	0.04	0.04
(xx) Buildings & Civil works, others	-	-	-	-	-0.08	-0.08
(xxi) Reconciliation due to Adjustment in FAR	-	0.02	-	-	-	0.02
4. Total proposed adjustments to RAB {sum of (i) to (xxi)}	10.03	0.33	17.59	-1.38	-27.10	-0.53
5. Adjusted Investment in RAB during the Second Control Period (2) +(4)	46.6	60.4	577.4	489.7	143.6	1317.69

- 4.2.22 As calculated from the table above, the aeronautical asset base for the Second Control Period has been reclassified from aeronautical assets to non-aeronautical assets to an extent of Rs. 0.53 Crores.
- 4.2.23 The Authority proposes to adopt the recommendations of the independent study for true up of regulatory asset base for the Second Control Period.
- 4.2.24 The independent study also highlighted that 12 parking stands had been de-commissioned by HIAL in 2018 and 2019, however, the same did not reflect in the fixed asset registers of HIAL. Hence based on normative approach, an amount of Rs. 14.91 Crores has been deleted from aeronautical assets before arriving at that gross fixed asset ratio. Based on the analysis undertaken by the independent study, the revised gross block ratio as per the revised allocation of assets is presented in the below given table:

Table 29: Summary of Gross Fixed Asset Ratio for the Second Control Period as per the independent study

S.no	Particulars	2017	2018	2019	2020	2021
1.	Gross fixed asset Ratio (On Adjusted Gross Block)					
	Aero	90.40%	90.33%	91.53%	92.50%	91.83%
	Non-Aero	9.60%	9.67%	8.47%	7.50%	8.17%
	Aero (Average)	91.32%				
	Non-Aero (Average)	8.68%				

The revised RAB for each year of the Second Control Period is re-computed as per the recommendations of this study and the true up of RAB has been arrived at as shown in the table below:

Table 30: Summary of Regulatory Asset Base for the Second Control Period as per the independent study

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Opening RAB (a)	1445.12	1381.83	1319.91	1746.97	1962.87	
Additions to RAB (b)	46.59	60.43	577.47	489.65	143.57	1317.69
Deletions to RAB (c)	1.05	10.31	9.42	97.22	51.99	169.98
Depreciation (including ADFG adjustment) (d)	108.82	112.04	140.99	176.53	184.38	722.77
Closing RAB (e)=(a)+(b)-(c)-(d)	1381.83	1319.91	1746.97	1962.87	1870.06	
Average RAB for Tariff Determination {(a)+(e)}/2	1413.48	1350.87	1533.44	1854.92	1916.46	

4.3 True up of Weighted Average Cost of Capital

HIAL's submission regarding the true up of Weighted Average Cost of Capital

4.3.1 HIAL has made the following submission with regard to the Weighted Average Cost of Capital:

- Cost of equity to be considered as 24.00% as per Jacobs study.
- With regard to the cost of debt, HIAL has considered the same based on actual interest expense incurred during the period FY17 to FY20 and estimated rate of interest for FY21.

4.3.2 Further, HIAL has raised USD 350 million through bond issuance in October 2017 towards refinancing of whole of Rupee Term Loan and External Commercial Borrowings at a coupon of 4.25% payable semi-annually with a tenor of 10 year bullet repayment falling due in Oct 2027. Out of USD 350 million issue proceeds, USD 272 million is used for refinancing of existing Rupee Loan and ECB and remaining USD 78 million is utilized towards part funding of 34 MPPA expansion. In order to cover the risk of coupon and principal, the company has availed cross currency swap and the total cost including all-in coupon and the hedge cost is 8.90%.

4.3.3 Additionally, HIAL has raised USD 300 Mn through offshore bonds in April 2019 at a coupon of 5.375% payable semi-annually with a tenor of 5 year bullet repayment falling due in April 2024. Total loan raised in rupee terms was Rs. 2067 Crores at an exchange rate of Rs 68.9/USD on the date of drawdown. In order to cover the risk of coupon and principal, the company has availed appropriate hedge instruments in the form of call spread and coupon only swap and the total cost including all in coupon cost and the hedge cost is 10.27%.

4.3.4 Further, HIAL has also considered an RTL for funding the runway re-carpeting and AGL works at interest of 10.5% in FY21.

4.3.5 Based on the above, the effective WACC has been considered as 14.13% which has been calculated as per the table below:

Table 31: WACC details submitted by HIAL for True of the Second Control Period as per MYTP

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Average Debt (a)	1524.15	1582.80	1755.69	2016.59	2315.53	9194.76
Interest Free Loan (b)	315.05	315.05	315.05	315.05	315.05	1575.25

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Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Shareholders' Contribution (c)	378.00	378.00	378.00	378.00	378.00	1890.00
Reserves & Surplus (d)	179.24	559.17	1101.59	1629.99	1219.38	4689.37
Debt + Equity (sum of a to d)	2396.44	2835.02	3550.33	4339.63	4227.96	17349.38
Cost of Debt	10.12%	9.28%	8.95%	9.55%	9.60%	
Cost of IFL	0.00%	0.00%	0.00%	0.00%	0.00%	
Cost of Equity	24.00%	24.00%	24.00%	24.00%	24.00%	
Individual Year Gearing	76.75%	66.94%	58.33%	53.73%	62.22%	
FRoR Calculation						
Weighted Average Gearing						62.08%
Weighted Average Cost of Debt						8.11%
Cost of Equity						24.00%
FRoR (WACC)						14.13%

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding True up of Weighted Average Cost of Capital for the Second Control Period as per Tariff Order for the Second Control Period

- 4.3.6 The Authority at the time of tariff determination for the Second Control Period had considered weighted average cost of debt towards determination of WACC for the Second Control Period at 7.90% which shall be trued up at the time of determination of aeronautical tariff for the Third Control Period as per the actual interest expenditure incurred by HIAL subject to a ceiling which is no more than 50 basis points from the projected cost of debt.
- 4.3.7 The Authority had considered Part of debt (USD 78 million which is equivalent to Rs. 507 Crores at an exchange rate of INR 65/USD) to be considered to be financed through the Bond issue at 8.96% p.a to be considered from FY 2017-18 onwards.
- 4.3.8 Balance part of debt was to be considered to be financed through RTL at the rates of RTL as incurred by HIAL during tariff determination of the Second Control Period, which was at 10.70% p.a.
- 4.3.9 Further, the Authority had considered the existing interest free loan from the State Government of Rs. 315.05 Crores to be a part of total debt at a cost of 0%.
- 4.3.10 The Authority had also considered cost of equity as 16.00% which is in line with the decision taken at the time of the tariff order for the First Control Period as the Authority felt that the relevant factors considered for arriving at 16.00% return on equity as reasonable and have not undergone any change in the ensuing period. Further, the Authority had also decided to commission an independent study to determine the cost of equity applicable in respect of RGI Airport, Hyderabad and depending on the recommendations proposed in the study, the Authority

may consider revising the cost of equity of HIAL in consultation with stakeholders at the time of tariff determination for the Third Control Period.

- 4.3.11 Based on the principles mentioned in the earlier paras, the Authority determined the Weighted Average Cost of Capital as 10.80% for determination of tariff for the Second Control Period.

Authority's Examination and Proposals regarding issues pertaining to Weighted Average Cost of Capital for the Second Control Period as part of the tariff determination process for the Current Control Period

- 4.3.12 The Authority has looked at HIAL's submission with regard to the Weighted Average Cost of Capital. The Authority at the time of the determination of WACC for the Second Control Period had indicated that WACC shall be trued up subject to actual interest expenditure with a pre-defined ceiling of 50 basis point from the projected cost of debt.
- 4.3.13 The Authority notes that the debt raised by HIAL through bond issuance of USD 350 million is at a coupon rate of 8.90% inclusive of hedge cost which is lower than the rate approved by the Authority during the Second Control Period tariff order which was 8.96%, hence the Authority accepts the submission of HIAL in this matter.
- 4.3.14 Further, the Authority also notes that HIAL has raised USD 300 million through offshore bond issuance in April, 2019 towards part funding of expansion project at a coupon of 5.375% payable semi-annually with a tenor of 5 year bullet repayment falling due in April 2024. Additionally, the Authority observed that HIAL has availed appropriate hedge instruments in the form of call spread and coupon only swap and the all-inclusive coupon is at 10.27%.
- 4.3.15 The Authority has noted that HIAL has projected an RTL at 10.50% for funding the re-carpeting of runway works by considering 70% debt funding and remaining 30% through internal accruals.
- 4.3.16 The Authority vide its order No. 34/2019-20, had approved that balance of funding of capex was to be funded through RTL at rates of RTL as incurred by HIAL during the Second Control Period tariff determination, which was at 10.70% p.a. Since, HIAL has availed an offshore bond as well as projected RTL for other capex at a rate lower than the rates approved by the Authority, the Authority accepts the submission of HIAL in this matter.
- 4.3.17 The Authority has also noticed that the actual cost of debt as submitted by HIAL for the Second Control Period as 8.11% which is more than the weighted average cost of debt considered by the Authority for the Second Control Period. However, the Authority vide its decision 6.e in Order No. 34/2019-20 had approved a ceiling of 50 basis points for true-up of cost of debt for the Second Control Period. Hence, the cost of debt has increased by 15 basis points from the cost of debt approved by the Authority in the Second Control Period tariff order, the Authority proposes to accept cost of debt of 8.11% as submitted by HIAL for the true up of the Second Control Period.
- 4.3.18 However, HIAL in its calculation of closing debt position for the Second Control Period have considered the capitalised debt instead of actual drawdown which may not provide a right position of debt for HIAL. Hence the Authority has re-calculated the debt schedule based on drawdown and repayment of individual loans as provided by HIAL, which has revised the weighted average cost of debt to 8.13%.
- 4.3.19 The Authority had also indicated that it may consider revising the cost of equity of HIAL in consultation with stakeholders at the time of tariff determination for the Third Control Period. Accordingly, the Authority has commissioned an independent study to determine the return on equity from the Third Control Period and as already decided during the tariff determination for the Second Control Period and as explained in para 3.2.21 – 3.2.23 and table no. 5 during the true up for the First Control Period in this consultation paper, the Authority proposes to consider 16.00% as the cost of Equity for HIAL for the true up of WACC for the Second Control Period.

- 4.3.20 The Authority has noted the additions/adjustments in Reserves and Surplus for the years FY17-FY21 and has proceeded to consider the same based on actuals.
- 4.3.21 Based on the above, WACC for the Second Control Period has been determined at 10.84% for the Second Control Period as part of the tariff determination for the Current Control Period against 10.80% in the Tariff Order for the Second Control Period as shown in the table below:

Table 32: WACC details proposed to be considered by the Authority for True of the Second Control Period

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Average Debt (a)	1524.15	1582.80	1640.58	2674.08	3778.31	11199.92
Interest Free Loan (b)	315.05	315.05	315.05	315.05	315.05	1575.25
Shareholders' Contribution (c)	378.00	378.00	378.00	378.00	378.00	1890.00
Reserves & Surplus (d)	179.24	559.17	1101.59	1629.99	1345.11	4815.10
Debt + Equity (sum of a to d)	2396.44	2835.02	3435.22	4997.12	5816.47	19480.28
Cost of Debt	10.12%	7.94%	8.95%	9.55%	9.43%	
Cost of IFL	0.0%	0.0%	0.0%	0.0%	0.0%	
Cost of Equity	16.00%	16.00%	16.00%	16.00%	16.00%	
Individual Year Gearing	76.75%	66.94%	56.93%	59.82%	70.38%	
FRoR Calculation						
Weighted Average Gearing						65.58%
Weighted Average Cost of Debt						8.13%
Cost of Equity						16.00%
FRoR (WACC)						10.84%

4.4 True up of the Depreciation

HIAL's submission regarding True up of Aeronautical Depreciation for the Second Control Period

- 4.4.1 HIAL had submitted the actual depreciation related to aeronautical assets till FY20 and projected depreciation as per the depreciation rates. Historical depreciation has been taken as per audited accounts, and the projections for depreciation have been taken in line with the provisions of the Companies Act 2013. Further, depreciation on the property, plant and equipment is calculated on a straight-line basis using the rates arrived at, based on useful lives estimated by the management, which coincides with the lives prescribed by AERA in case of airport assets and as prescribed under Schedule II the Companies Act, 2013 in case of other assets.

- 4.4.2 As per HIAL, the Authority has issued order no. 35/2017-18 on January 12, 2018 followed by amendment no. 1 to the order no. 35 /2017-18 on April 9, 2018 in the matter of Determination of Useful Life of Airport Assets, which was effective from April 1, 2018 (“AERA Order”) and Accordingly, HIAL has revised the estimated useful lives of its airport assets to be in-line with the AERA Order effective April 1, 2018.
- 4.4.3 Based on method described above and revised regulated assets base for the Second Control Period to be considered for true up HIAL has re-computed the depreciation for aeronautical assets. The following table summarises the depreciation as submitted by HIAL for the Second Control Period:

Table 33: Aeronautical depreciation submitted by HIAL for True up of the Second Control Period as per MYTP

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Depreciation as per Actuals till FY20 and Projections for FY2021	137.77	138.18	122.08	130.19	146.33	674.55

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding True up of Depreciation for the Second Control Period as per Tariff Order for the Second Control Period

- 4.4.4 The Authority had considered depreciation rates as mentioned in the table below for new assets in the Second Control Period:

Table 34: Rates of Depreciation for new assets considered by the Authority for the Second Control Period as per Order no. 34/2019-20

Asset Classification	Depreciation rates used for as per actual of FY2015-16
Buildings	3.34%
Electrical Installations	10.00%
Furniture and Fixtures	10.00%
Freehold Land	0.00%
Improvements to Leasehold Land	3.34%
IT Systems	33.34%
Office Equipment	20.00%
Other Roads	10.00%
Plant & Machinery	6.67%
Runways	3.34%
Software	16.67%
Vehicles	12.50%

- 4.4.5 The Authority had also made the following adjustments while calculating depreciation:
- Depreciation on capitalised forex losses adjustments included for depreciation for regulatory purposes had been removed to maintain the consistency
 - Depreciation corresponding to assets funded through an ADFG to be reduced from aeronautical depreciation rather than proportionately between aeronautical and non-aeronautical depreciation
- 4.4.6 The Authority had further specified that it was in the process of framing separate guidelines for the computation of depreciation for regulatory purposes. Such guidelines after notification would be applicable on HIAL.
- 4.4.7 The Authority had reduced depreciation corresponding to assets funded through an ADFG from aeronautical depreciation rather than proportionately between aeronautical and non-aeronautical depreciation based on the treatment of ADFG in RAB.
- 4.4.8 Further, the Authority had disallowed capitalization of forex losses and removed depreciation corresponding to the capitalization from the depreciation allowed for regulatory purposes.
- 4.4.9 The Authority based on reallocation of assets in the RAB, have re-computed the aeronautical depreciation applicable for HIAL for the Second Control Period.
- 4.4.10 The depreciation values as considered by the Authority at the time of tariff determination for the Second Control Period are as shown in the table below:

Table 35: Aeronautical Depreciation considered by the Authority for the Second Control Period as per Order no. 34/2019-20

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Aero Depreciation (for the Second Control Period as per Order No 34/2019-20)	159.48	168.84	149.64	177.14	220.34	875.44

Source: Order no 34/2019-20

Authority's Examination and Proposals regarding issues pertaining to Depreciation for the Second Control Period as part of the tariff determination process for the Current Control Period

- 4.4.11 The Authority has looked at HIAL's submission regarding Depreciation and has also validated the submission of HIAL with audited financial statements provided by HIAL.
- 4.4.12 The Authority further notes that HIAL as per the direction of the Authority, has considered the depreciation rates as per order no. 35/2017-18 issued on January 12, 2018 and later amended on 09th April from 1st April, 2018 onwards and made adjustment to the useful lives of assets such as furniture and fixtures, trolleys, boundary walls, and cost of resurfacing the runway and charged a revised depreciation of Rs. 21.11 Crores related to assets whose useful life were expired on 31st march, 2018, to opening reserves as of 1st April, 2018.
- 4.4.13 The Authority has re-calculated the y-o-y depreciation for the Second Control Period based on the revised additions to RAB as per the rates fixed by the Authority in its Order No 35/2017-18 which is also adopted by HIAL in its computation from FY19 onwards. Further, the Authority has adjusted the depreciation towards ADFG assets. The Authority has revised the depreciation

based on the new rates which was proposed by the Authority in its Order No. 34/2019-20 and is shown in the table below:

Table 36: Aeronautical Depreciation proposed to be considered by the Authority for True up of the Second Control Period

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Depreciation as proposed to be considered by the Authority (post adjustment towards ADFG assets) {refer table 30}	108.82	112.04	140.99	176.53	184.38	722.77

4.5 True up of the Operating Expenses

HIAL's submission regarding the true up of Operating Expenses for the Second Control Period

- 4.5.1 HIAL in its submission for true up of the Second Control Period has stated that the Authority vide its Order No 34/2019-20 has proposed to true up all the operating expenses (except true up of interest on working capital loan which is subject to a pre-defined cap) based on actual expenses incurred in the Second Control Period.
- 4.5.2 Further, HIAL had calculated the true up for the Second Control Period by considering the actual operating cost till FY20 and projected operating cost for FY2021. However, later HIAL had submitted the actual operating expenditure incurred in FY21 together with auditor certificate on 18.05.2021.
- 4.5.3 HIAL has stated that it has not availed any working capital loan till FY20. However, on account of cash flow challenges being faced due to COVID pandemic and as a consequent to that there is build up for receivables, and HIAL has availed working capitals limits from FY21 and beyond.
- 4.5.4 HIAL has made the following submissions with regards to operating expense for true up in the Second Control Period:
- Community development expenses as per actuals
 - Incidental Income from NOB, SO and Township has been netted off from Operating Expenses
 - Allowance of forex losses not recognised by the Authority in the Second Control Period tariff order
 - True up for allowance of refinancing cost (Break cost of IRS, Upfront Fee on refinanced loan charged to P&L and Bond Issue Cost in FY2018).
- 4.5.5 Further HIAL has segregated the O&M expenses based on its own methodology and understanding of tariff determination as submitted in annexure 9 of HIAL's MYTP submission for the Third Control Period.
- 4.5.6 The operating expenditure for the Second Control Period are as shown in the table below:

Table 37: Operating Expenses submitted by HIAL for True up of the Second Control Period as per MYTP

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Revised Opex for Second Control Period as per actuals till FY20 and inclusion of other allowance	244.53	509.01	300.06	374.55	390.14	1818.30
Aero Operating Expenses as per books (incl. CSR and netting off of incidental income)	209.26	248.94	300.06	374.55	390.14	1522.95

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Aero portion of one time Bond issue and Refinancing Expenses	-	104.84	-	-	-	104.84
Aero portion of Forex losses not recognised in Second Control Period Tariff Order	35.28	155.23	-	-	-	190.51

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority for Operating Expenses for the Second Control Period as per Tariff Order for the Second Control Period

4.5.7 The Authority had outlined the principles of RAB boundary in chapter 3, para 3.3 .in this consultation paper. The adjustments made by the Authority in the context of operating expenses have been summarized below.

- The Authority transferred cargo, ground-handling and fuel farm services from non-aeronautical to aeronautical services
- The Authority reallocated vehicle fueling activity and considered the same as aeronautical
- FEGP to be included as aeronautical activity as it is categorized under ground handling activity which in turn has been categorized as aeronautical service by the Authority
- The Authority allocated the complete expenses pertaining to Employee Township as aeronautical and reserved the right to alter the treatment based on the response received from HIAL may change the treatment to non-aeronautical
- The Authority treated landscaping expenses as a common cost divided in the ratio of aeronautical and non-aeronautical expense
- The Authority used the same ratio of terminal area to allocate the common expenditure on facility management
- The Authority had agreed with the principle of using the expense allocation ratio of latest completed financial year i.e. FY 2015-16 for the projections of the Second Control Period

4.5.8 The Authority had allowed for true up of all expenses incurred by HIAL during the Second Control Period while determining tariffs for the Third Control Period (except true up of interest on working capital loan which is subject to a pre-defined cap). The true up of operating expenses shall be subject to a justification and proof submitted by HIAL in its MYTP for the Third Control Period.

4.5.9 The Authority had considered the following growth rates and rationale for projections of various expenses under the O&M cost for the Second Control Period:

Table 38: Operating Expenses considered by the Authority for the Second Control Period as per Order No. 34/2019-20

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Aggregate for the Second Control Period	CAGR
Payroll Cost (a)	64.90	69.45	86.20	106.99	114.48	442.02	15.24%
Administrative Cost (general admin, Land Lease rent to GoT, Rates & taxes, CSR) (b)	51.21	50.65	52.66	54.75	56.93	266.2	2.68%

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Aggregate for the Second Control Period	CAGR
Security Cost (c)	8.71	9.05	9.4	9.77	10.15	47.08	3.90%
Finance related charges (bad debt written off, Bank charges, exchange fluctuations etc.) (d)	7.95	10.24	10.12	11.77	13.96	54.04	15.11%
Utility Cost (e)	20.83	17.83	18.87	29.7	38.28	125.51	16.43%
Repair and maintenance (f)	33.3	36.09	38.97	45.33	64.82	218.51	18.12%
Stores and Spares (g)	13.9	15.37	16.6	19.31	27.61	92.79	18.72%
Housekeeping (h)	10.66	11.08	12.97	18.65	23.17	76.53	21.41%
Other operating cost (Insurance, Technical services) (i)	39.07	41.19	46.68	53.36	57.32	237.62	10.06%
Concession fees (j)	44.97	44.72	34.91	39.21	44.16	207.97	-0.45%
Total Opex (k) = (sum of a to j)	295.50	305.68	327.38	388.83	450.88	1768.27	11.14%

Authority's Examination and Proposals regarding issues pertaining to Operating Expenses for the Second Control Period as part of the tariff determination process for the Current Control Period

- 4.5.10 The Authority has looked at HIAL's submission regarding true up for O&M expenses for the Second Control Period in its MYTP submission for the Third Control Period.
- 4.5.11 The Authority notes the that HIAL has submitted the O&M expenses for the Second Control Period based on actual expenditure from FY17-FY21 along with auditor's certificate which also gives methodology and understanding adopted by HIAL for allocation of various costs and their cost centres.
- 4.5.12 The Authority has commissioned an independent study to analyse efficient operation and maintenance costs submitted by the operator and determine the allocation and their reasonableness which is important for effective execution of tariff determination for aeronautical services.
- 4.5.13 The independent study has reviewed the various cost centers and developed a basis for segregation into aeronautical and non-aeronautical activities. The independent study had also determined the appropriate proportion of common cost centre that may be included in aeronautical activity, in order to determine the total aeronautical cost. The details of the various adjustments proposed are as shown in the table below:

¹ Actuals for FY21 received on 18th May, 2021

Table 39: Efficient O&M Cost adjustment for the Second Control Period as per the independent study

S.No.	Details of Expense	Observation	Amount of Adjustment
1	Employee Cost	Segregation by HIAL: Common Expense as per aero – non aero opex ratio Observation: Training and recruitment charges were considered a part of administrative cost in FY20 & FY21, which has been added to employee cost. The cost related to CGF departments have been treated as non-aeronautical by HIAL and the same has been re-classified as aeronautical. The Total Common Employee costs are segregated into aero & non-aero as per aeronautical asset ratio	Addition of Rs. 48.42 Crores
2	General Admin Cost	As per individual sub –heads given in the independent report (Appendix 2)	Rs. 17.69 Crores
3	Lease Rent to GoT	Segregation by HIAL: In the ratio of airport and non-airport land as per master plan Observation: Non-airport expenses is treated as non-aeronautical expenditure and common expense is segregated based on revised ratio i.e. aero – 72.69%; non-aero – 27.31%	Addition of Rs. 0.07 Crores
4	Rates & Taxes	Segregation by HIAL: Common expense – aeronautical asset ratio Observation: Based on revised department allocation and nature of individual expense and department, cost is apportioned as aeronautical, non-aeronautical and common. Common expenses have been classified based on revised aeronautical asset ratio	Addition of Rs. 1.67 Crores
5	Community Development	Segregation by HIAL: Aeronautical portion of CSR expenses as per aeronautical P&Ls Observation: On the examining the details submitted by HIAL, it is observed that the CSR expense is categorized under community development expenses which also include donations made by HIAL. Keeping in view the direction of TDSAT's judgment dated December 16, 2020 in the matter of Bangalore International Airport Limited vs Airports Economic Regulatory Authority, the CSR liability calculated based on aeronautical P&L can be allowed as pass through for the purpose of O&M expense. For the purpose of this study, the CSR eligibility is calculated as per the provision of Company's Act, 2013 and aeronautical P&L	Rs. 37.61 Crores
6	Security Cost	Segregation by HIAL: Common security expense is classified into aeronautical and non-aeronautical based on aero-non aero opex ratio. Observation: Common security charges have been segregated into aeronautical and non-aeronautical based on revised aeronautical asset ratio	Addition of Rs. 8.84 Crores
7	Bad Debts Written Off	Segregation by HIAL: Apportioned as per understanding Observation: On examination, bad debts written off for FY17 were wrongly classified under aeronautical whereas the expenses	Rs. 0.37 Crores

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S.No.	Details of Expense	Observation	Amount of Adjustment
		were non-aeronautical in nature. Hence this has been revised to non-aeronautical. There are no common expense under this head.	
8	Bank Charges	Segregation by HIAL: Common Expense – aeronautical asset ratio Observation: Since bank charges include finance related charges towards expansion and refinancing activities, TRA account operations, the amount submitted towards these expenses have been retained. The Bank charges are also inclusive of one time – refinancing cost of rs. 125.67 Crores which has been allowed based on previous direction of the Authority. However, the amount attributed to interest charges due to delayed payment have been deducted as these cannot be passed on to the passengers and common expenses have been classified based on revised aeronautical asset ratio	Addition of Rs. 5.81 Crores
9	Utility Cost	Segregation by HIAL: 100% aeronautical except CGF Observation: Since there has been significant cost savings based on actual utilities cost submitted by HIAL and approved by the Authority in Order no. 34/2019-20, the same cost has been considered for opex. The utilities cost in the audited financial are net charges after adjusting the utility recoveries from third party concessionaires. Hence, utility cost is considered as 100% aeronautical for allocation purpose. Additionally the utilities cost considered towards GPU have been reallocated as aeronautical cost as CGF is considered under aeronautical services	Addition of Rs. 2.34 Crores
10	Total Repair & Maintenance Cost	Segregation by HIAL: Common expense – aeronautical asset ratio Observation: There has been a marginal increase in R&M expense which is attributed to increased opex ratios. Hence the same cost is taken into consideration. Based on revised department allocation and nature of individual expense and department it is apportioned to, R&M expense is classified as aeronautical, non-aeronautical and common. R&M expense is function of assets, hence, the common expense under R&M have been segregated into aeronautical and non-aeronautical based on revised aeronautical asset ratio	Rs. 0.38 Crores
11	Stores & Repairs Cost	Segregation by HIAL: Common expense – aeronautical asset ratio Observation: Common expense under Stores and spares have been segregated into aeronautical and non-aeronautical based on revised aeronautical asset ratio	Addition of Rs. 1.15 Crores
12	Insurance cost	Segregation by HIAL: Common Expense – aeronautical asset ratio Observation: Common expense under insurance have been segregated into aeronautical and non-aeronautical based on revised aeronautical asset ratio	Addition of Rs. 0.74 Crores

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S.No.	Details of Expense	Observation	Amount of Adjustment
13	Manpower Outsourcing Cost (Technical Services Cost)	Segregation by HIAL: Common expense – Aero-Non-Aero Opex Ratio Observation: Manpower outsourcing cost is function of assets, hence, the common expense under manpower outsourcing cost have been segregated into aeronautical and non-aeronautical based on revised gross fixed asset ratio	Rs. 3.33 Crores
14	Housekeeping Cost	Segregation by HIAL: Terminal Building Cost – Terminal Ratio and Common expense – aeronautical opex ratio Observation: The housekeeping expenses directly attributable to terminal building are apportioned into aeronautical and non-aeronautical expenses in the terminal ratio (Aero – 84.6% and Non-aero – 15.4%). Housekeeping cost is function of assets, hence, the common expense under housekeeping have been segregated into aeronautical and non-aeronautical based on revised aeronautical asset ratio	Addition of Rs. 1.77 Crores
15	Fuel Farm Expenses	Segregation by HIAL: 100% Non-Aeronautical Observation: Based on the Authority's previous stand in order no. 34 2019/20 and on scrutinizing the Concession Agreement schedule 3 which clearly identified CGF as airport activities, the fuel farm operating expense has been treated as 100% aeronautical.	Addition of Rs. 69.96 Crores
16	Other Operating Cost	Segregation by HIAL: Collection Charges from IATA - 100% Aero, other collection charges such as PSF, UDF netted from Aero revenue and common other operating cost classified as per aeronautical opex ratio Observation: Collection charges for IATA as well as UDF and PSF have been considered as part of opex and not netted off from the aeronautical revenue and treated as 100% aeronautical. Further other operating expenses have been segregated based on revised department allocation and the common expense under other operating cost have been segregated into aeronautical and non-aeronautical based on revised aeronautical opex ratio	Addition of Rs. 21.52 Crores
17	Forex Losses	Segregation by HIAL: aeronautical asset ratio Observation: On examining the details submitted by HIAL, it is observed that HIAL has submitted forex loss based on actual calculation as part of the opex. However, as per the Order No. 34 2019/20, the Authority has not included the forex losses in the RAB calculation but allowed partially recovery by considering it as operating expenses (to the extent where the effective interest rate on external commercial borrowings = interest rate on rupee term loan). Hence the same treatment is considered for the purpose of this study. Further the overall forex losses have been treated as common and segregated into aeronautical and non-aeronautical based on revised gross aeronautical asset ratio	Rs. 182.71 Crores

S.No.	Details of Expense	Observation	Amount of Adjustment
18	Concession fees	Segregation by HIAL: Ratio of the revenues from these services respectively Observation: HIAL has considered the CGF revenue under non-aeronautical revenue stream and CPD and CSB revenue has been considered as non-airport. Pursuant to order no 34/2019-20 for the Second Control Period, it is suggested that the amount of concession fee corresponding to the aeronautical revenues should only be allowed for the purpose of tariff determination. Hence, post reallocation of CGF into aeronautical revenue and revenue from non-airport into aeronautical and non-aeronautical (CPD as non-aeronautical and CSB as aeronautical), the concession fees towards aeronautical revenue at 4% has been calculated.	Addition of Rs. 28.87 Crores
Total O&M Cost Adjustment		Rs. 50.93 Crores	

4.5.14 The summary of the independent study can be seen in Annexure 2. The independent study is attached as an appendix (Appendix 2) to this Consultation Paper. Based on the adjustment proposed in Table 39, the Efficient Operation and Maintenance costs has been re-calculated as follows:

Table 40: Summary of the O&M Costs for the Second Control Period

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Total operating expenses – As per MYTP submission of HIAL	349.43	679.93	456.19	550.07	399.35	2434.98
Total operating expenses – As per the study	313.43	495.51	458.88	550.20	396.15	2214.17
Aero operating expenses – As approved by AERA in the Second Control Period	295.50	305.68	327.38	388.83	450.88	1768.27
Aero operating expenses – As per MYTP submission of HIAL	275.39	546.39	342.89	418.49	321.09	1904.25
Aero operating expenses – As per the study	265.44	422.90	360.85	465.66	338.46	1853.32

4.5.15 The Authority proposes to consider the above as Efficient Operating Costs towards true up for the Second Control Period. Based on the suggested changes, the Authority has reworked the segregation ratio for these operating expenses which shall be considered towards segregation of the O&M Costs in the future i.e. the Third Control Period. The revised segregation ratios are as shown in the table below:

Table 41: Revised Segregation Logic for Efficient O&M proposed to be considered by the Authority for the Second Control Period

Operating Expenses	Cost allocation % as considered by HIAL	Cost allocation % proposed to be considered by the Authority in the Second Control as per the independent study commissioned by the Authority	Justification for the revised segregation
Employee Cost	79.48%	89.27%	Common Expenses segregated based on revised aeronautical asset ratio vs aeronautical asset opex ratio (HIAL)
General Admin Cost	78.91%	77.47%	Revised as per individual sub-heads treatment of expenses
Land Lease Rent to GoT	72.53%	72.69%	Non-airport expenses is treated as non-aeronautical expenditure
Rates & Taxes	85.67%	91.34%	Common expenses allocated as per revised aeronautical asset ratio
Community Development	79.68%	28.93%	CSR liability calculated based on aeronautical P&L allowed as pass through for the purpose of O&M expense
Security Cost	78.41%	88.58%	Common expense segregated based on revised aeronautical asset ratio vs aeronautical asset opex ratio (HIAL)
Bad Debts Written Off/Advances written off	36.09%	4.57%	Corrected the classification from Aero to Non-Aero
Bank Charges, Exchange Fluctuations	84.36%	90.81%	Common Expenses allocated as per revised aeronautical asset ratio
Utility Cost	97.18%	100.00%	Utility to be considered as 100% Aero
Total Repair & Maintenance	93.12%	92.96%	Common Expenses allocated as per revised aeronautical asset ratio
Stores & Spares	92.42%	95.76%	Common Expenses allocated as per revised aeronautical asset ratio

Operating Expenses	Cost allocation % as considered by HIAL	Cost allocation % proposed to be considered by the Authority in the Second Control as per the independent study commissioned by the Authority	Justification for the revised segregation
Insurance Cost	86.24%	91.47%	Common Expenses allocated as per revised aeronautical asset ratio

4.5.16 The Authority has looked at HIAL's submission pertaining to CSR expenses, income from NOB, SOB and township to be netted off from operating expenses, working capital expenses in FY21, forex losses not recognized in the Second Control Period tariff order, and allowance of refinancing cost (Break cost of IRS, Upfront Fee on refinanced loan charged to P&L and Bond Issue Cost in FY2018).

4.5.17 The independent study for efficient O&M expenses has addressed these issues raised by HIAL and based on the recommendations of this study, the Authority proposes the following:

- CSR expenses – The Authority proposes to true up the CSR expenses as per logic suggested in the independent study. Consequently, the CSR eligibility as per statutory requirement is compared with CSR eligibility calculated on aeronautical P&L and the lower of the two values is considered as true up
- Forex losses - The Authority proposes to true up the Forex losses as computed in the independent study
- Allowance of refinancing cost - The Authority proposes to true up the refinancing cost as computed in the independent study
- Incidental income from NOB, SOB and township to be netted off from operating expenses – The Authority proposes to not allow this treatment as per the independent study

4.5.18 Further, the Authority has noted HIAL's submission for true up of cost of working capital as part of bank charges in 2021 which is Rs. 3.49 Crores which is lower than Rs. 3.90 Crores as was projected by the Authority as per chapter 7, para 7.50 – 7.56 of Order No. 34/2019-20 and hence the Authority has proposed to accept this submission of HIAL.

4.5.19 The details of the aeronautical operating expenses proposed to be considered by the Authority for the Second Control Period is as shown in the table below:

Table 42: Efficient O&M proposed to be considered by the Authority for True up of the Second Control Period

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Employee Cost (a)	53.44	64.40	89.68	108.18	101.76	417.46
General Admin Cost (b)	42.44	60.52	65.29	84.23	54.76	307.23
Lease Rent to GoT (c)	2.38	2.48	2.61	2.73	2.88	13.09
Rates & Taxes (d)	5.13	5.35	5.38	6.13	5.01	27.00
Community Development (e)	0.00	0.00	3.17	7.02	7.66	17.85
Security Cost (f)	9.68	14.17	16.15	21.12	15.86	76.98

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Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Bad Debts Written Off (g)	0.00	0.00	0.00	0.00	0.20	0.20
Bank Charges (h)	3.55	116.23	0.72	30.23	7.48	158.21
Utility Cost (i)	17.49	16.33	19.35	18.71	11.10	82.97
Total Repair & Maintenance Cost (j)	34.36	39.72	43.35	52.01	49.81	219.24
Stores & Repairs Cost (k)	11.02	5.70	5.49	6.87	3.60	32.68
Insurance cost (l)	1.67	2.20	2.09	2.57	4.44	12.97
Technical Services Cost (m)	20.64	25.57	28.60	39.70	35.65	150.16
Housekeeping Cost (n)	9.72	10.28	11.77	15.06	10.34	57.17
Fuel Farm Expenses (o)	11.36	12.67	15.01	18.29	12.62	69.96
Other Operating Cost (p)	4.85	5.50	8.06	7.92	4.96	31.28
Forex Losses (q)	4.02	3.77	0.00	0.00	0.00	7.79
Concession fees* (discussed in next section) (r)	33.69	38.00	44.15	44.88	10.34	171.06
Total Operating Expenditure – Aero (s) = sum of a to r	265.44	422.90	360.85	465.66	338.46	1853.32
Adjustment for CSR calculation (t)	0.00	0.00	-0.38	-1.41	-2.00	-3.80
Adjustment in General Admin Expense, other operating expense and Concession fees (change in aero-non aero ratio and aeronautical revenue) (u)	0.01	0.02	-0.30	-1.25	-1.24	-2.76
Total Operating Expenditure (Aero) for true up of the Second Control Period = (s) + (t) + (u)	265.45	422.92	360.16	462.99	335.22	1846.75
Less: Concession Fee (v) (Refer Table 45)	33.70	38.03	44.17	45.01	10.52	171.44
Total Operating Expenditure (Aero) excluding Concession Fee * for true up of the Second Control Period = (w) = (s) - (v)	231.75	384.90	316.00	417.98	324.71	1675.33

4.5.1 The difference between the approved operating expenditure as per Second Control Period Tariff Order and the allowed operating expenditure for the True up of the Second Control Period in this Consultation Paper is mainly on account of increase in traffic levels and commissioning of interim terminal buildings. HIAL commissioned two interim terminals to ensure seamless passenger

experience, which led to increase in manpower, security and administrative costs. Also, a onetime financing cost of Rs. 126 Crores was also incurred by HIAL during the Second Control Period.

4.6 **True up of the Aeronautical Concession Fee**

HIAL's submission regarding the true up of Aeronautical Concession Fee

- 4.6.1 HIAL has submitted for true up on account of change in Aeronautical concession fee based on actuals till FY20 and projections for FY21 for the Second Control Period and also on account of difference in revenue groupings considered in this filing vis a vis what has been considered in the Second Control Period tariff order by the Authority.
- 4.6.2 The aero concession fee based on actual revenues and revised projections for FY2021 revenues, as per HIAL's submission, is as below:

Table 43: Aeronautical concession fee submitted by HIAL for True up the Second Control Period as per MYTP

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Revised concession fee as per the Second Control Period Aero P&L Filing assumptions	27.50	32.23	36.35	36.91	8.04	141.03

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding True up of Aeronautical Concession Fee for the Second Control Period as per Tariff Order for the Second Control Period

- 4.6.3 The Authority had approved the amount of fee corresponding to the aeronautical revenues be allowed for the purpose of tariff determination of the Second Control Period. The approved concession fee as per order no 34-2019/20 is summarized below:

Table 44: Aeronautical concession fee considered by the Authority for the Second Control Period as per Order no. 34/2019-20

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Aero Concession Fee (as per the Second Control Period Order No 34/2019-20)	33.94	32.41	21.14	23.70	26.68	137.87

Source: Order no 34/2019-20

- 4.6.4 The true up of the concession fee to be allowed as pass through would be derived from the aeronautical revenues based on actuals revenues for the Second Control Period of HIAL.

Authority's Examination and Proposals regarding issues pertaining to Aeronautical Concession Fee for the Second Control Period as part of the tariff determination process for the Current Control Period

- 4.6.5 Based on the treatment suggested in the study on efficient O&M for HIAL, the concession fees has been calculated as 4% of the revised aeronautical revenues as shown in the table below:

Table 45: Aeronautical Concession Fee proposed to be considered by the Authority as per revised allocation for True up of the Second Control Period

As per revised allocation – Concession Fee						
Particulars (In Rs. Crores)	2017	2018	2019	2020	2021*	Total

As per revised allocation – Concession Fee						
Aeronautical Revenue (Revenue from Regulated services + Revenue from CGF) (a)	842.59	950.69	1104.34	1125.32	262.98	4285.91
Concession Fee (b)	4%					
Aeronautical Concession Fee towards tariff determination (a*b)	33.70	38.03	44.17	45.01	10.52	171.44

*FY21 concession fees is provisional as the actual revenue for FY21 has not been finalized by HIAL. (FY21 revenue considered based on actuals for 9MFY21 and projections for Jan – Mar 2021)

4.7 True up of the Aeronautical Tax

HIAL's submission regarding the true up of Aeronautical Tax for the Second Control Period

- 4.7.1 HIAL, in its submission, has revised the aero tax based on the actual revenues and tax eligibility as per revised aero P&L post including 30% non-aeronautical PBT.
- 4.7.2 The aeronautical taxes as arrived at by HIAL for the years pertaining to the Second Control Period are as shown in the table below:

Table 46: Aeronautical Taxes submitted by HIAL for True up of the Second Control Period as per MYTP

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Revenue from Aeronautical Services (a)	707.33	804.12	906.93	905.38	201.07	3524.83
Revenue from other than Aeronautical Services (b)	79.13	68.39	103.40	119.12	36.42	406.47
Concession Fee (c)	28.29	32.16	36.28	36.22	8.04	140.99
Net Aeronautical Revenue (d) = (a) + (b) – (c)	758.17	840.35	974.05	988.28	229.45	3790.30
Total Expenses (e)	244.53	509.01	300.06	374.55	390.11	1818.27
EBITDA (f) = (d) – (e)	513.64	331.33	673.99	613.73	(160.66)	1972.04
Depreciation (g)	137.77	138.18	122.08	130.19	146.33	674.55
EBIT (h) = (f) – (g)	375.87	193.16	551.91	483.54	(306.99)	1297.49
Interest (i)	139.63	114.77	111.70	133.13	181.85	681.09
PBT (j) = (h) – (i)	236.24	78.38	440.21	350.41	(488.84)	616.40
Taxation (j) * tax rate	50.41	16.73	94.86	61.22	0.00	223.22

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding True up of Aeronautical Tax for Second the Control Period as per Tariff Order for the Second Control Period

- 4.7.3 The Authority, at the time of tariff determination for the Second Control Period had approved aeronautical tax based on allocation of HIAL's total tax between aeronautical and non-aeronautical as per the ratio of aeronautical and non-aeronautical taxes of the respective Profit & Loss statement. The Authority had re-calculated the aeronautical tax for the Second Control Period as shown in the table below:

Table 47: Aeronautical Taxes considered by Authority for the Second Control Period as per Order no. 34/2019-20

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Aeronautical PBT	351.68	326.71	54.95	17.98	-20.33	730.98
Aeronautical Tax (a)	73.71	68.48	11.52	3.77	0.00	157.48
Non- Aeronautical PBT	188.37	219.21	262.48	288.84	322.51	1281.40
Non- Aeronautical Tax (b)	67.78	79.03	90.39	94.35	108.36	439.92
PBT for HIAL as a standalone entity	478.03	476.15	237.48	214.66	196.32	1602.64
Tax for HIAL as a standalone entity (c)	100.20	99.80	49.78	44.99	41.15	335.91
Ratio for allocation of taxes to be incurred by HIAL as a standalone entity (d)={a/(a+b)}	52%	46%	11%	4%	0%	
Aeronautical portion of the total tax to be considered for tariff determination {d*c}	52.20	46.33	5.63	1.73	0.00	105.88

Source: Order No. 34/2019-20

- 4.7.4 The true up of aeronautical taxes would depend upon the true up of the different building blocks and the revised aero P&L statement for the Second Control Period. The aero tax would be apportioned in the ratio of aero tax/non-aero tax by preparing separate P&L statements for both the segments.

Authority's Examination and Proposals regarding issues pertaining to Aeronautical Tax for the Second Control Period as part of the tariff determination process for the Current Control Period

- 4.7.5 The Authority has noted HIAL's submission for true up of aeronautical taxes based on its methodology of estimating aeronautical tax from aeronautical profit & loss statement including 30% non-aeronautical PBT.

The detailed rationale for the abovementioned consideration is discussed and summarised in paras 10.2.2 – 10.2.5 of chapter 10 of this Consultation Paper.

- 4.7.6 The Authority further re-iterates its stance as per decision no. 8 order no 34/2019-20 and proposes to allocate HIAL's taxes (as per the aggregate profit & loss account) between aeronautical and non-aeronautical components based on the ratio of taxes as per both aeronautical and non-aeronautical profit & loss accounts.

The aeronautical tax is arrived at by considering the above is given in the table below:

Table 48: Aeronautical Taxes proposed to be considered by the Authority for the True up of the Second Control Period

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021*	Total
Aeronautical PBT	328.86	278.89	462.43	322.90	-441.20	951.87
Aeronautical Tax (a)	70.18	59.52	99.65	56.41	0.00	285.76
Non- Aeronautical PBT	266.87	274.62	339.61	354.33	183.12	1418.55
Non- Aeronautical Tax (b)	76.34	78.74	102.28	108.21	47.24	412.81
PBT for HIAL as a standalone entity	491.40	586.39	785.08	698.80	196.32	2757.99
Tax for HIAL as a standalone entity (c)	156.69	25.24	39.30	56.81	0.00	278.64
Ratio for allocation of taxes to be incurred by HIAL as a standalone entity (d)={a/ (a+b)}	47.90%	43.05%	49.35%	34.27%	0.00%	
Aeronautical portion of the total tax to be considered for tariff determination {d*c}	75.05	10.87	19.39	19.47	0.00	124.78

*FY21 is provisional as the actual revenue for FY21 has not been finalized by HIAL. (FY21 revenue considered based on actuals for 9MFY21 and projections for Jan – Mar 2021); Tax for HIAL as a standalone entity for FY21 shall be taken into account once audited financials are available

4.8 True up of the Non-Aeronautical Revenues

HIAL's submission regarding the true up of Non-Aeronautical Revenues for the Second Control Period

4.8.1 HIAL has highlighted the following points and adjustments to non-aeronautical revenues for true-up calculation:

- Change in revenue groupings in line with the allocation methodology and concept document as detailed in the previous sections summarised below:

Table 49: Summary of tariff filing treatment considered by HIAL

Particulars	The Authority's Treatment as per the Second Control Period Tariff Order	Treatment as per the Third Control Period filing
Allocation (Revenue)		
Treatment of Revenues from Commercial Property Development	Non Aeronautical	Non Airport (Outside Regulatory Purview)
Treatment of Revenues from CGF, ICT, GPU	Aeronautical	Non Aeronautical (in line with Concession Agreement)
Revenues from NOB and SO	Non Aeronautical	Common (netted off from common expenses)
Revenues from Township	75% Aero, 25% Non-Aero	100% Aero (netted off from aero expenses)

Particulars	The Authority's Treatment as per the Second Control Period Tariff Order	Treatment as per the Third Control Period filing
Rental Income from Fuel Stations	Aero Revenues (Akin to Fuel Farm)	Airside fuel station – Non Aero Land side fuel station – Non Airport
Dividend and Interest Income from Subsidiaries	From Cargo Subsidiary- Aero From Duty Free Subsidiary – Non Aero	Outside Regulatory purview
Other income from SFIS Scrips	96% Aero; 4% Non-Aero	Outside Regulatory purview
Cross Subsidisation	30% of NAR	30% of NAR PBT

- 30% Cross subsidisation of non-aero PBT in line with the interpretation of the shared till principle adopted by HIAL (discussed in detail in chapter No.8 of this consultation paper)

4.8.2 The Non-Aeronautical Revenue submitted by HIAL for the Second Control Period are as shown in the table below:

Table 50: Non-Aeronautical Revenues submitted by HIAL for True up of the Second Control Period as per MYTP

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Non Aero Revenues as per Actuals Till FY2020 & projections for FY2021	379.55	424.24	510.53	579.13	278.16	2171.61
Non Aero PBT as per Actuals Till FY2020 & projections for FY2021	263.78	227.97	344.66	397.07	121.41	1354.88

Decisions taken by the Authority regarding True up of Non-Aeronautical Revenues for Second Control Period as per Tariff Order for the Second Control Period

4.8.3 The Authority vide its order no. 34/2019-20 had approved the following with regard to the treatment of revenue from various services based on the arguments in part B of chapter 9:

- Consider revenues from cargo, ground handling and fuel farm; CUTE, CUSS and BRS (IT); and vehicle fueling services as aeronautical
- Consider incidental income from renting out of new office building and project site office building as non-aeronautical revenue.

Table 51: Non-Aeronautical Revenues considered by the Authority for the Second Control Period as per Order no. 34/2019-20

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Aggregate for the Second Control Period
IFK Revenues (a)	9.29	10.71	12.37	14.29	16.53	63.2
Duty Free Revenues (b)	22.28	25.96	30.68	36.06	42.20	157.18

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Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Aggregate for the Second Control Period
Forex services Revenue (c)	10.91	11.64	10.96	11.66	12.81	57.98
Plaza Lounge Revenue (d)	6.34	6.65	7.02	8.1	8.6	36.71
Retail Revenue (e)	30.35	33.07	36.16	39.64	43.57	182.80
Food & Beverage Revenue (f)	24.60	28.48	33.06	38.39	44.58	169.12
Revenue from Rentals (g)	44.95	50.20	55.86	61.96	68.53	281.50
Advertisement Revenue (h)	32.05	37.1	43.07	50.01	58.08	220.31
Radio Taxi (i)	9.48	10.98	12.74	14.8	17.18	65.18
Car Parking charges (j)	38.91	45.03	52.29	60.71	70.5	267.44
Public Admission Fee (k)	10.80	12.14	13.85	15.81	18.04	70.65
Miscellaneous Income (l)	9.11	9.11	9.11	9.11	9.11	45.55
Non-Revenue from NOB (m)	1.47	1.54	1.62	1.7	1.79	8.12
Revenue from project site (n)	1.54	1.62	1.70	1.79	1.88	8.53
Interest & Dividend from Duty Free Subsidiary (o)	2.64	2.64	2.64	2.64	2.64	13.19
Employee township (p)	0.22	0.23	0.24	0.26	0.27	1.22
Total Non-aeronautical Revenue (sum from a to p)	254.95	287.1	323.39	366.94	416.3	1648.67

Authority's Examination and Proposals regarding issues pertaining to Non-Aeronautical Revenues for the Second Control Period as part of the tariff determination process for the Current Control Period

- 4.8.4 The Authority has noted that HIAL has re-classified the revenue from CGF services as non-aeronautical and added in the computation of non-aeronautical revenues for the purpose of true up of the Second Control Period for HIAL.
- 4.8.5 The Authority further notes that HIAL has revised the treatment of revenues from NOB, SOB and Township as described in Table 6.
- 4.8.6 The Authority has also looked into the use of non-aeronautical PBT as 30% cross subsidy under the shared till model adopted HIAL.
- 4.8.7 The Authority in line with the treatment adopted para 3.2 and Table No. 5 and 6 of this consultation paper proposes the following treatment for the issues raised by HIAL:
- The Authority proposes to treat CGF services as aeronautical service and consequently the income from these services including cargo, ground handling and fuel farm including CSB and GPU as aeronautical revenue
 - The Authority proposes to treat income from ICT as aeronautical revenue

- Further, the Authority proposes to change the revenue from Employee Township into common based on critical staff ratio computed for the Second Control Period and not allow netting off against the aeronautical operating expenses.
- The Authority proposes to treat income from NOB and SOB as non-aeronautical and not allow netting off against operating expenses
- The Authority proposes to treat the dividend income from duty-free subsidiary as non-aeronautical and cargo subsidiary as aeronautical revenue
- The Authority proposes to treat revenue from commercial property development as non-aeronautical in line with recommendation of GoAP to treat real estate income as non-aeronautical revenue.
- Other income from SFIS Scrips not considered as the revenue is zero.

4.8.8 The Authority has noted the submission of HIAL for considering the non-aeronautical PBT as cross subsidy for computing the Aggregate revenue requirement (ARR). The Authority proposes to continue with its previous stance as discussed in Para 3.2.20 of this Consultation Paper.

Based on the above the non-aeronautical revenues as considered by the Authority for cross subsidisation in the Second Control Period is as shown in the table below;

Table 52: Non-Aeronautical Revenues proposed to be considered by the Authority for True up of the Second Control Period

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Aggregate for the Second Control Period
IFK Revenues (a)	8.71	9.81	12.12	12.43	5.28	48.35
Duty Free Revenues (b)	30.48	34.41	48.17	54.06	9.11	176.23
Forex services Revenue (c)	10.63	10.82	15.10	19.04	1.62	57.21
Plaza Lounge Revenue (d)	8.63	12.44	16.15	20.00	4.03	61.25
Retail Revenue (e)	30.30	30.75	42.03	48.06	19.07	170.21
Food & Beverage Revenue (f)	23.16	28.81	35.29	40.87	13.04	141.18
Revenue from Rentals (g)	51.32	53.04	48.44	58.06	47.31	258.17
Advertisement Revenue (h)	35.66	40.25	35.02	37.03	12.07	160.03
Radio Taxi (i)	7.12	6.63	6.93	7.17	2.48	30.33
Car Parking charges (j)	42.05	50.98	59.63	73.59	21.64	247.89
Public Admission Fee (k)	8.42	7.78	7.22	5.86	0.18	29.47
Miscellaneous Income (l)	10.12	10.21	10.70	12.05	6.16	49.24
Other Non-Operating Interest Income (m)	81.50	79.34	102.83	90.48	134.55	488.68
Income from CPD (n)	5.20	5.55	5.87	7.03	6.26	29.91

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Aggregate for the Second Control Period
Total Non-Aeronautical Revenue (o) = (sum of a to n)	353.29	380.82	445.50	485.73	282.79	1948.13
30% towards cross subsidy under shared till = (o) * 30%	105.99	114.25	133.65	145.72	84.84	584.44

4.9 True up of Aeronautical Revenues

HIAL's submission regarding true up of aeronautical revenues for the Second Control Period

4.9.1 HIAL has submitted aeronautical revenues as per actuals till FY2020. Aeronautical revenue for FY2021 had been projected on the following consideration:

- YPP of Rs. 209/pax as determined by the Authority as per the Second Control Period Order [Order No 34/2019-20 dated 27th March 2020] on ~ 9.68 Mn projected billable traffic for FY21
- Collection charges @0.65% of aeronautical revenue is considered for FY21 in line with actual collection charges paid in FY20.

4.9.2 Further, HIAL has trued up aeronautical revenue based on changes in allocation and revenue grouping as submitted by HIAL in the sections above.

Table 53: Aeronautical Revenues submitted by HIAL for True up of the Second Control Period as per MYTP

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Passenger Service Fee (Facilitation Component) (a)	55.19	63.63	72.76	72.28	202.39	
Landing Charges (b)	103.59	118.77	134.25	136.57		
Parking Charges (c)	2.15	2.21	2.69	3.34		
User Development Fee (d)	500.19	565.68	637.52	637.23		
Common Infrastructure Charges (e)	47.15	55.26	63.40	61.90		
ATC Tower Rentals (f)	2.58	2.86	2.85	0.00	0.00	
Collection charges (g)	-3.52	-4.29	-6.54	-5.94	-1.33	
Aero Revenues as per Actuals Till FY2020 & projections for FY2021 = (sum of a to g)	707.33	804.12	906.93	905.38	201.07	3524.83

Source: HIAL MYTP for the Third Control Period

Decisions taken by the Authority regarding True up of aeronautical revenues for Second Control Period as per Tariff Order for the Second Control Period

4.9.3 The Authority had considered the aeronautical revenue based on reclassification of CGF into aeronautical revenue as well as non-aeronautical revenue as elaborated in section 4.8 of this chapter as given below

The summary of the aeronautical revenues as considered in order no 34/2019-20 is given below:

Table 54: Aeronautical Revenues considered by the Authority for the Second Control Period as per order No. 34/2019-20

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021
Revenue from aeronautical services (including, CGF, CUTE, CUSS, BRS, rental income classified as aeronautical and ICT income)	848.62	730.02	150.97	153.98	157.92

Source: Order no 34/2019-20

Authority's examination of the matters as part of tariff determination for the Current Control Period

- 4.9.4 The Authority has noted the computation of aeronautical revenue submitted by HIAL for true up of the Second Control Period based on its own classification and methodology as described in previous sections.
- 4.9.5 The Authority noted that Airport Authority of India (AAI) has discontinued paying the rental for providing ANS/CNS services in FY20 and FY21 for the Second Control Period. Although AAI has discontinued paying the rentals, the Authority proposes to consider these rental for FY20 and FY21 towards aeronautical revenues as a commercial activity is being undertaken by the parties.
- 4.9.6 The Authority has clarified its stance on treatment of various revenue streams in para 3.2 and Table no.5 and 6 of this consultation paper in line with AERA Act, AERA guidelines, TDSAT orders, and the Authority's orders released from time to time. The Authority proposes to continue its treatment and classification of revenue streams and based on this has re-computed the aeronautical revenue for true up of the Second Control Period as shown in the table below:

Table 55: Aeronautical Revenues proposed to be considered by the Authority for True up of the Second Control Period

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Passenger Service Fee (Facilitation Component) (a)	55.19	63.63	72.76	72.28	0.20	264.06
Landing Charges (b)	103.59	118.77	134.25	136.57	63.28	556.46
Parking Charges (c)	2.15	2.21	2.69	3.34	7.83	18.22
User Development Fee (d)	500.19	565.68	637.52	637.23	80.47	2421.09
Common Infrastructure Charges (e)	47.15	55.26	63.40	61.90	0.27	227.98
ATC Tower Rentals (f)	2.58	2.86	2.85	2.85	2.85	13.99
Collection charges (g)	-	-	-	-	-	0.00
Revenue from CGF, CUTE, CUSS, BRS, rental income classified as aeronautical and ICT income) (h)	131.75	142.28	190.87	211.15	108.08	784.13
Total revenue from regulated services (i) = (sum of a to h)	842.60	950.69	1104.34	1125.32	262.98	4285.93

4.10 True up of Traffic for the Second Control Period

HIAL's Submissions regarding Traffic Projections for the Second Control Period

4.10.1 As part of its MYTP submission, HIAL has submitted the traffic at actuals for the FY17-FY20 and projections for FY21 in the Second Control Period as depicted in the table given below:

Table 56: Traffic submitted by HIAL for Tariff Determination of the Second Control Period as per MYTP

Particulars	2017	2018	2019	2020	2021	Aggregate for the Second Control Period
Passenger Traffic (Mn)						
Domestic	11.94	14.69	17.44	17.73	8.41	58.27
International	3.30	3.61	3.92	3.85	1.39	16.07
Total	15.24	18.30	21.36	21.58	9.80	86.28
Air Traffic Movement (in Nos.)						
Domestic	109028	125360	154213	157999	84601	631201
International	22240	24766	25881	25752	11074	109713
Total	131268	150126	180094	183751	95675	740914
Air Cargo (in MT)						
Total	124085	137819	148005	146148	86227	642284

Decisions taken by the Authority regarding Traffic Projections as per Tariff Order of the Second Control Period

- 4.10.2 The Authority at the time of tariff determination for the Second Control Period had projected the traffic based on the individual CAGR of 12.27% (Domestic), 9.84% (International Passenger Domestic), 5.88% (Domestic ATMs) and 8.20% (International ATMs) for a 9 year period (2009 to 2018).
- 4.10.3 The traffic projections considered by the Authority at the time of tariff determination for the Second Control Period are as shown in the table below:

Table 57: Traffic considered by the Authority for the Second Control Period as per Order No. 34/2019-20

Particulars	2017	2018	2019	2020	2021	Aggregate for the Second Control Period
Passenger Traffic (Mn)						
Domestic	11.73	13.18	14.79	16.61	18.65	63.23
International	3.37	3.65	4.00	4.40	4.83	20.25
Total	15.10	16.83	18.79	21.01	23.48	95.21
Air Traffic Movement (Nos)						
Domestic	108452	116645	123499	130756	138440	617792
International	22261	23340	25253	27323	29562	127739
Total	130713	139985	148752	158079	168002	745531
Air Cargo (in MT) (International + Domestic)						
Total	121882	132552	145514	159743	175363	735054

4.10.4 The Authority had also decided to true up the above projected traffic based on actuals at the time of tariff determination for the Third Control Period.

Authority's Examination regarding Traffic achieved for the Second Control Period

4.10.5 The Authority compared traffic submitted by HIAL based on actuals till FY2020 and projections for FY2021 for true up of the Second Control Period and the traffic approved by the Authority in the tariff Order 34/2019-20. The summary of the comparison is given below:

Table 58: Comparison of traffic submitted by HIAL for the Second Control Period true up and that approved by the Authority in Order No. 34/2019-20 for the Second Control Period

Particulars	2017	2018	2019	2020	2021	Total
Domestic passengers (in Millions)						
As per HIAL (a)	11.94	14.69	17.44	17.73	8.41	70.21
As per Order No. 34/2019-20 (b)	11.73	13.18	14.79	16.61	18.65	74.96
Difference {(a) - (b)}	0.20	1.51	2.65	1.12	-10.24	-4.76
International passengers (in Millions)						
As per HIAL (d)	3.30	3.61	3.92	3.85	1.39	16.07

Particulars	2017	2018	2019	2020	2021	Total
As per Order No. 34/2019-20 (c)	3.37	3.65	4.00	4.40	4.83	20.25
Difference {(c) - (d)}	-0.07	-0.03	-0.09	-0.55	-3.44	-4.18
Domestic ATMs (in Nos.)						
As per HIAL (e)	109028	125360	154213	157999	84601	631201
As per Order No. 34/2019-20 (f)	108452	116645	123499	130756	138440	617793
Difference {(e) - (f)}	576	8715.2	30714	27243	-53839	13408
International ATMs (in Nos.)						
As per HIAL (g)	22240	24766	25881	25752	11074	109713
As per Order No. 34/2019-20 (h)	22261	23340	25253	27323	29562	127738
Difference {(g) - (h)}	-21	1426	628	-1571	-18488	-18025
International + Domestic Cargo (in MT)						
As per HIAL (i)	124085	137819	148005	146148	86227	642284
As per Order No. 34/2019-20 (j)	121882	132552	145514	159743	175363	735054
Difference {(i) - (j)}	2203	5267	2491	-13595	-89136	-92769

- 4.10.6 The Authority noted that the domestic passengers and domestic air traffic movement traffic achieved by HIAL during the period FY17-20 were higher than that approved by the Authority in the Order no. 34/2019-20. Though, for FY21, the traffic is lower than that approved by the Authority due to the impact of COVID-19 pandemic.
- 4.10.7 The Authority observed that the international passengers for the entire Second Control Period and international air traffic movement traffic for FY17, FY20 & FY21 achieved by HIAL were lower than that approved by the Authority in the Order no. 34/2019-20.
- 4.10.8 The Authority notes that the total actual cargo movement achieved by HIAL during the period FY20 & FY21 is lower than that approved by the Authority in the Order no. 34/2019-20.
- 4.10.9 The Authority has compared the actual traffic submitted by HIAL for the Second Control Period with actual traffic as given by Airport Authority of India (AAI) on its website. The comparison of the same is as given in the table below:

Table 59: Comparison of traffic submitted by HIAL and as per AAI website

Particulars	2017	2018	2019	2020	2021	Total
Domestic passengers (in Millions)						
As per HIAL (a)	11.94	14.69	17.44	17.73	8.41	70.21
As per AAI website (b)	11.73	14.47	17.42	17.73	7.47	68.83

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Particulars	2017	2018	2019	2020	2021	Total
Difference {(a) - (b)}	0.20	0.22	0.03	0.00	0.93	1.38
Difference (%) {1-b/a}*100	1.71%	1.47%	0.15%	0.01%	11.09%	1.96%
International passengers (in Millions)						
As per HIAL (d)	3.30	3.61	3.92	3.85	1.39	16.07
As per AAI website (c)	3.37	3.69	3.99	3.92	0.58	15.54
Difference {(c) - (d)}	-0.07	-0.07	-0.07	-0.07	0.81	0.54
Difference (%) {1-d/c}*100	-2.03%	-2.04%	-1.73%	-1.81%	58.60%	3.34%
Domestic ATMs (in Nos)						
As per HIAL (e)	109028	125360	154213	157999	84601	631201
As per AAI website (f)	108452	124786	153721	157691	78348	622998
Difference {(e) - (f)}	576	574	492	308	6253	8203
Difference (%) {1-f/e}*100	0.53%	0.46%	0.32%	0.19%	7.39%	1.30%
International ATMs (in Nos.)						
As per HIAL (g)	22240	24766	25881	25752	11074	109713
As per AAI website (h)	22261	24795	25885	25759	7667	106367
Difference {(g) - (h)}	-21	-29	-4	-7	3407	3346
Difference (%) {1-h/g}*100	-0.09%	-0.12%	-0.02%	-0.03%	30.77%	3.05%
International + Domestic Cargo (in MT)						
As per HIAL (i)	124085	137819	148005	146148	86227	642284
As per AAI website (j)	121882	134141	144126	143884	110789	654822
Difference {(i) - (j)}	2203	3678	3879	2264	-24562	-12538
Difference (%) {1-j/i}*100	1.78%	2.67%	2.62%	1.55%	-28.48%	-1.95%

4.10.10 The Authority noted that data collected from AAI pertaining to traffic at the Hyderabad Airport does not exactly match with the submission made by HIAL. However, the Authority further noted that the difference is not significant and therefore proposes to consider HIAL's submission pertaining to traffic for FY17-FY20. Further, given that HIAL had provided the projections for traffic in FY21, the Authority has considered the actual traffic numbers for FY21 as per AAI.

The traffic considered by the Authority for tariff determination for the Second Control Period is as shown in the table below:

Table 60: Traffic considered by the Authority for Tariff Determination of the Second Control Period

Particulars	2017	2018	2019	2020	2021 ²
Passenger Traffic (in Mn)					
Domestic	11.94	14.69	17.44	17.73	7.47
International	3.30	3.61	3.92	3.85	0.58
Total	15.24	18.30	21.36	21.58	8.05
Air Traffic Movement (in Nos.)					
Domestic	22240	24766	25881	25752	7667
International	109028	125360	154213	157999	78348
Total	131268	150126	180094	183751	86015
Air Cargo (in MT)					
Total	124085	137819	148005	146148	110789

4.11 Revised True up for the Second Control Period

HIAL's submission regarding True up for the Second Control Period

4.11.1 The revised true up as submitted by HIAL for the Second Control Period is as shown in the table below:

Table 61: Summary of True up submitted by HIAL for the Second Control Period as per MYTP

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Average Regulatory Asset Base (a)	1271.99	1180.89	1359.27	1727.02	2063.75	7602.92
WACC (b)	14.1%	14.1%	14.1%	14.1%	14.1%	
Return on RAB (c) = (a * b)	179.79	166.91	192.13	244.11	291.70	1074.64
Expense (d)	244.53	509.01	300.06	374.55	390.11	1818.27
Concession fees (e)	27.50	32.23	36.35	36.91	8.04	141.03
Depreciation (f)	137.77	138.18	122.08	130.19	146.33	674.55
Tax (g)	50.41	16.73	94.86	61.22	0.00	223.22
Cross-subsidy (30% of non-aeronautical PBT) (h)	79.13	68.39	103.40	119.12	36.42	406.47
Net Target Revenue (i) = (sum of c to g) - (h)	560.87	794.67	642.09	727.85	799.76	3525.24

² Actual for FY2021 as per AAI website

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Actual Aeronautical Revenue (j)	707.33	804.12	906.93	905.38	201.07	3524.83
Difference (k) = (i) – (j)	(146.46)	(9.45)	(264.84)	(177.53)	598.69	0.41
Fair Rate of Return	14.13%	14.13%	14.13%	14.13%	14.13%	
Discounting Factor (l)	1.81	1.59	1.39	1.22	1.07	
True up of the Second Control Period true (as on 01.04.2021) (m) = (l) * (k)	(265.66)	(15.02)	(368.78)	(216.43)	639.72	(226.17)
True up of PCPE and the First Control Period (as on 01.04.2021) (n)						3261.44
Total True up to be carried forward to the Third Control Period (o) = (n) + (m)						3035.28

Authority's estimate of Aggregate Revenue Requirement as per Tariff Order of the Second Control Period

4.11.2 The Authority had estimated the Aggregate Revenue Requirement for the Second Control Period in the Tariff Order of the Second Control Period as can be seen in the table below:

Table 62: Aggregate Revenue Requirement considered by the Authority for the Second Control Period as per Order No. 34/2019-20

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Average Regulatory Asset Base (a)	1271.99	1180.89	1359.27	1727.02	2063.75	7602.92
WACC (b)	14.1%	14.1%	14.1%	14.1%	14.1%	
Return on RAB (c) = (a * b)	157.42	155.47	163.07	222.85	270.96	969.76
Expense (d)	229.49	238.29	266.88	319.62	373.77	1428.04
Concession fees (e)	33.94	32.41	21.14	23.70	26.68	137.87
Depreciation (f)	159.48	168.84	149.64	177.14	220.34	875.43
Tax (g)	52.20	46.33	5.63	1.73	0.00	105.88
Cross-subsidy (30% of non-aeronautical PBT) (h)	76.48	86.13	97.02	110.08	124.89	494.60
Net Target Revenue (i) = (sum of c to g) - (h)	556.04	555.21	509.33	634.95	766.86	3022.38
True up of PCPE and First Control Period	501.37					
Present Value of Aggregate Revenue Eligibility (j)	1133.79	569.91	471.85	530.88	578.66	3285.08
Actual/Projected Revenue (k)	848.62	810.20	528.53	592.38	667.00	3446.74

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Discounting Factor (l)	0.88	0.97	1.08	1.20	1.33	
Present Value of Actual/Projected Revenue (m) = (k)/(l)	965.19	831.66	489.64	495.29	503.31	3285.08
Deficit (n) = (k) - (m)						0.00
Yield per Passenger, as on 01-01-2018	186.04	193.30	200.84	208.67	216.81	

Authority's Examination and Proposals regarding Aggregate Revenue Requirement for the Second Control Period as part of the tariff determination exercise for the Current Control Period

4.11.3 The Authority also noted the combined true up awarded for the Pre Control Period and the First Control Period as part of the decision no. 3 of the Second Control Period Tariff Order (Order no 34/2019-20), wherein it had considered the amount given in Table 13 of the said order. The amount stood at Rs. 198.65 Crores for Pre-Control Period and Rs. 283.20 Crores for the First Control Period resulting in combined amount of Rs. 481.85 Crores as on 01.01.2018. However, the Authority noted that an amount of Rs. 501.37 Crores was considered while computing the ARR of Second Control Period (Table 11 and Table 39 of Order no 34/2019-20) in place of Rs. 481.85 Crores (Decision no. 3 and Table 13 of Order no 34/2019-20). Hence, the Authority proposes to consider this amount of Rs. 481.85 Crores (Decision no. 3 and Table 13 of Order no 34/2019-20) towards computation of the overall true up of the Second Control Period as part of the tariff determination exercise for the Third Control Period.

4.11.4 The Authority based on actuals considered for the true up of the Second Control Period as submitted by HIAL and its on methodology has determined the proposed true up for HIAL for the Second Control Period as given in the table below:

Table 63: Aggregate Revenue Requirement proposed to be considered by the Authority for the True up of the Second Control Period

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Average Regulatory Asset Base (a) (Refer Table 30)	1413.48	1350.87	1533.44	1854.92	1916.46	
FROR/WACC (b) (Refer Table 32)	10.84%	10.84%	10.84%	10.84%	10.84%	
Return on RAB (c) = (a * b)	153.20	146.41	166.20	201.04	207.71	874.57
Operating Expense (Aero) (d) (Refer Table 42)	231.75	384.90	316.00	417.98	324.71	1675.33
Aeronautical Concession fees (e) (Refer Table 45)	33.70	38.03	44.17	45.01	10.52	171.44
Depreciation on RAB (f) (Refer Table 36)	108.82	112.04	140.99	176.53	184.38	722.77
Aeronautical Tax (g) (Refer Table 48)	75.05	10.87	19.39	19.47	0.00	124.78
Cross-subsidy (30% of non-aeronautical revenue) (h) (refer Table 52)	105.99	114.25	133.65	145.72	84.84	584.44

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Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Net Aggregate Revenue Requirement (i) = (sum of c to g) - (h)	496.54	578.00	553.10	714.31	642.49	2984.44
Actual Aero Revenues (j) (refer Table 45)	842.59	950.69	1104.34	1125.32	262.98	4285.91
Difference (k) = (i) - (j)	-346.04	-372.69	-551.24	-411.00	379.51	-1301.47
Fair Rate of Return/WACC (Refer Table 32)	10.84%	10.84%	10.84%	10.84%	10.84%	
Discounting Factor (l)	1.67	1.51	1.36	1.23	1.11	
True up of the Second Control Period (as on 31.03.2022) (m) = (k) * (l)	(578.87)	(562.48)	(750.60)	(504.92)	420.64	(1,976.24)
True up of PCPE (as on 31.03.2022) (n) (refer Table 3)						731.05
True up the First Control Period (o) (as on 31.03.2022) (refer Table 14)						0.54
Under recovery of Pre Control Period and First Control Period as on 01.01.2018 (refer Table 13 of Second Control Period Tariff Order) (p)						481.85
Discounting Factor (q)						1.55
Under recovery of Pre Control Period and First Control Period as on 31.03.2022 (r) = (p)*(q)						746.18
Total True up to be carried forward to the Third Control Period (s) = (m)+ (n) + (o) + (r)						(498.47)

4.11.5 The summary of major adjustments undertaken by the Authority as part of its true up of various building blocks for the Second Control Period for tariff determination of the Third Control Period for HIAL is given below:

- RAB has been adjusted as per the outcome of the independent study on allocation of assets between aeronautical and non-aeronautical assets and actual additions to aeronautical asset base.
- Depreciation has been adjusted to disallow assets from ADFG as well as revised rates as given in Order No. 35/2017-18.
- WACC has been recomputed based on revised calculation of weighted average cost of debt
- Operating expenditure has been adjusted based on outcome of the independent study on efficient O&M costs for HIAL and adjustment to CSR expenses.
- Aeronautical tax has been computed based on allocation of HIAL's taxes (as per the aggregate profit & loss account) between aeronautical and non-aeronautical components based on the ratio of taxes as per both aeronautical and non-aeronautical profit & loss accounts.

- Non-Aeronautical revenues has been re-computed based on principles and methodology adopted for classification of various revenue streams. Further, the cross subsidy is considered on 30% of aggregate non-aeronautical revenue for each year.
- True up for PCPE and the First Control Period has been calculated as Rs. 731.05 Crores and Rs. 0.54 Crores respectively as on 31.03.2022.

4.11.6 The total amount Rs. 498.47 Crores as on 31.03.2022 pertaining to the combined true up of the PCPE Period, First Control Period and Second Control Period represents the over recovery by HIAL . The said amount is proposed to be recovered from HIAL as part of the tariff determination exercise for the Third Control Period.

4.12 Authority's Proposals regarding True up for the Second Control Period

Based on the material before it and based on its analysis, the Authority proposes the following regarding true up for the Second Control Period.

- 4.12.1 The Authority proposes to true up Aeronautical RAB considering the actual additions and as per the asset segregation ratios as suggested by the independent study. The Authority proposes to reclassify an amount of Rs. 0.53 Crores from aeronautical assets to non-aeronautical assets in the Second Control Period, as part of additions to RAB for the Second Control Period based on the independent study (Table no. 27).
- 4.12.2 The revised allocation ratio for FY 2021 has been considered as Aeronautical 91.32% : Non-Aeronautical 8.68%. (Table no. 29).
- 4.12.3 The Authority proposes to revise WACC based on revised debt schedule based on the actual debt raised by HIAL and the projected debt requirement for FY2021. The proposed recalculated WACC for the Second Control Period is 10.84% (Table no. 32).
- 4.12.4 The Authority proposes to consider CSR expenses as pass through and proposes to true up these expenses computed as per provisions of Companies Act, 2013, on the aeronautical P&L of HIAL (para 4.5.17).
- 4.12.5 The Authority proposes to consider Efficient O&M Costs based on the adjustment as suggested by the independent study tasked with studying the O&M Cost segregation as submitted by HIAL (Table no.42).
- 4.12.6 The Authority proposes to consider the concession fees paid by HIAL as per the recommendation of independent study and consider amount equal to 4% of gross aeronautical revenue for the Second Control Period (Table no.45).
- 4.12.7 The Authority proposes to true up Rs. 498.47 Crores as on 31.03.2022 (adjusted amount for PCPE, First Control Period and Second Control Period) which is proposed to be recovered from the airport operator in the Third Control Period (Table no. 63).

5. **TRAFFIC PROJECTIONS FOR THE THIRD CONTROL PERIOD**

5.1 **HIAL's Submissions regarding Traffic Projections for the Third Control Period**

- 5.1.1 In the backdrop of COVID 19 pandemic, HIAL in its MYTP submission highlighted that the consumer confidence in air travel remains the key and it may take some time to restore the original traffic levels, even after governments begins the process of opening borders and relaxing travel restrictions.
- 5.1.2 HIAL also apprised about the studies conducted by International Air Transport Association ("IATA") and ICF International Ltd ("ICF"). In its submission, HIAL highlighted that ICF is of the view that domestic and intra-regional traffic would take 4 years and the international traffic would take 5.4 years respectively to recover to pre-covid 2019 traffic. Although each country would have to deal with economic recession and post-covid behavioural changes, ICF projected a relatively faster recovery ranging between 3.8 years in Asia Pacific region. According to IATA, it is estimated that the global GDP growth will fall by around 5% this year, before rebounding, and returning to its 2019 level in 2021. To put this decline into context, it is around 4x larger than that of the global financial crisis, where the world GDP fell by 1.3% in 2009. In contrast, the expected decline in air passenger volumes is much more severe, with a decline of around 50% in FY2020. The recovery is such that a return to the level of 2019 may not occur until 2023, taking around two years longer than global GDP as per IATA.
- 5.1.3 Although IATA and ICF estimated relatively long haul to recover on account of COVID 19 pandemic, HIAL is optimistic that the domestic traffic situation will improve by Q3FY21 as the Government had taken required measures to counter the impact of the pandemic. International traffic will take some more time to recover as travellers would have significant concerns to embark on cross border travel until FY21.
- 5.1.4 HIAL in its MYTP submission, has projected the traffic volumes for FY21 to FY26. HIAL has envisaged de-growth of 55% for the total passenger traffic in FY21. This traffic will ramp up to near pre COVID -19 levels in FY22. The passenger traffic will reach 31.4 MPPA in the final year of the Third Control Period i.e. FY26.
- 5.1.5 Further, HIAL has acknowledged that the growth projections are optimistic when compared with the projections of IATA and ICF studies.

Table 64: Passenger traffic projections submitted by HIAL for the Third Control Period as per MYTP

Particulars (In Mn.)	2020	2021	2022	2023	2024	2025	2026
International Traffic	3.85	1.39	3.35	4.49	5.01	5.51	5.83
Domestic Traffic	17.73	8.41	17.10	19.46	21.99	23.98	25.60
Total	21.58	9.80	20.45	23.95	27.00	29.49	31.42
International Traffic as a % of FY2020's International Traffic			87%	117%	130%	143%	151%
Domestic Traffic as a % of FY2020's Domestic Traffic			96%	110%	124%	135%	144%
Total Traffic as a % of FY2020's Total traffic			95%	111%	125%	137%	146%

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Particulars (In Mn.)	2020	2021	2022	2023	2024	2025	2026
Int growth% (yoy)	-1.7%	-63.9%	141.2%	34.0%	11.5%	10.0%	5.8%
Dom growth% (yoy)	1.7%	-52.6%	103.4%	13.8%	13.0%	9.0%	6.7%
Total Growth% (yoy)	1.0%	-55%	109%	17%	13%	9%	7%

Source: HIAL MYTP for the Third Control Period

*Transfer pax and infants in FY2020 was around ~1.16% of the total traffic of FY2020 and the same has been assumed by HIAL for projecting billable passengers for FY21 and Third Control period.

Table 65: ATM projections submitted by HIAL for the Third Control Period as per MYTP

Particulars (in Nos)	2020	2021	2022	2023	2024	2025	2026
International	25752	11074	20678	27463	30462	33432	35079
Domestic Traffic	157999	84601	164374	184846	207323	224415	238219
Total	183751	95675	185052	212309	237785	257847	273299
International ATM as a % of FY2020's International ATM			80%	107%	118%	130%	136%
Domestic ATM as a % of FY2020's Domestic ATM			104%	117%	131%	142%	151%
Total ATM as a % of FY2020's Total ATM			101%	116%	129%	140%	149%
Int growth% (yoy)	-0.50%	-57.00%	86.73%	32.81%	10.92%	9.75%	4.93%
Dom growth% (yoy)	2.46%	-46.45%	94.29%	12.45%	12.16%	8.24%	6.15%
Total Growth% (yoy)	2.03%	-47.93%	93.42%	14.73%	12.00%	8.44%	5.99%

Source: HIAL MYTP for the Third Control Period

Table 66: Cargo projections submitted by HIAL for the Third Control Period as per MYTP

Particulars (in MT)	2020	2021	2022	2023	2024	2025	2026
Total	146148	86227	136372	144554	161501	177219	189821
Total Growth% (yoy)	-1.25%	-41.00%	58.15%	6.00%	11.72%	9.73%	7.11%

Source: HIAL MYTP for the Third Control Period

5.2 Authority's Examination regarding Traffic Projections for the Third Control Period

- 5.2.1 The Authority has examined the assumptions and submissions made by HIAL pertaining to the traffic for the Third Control Period. The Authority has further noted that HIAL has undertaken the traffic projections in more optimistic scenario than the recommendations of an independent study undertaken by ICF.
- 5.2.2 The Authority has looked into the traffic trends at HIAL and observes that the traffic at Hyderabad Airport is dominated by domestic segment (~81% of the total traffic over the last five years was domestic passengers). The Authority is of the opinion that the post pandemic recovery of the traffic at the RGI airport would be led by domestic segment and that RGI airport may recover at a faster growth rate than other major airports which tend to have a higher share of international traffic.
- 5.2.3 However, due to the impact of the second wave of the pandemic in the country, and based on the recommendations of agencies such as IATA, ICF and ACI, that have delayed the recovery to pre-COVID levels to FY23-24, the Authority has adjusted the growth rates for RGI airport based on the current situation and resultant growth rates in the remaining years in the Third Control Period. In this backdrop, the Authority is of the view that it would not be appropriate to use past trend, growth rates or CAGR to project the traffic for the Third Control Period.
- 5.2.4 Subsequently, the traffic has been projected over FY20 which is considered as the base year before the pandemic related restrictions were enforced. The details regarding the same are given in the table below:

Table 67: Traffic levels proposed to be considered by the Authority for the Third Control Period with FY2020 as the base year

	2020 (Million)	2022	2023	2024	2025	2026
		Traffic as % of FY2020				
International	3.85	50%	75%	100%	108%	116%
Domestic	17.73	70%	100%	108%	118%	124%

- 5.2.5 For the ATM projections, based on average of last five years, the Authority has decided to consider the Domestic pax/ATM and International pax/ATM ratio as 112 and 152. The Authority has decided to project the ATMs proportionately as per these ratios for the entire Third Control Period. The details for the same is as given in the table below:

Table 68: Ratios of Domestic pax/ATM and International pax/ATM proposed to be considered by the Authority for the Third Control Period

Particulars	2022	2023	2024	2025	2026
Domestic Pax /ATM ratio	152	152	152	152	152
International Pax /ATM Ratio	112	112	112	112	112

- 5.2.6 For the cargo projections, the Authority has decided to consider the projections for FY22-FY26 as per HIAL's submission as cargo volumes are not impacted by COVID19 pandemic to the extent of passenger and ATM traffic. On the basis of empirical analysis, the split between domestic and international cargo is proposed at 43% and 57% respectively.

5.2.7 Based on the aforementioned analysis, the Authority proposes the traffic for HIAL for the Third Control Period as given below:

Table 69: Traffic proposed to be considered by the Authority for the Third Control Period

Particulars	2020	2021	2022	2023	2024	2025	2026
Passenger Traffic (in Million)							
International Traffic	3.85	0.58	1.93	2.89	3.85	4.16	4.47
Domestic Traffic	17.73	7.47	12.41	17.73	19.15	20.92	21.99
Total	21.58	8.05	14.34	20.62	23.00	25.08	26.45
International Traffic as a % of FY2020's International Traffic			50%	75%	100%	108%	116%
Domestic Traffic as a % of FY2020's Domestic Traffic			70%	100%	108%	118%	124%
Total Traffic as a % of FY2020's Total traffic			66%	96%	107%	116%	123%
Int growth% (yoy)		-85.06%	234.59%	50.00%	33.33%	8.00%	7.41%
Dom growth% (yoy)		-57.86%	66.10%	42.86%	8.00%	9.26%	5.08%
Total Growth% (yoy)		-62.71%	78.14%	43.82%	11.55%	9.05%	5.47%
ATM Projection (in Nos.)							
International	25752	7667	12664	18997	25329	27355	29382
Domestic Traffic	157999	78348	110825	158321	170987	186819	196319
Total	183751	86015	123489	177318	196316	214175	225700
International ATM as a % of FY2020's International ATM			49%	74%	98%	106%	114%
Domestic ATM as a % of FY2020's Domestic ATM			70%	100%	108%	118%	124%
Total ATM as a % of FY2020's Total ATM			67%	96%	107%	117%	123%

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Particulars	2020	2021	2022	2023	2024	2025	2026
Int growth% (yoy)		-70.23%	65.18%	50.00%	33.33%	8.00%	7.41%
Dom growth% (yoy)		-50.41%	41.45%	42.86%	8.00%	9.26%	5.08%
Total Growth% (yoy)		-53.19%	43.57%	43.59%	10.71%	9.10%	5.38%
Cargo Projections (in MT)							
International	82471	63150	77732	82396	92056	101015	108198
Domestic Traffic	63677	47639	58640	62158	69445	76204	81623
Total	146148	110789	136372	144554	161501	177219	189821
Int growth% (yoy)		-23.43%	23.09%	6.00%	11.72%	9.73%	7.11%
Dom growth% (yoy)		-25.19%	23.09%	6.00%	11.72%	9.73%	7.11%
Total Growth% (yoy)		-24.19%	23.09%	6.00%	11.72%	9.73%	7.11%

5.3 Authority's Proposal regarding Traffic Projections for the Third Control Period

Based on the material before it and consequent analysis, the Authority proposes the following:

- 5.3.1 The Authority proposes to consider the traffic as shown in the (Table 69) for the Third Control Period which shall be trued up based on actuals at the time of tariff determination of the Fourth Control Period.

6. **REGULATORY ASSET BASE (RAB) AND DEPRECIATION FOR THE THIRD CONTROL PERIOD**

6.1 **HIAL's Submissions regarding RAB and Depreciation for the Third Control Period**

Capital expenditure plan for the Third Control Period

The capital expenditure submitted by HIAL for the Third Control Period has been divided into the following broad categories:

- A. Capital expenditure towards capacity expansion to 34 MPPA
- B. Capital expenditure towards metro connectivity
- C. Capital expenditure towards general maintenance capital expenditure (airfield pavement enhancement & airfield ground lighting upgrade and general items/allied works)
- D. Capital expenditure towards PSF assets (CISF quarters)

The breakup of the proposed capitalization schedule (asset additions) under the Third Control Period is as summarized below:

Table 70: Summary of the proposed capex submitted by HIAL for the Third Control Period as per MYTP

Sr. No.	Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
1	Capacity Expansion to 34 MPPA (a)	1172.85	2736.95	1569.99	0.00	0.00	5479.79
2	Metro Contribution (b)	0.00	0.00	519.52	0.00	0.00	519.52
3	General Maintenance Capital Expenditure (c)	550.82	436.93	135.01	289.55	115.43	1527.74
4	Capex toward PSF Assets (CISF quarters) (d)	94.30	0.00	0.00	0.00	0.00	94.30
5	Total Capex (E) = (sum of a to d)	1817.97	3173.88	2224.52	289.55	115.43	7621.35
6	Aeronautical Portion of (e)	1613.39	2925.53	2047.03	276.69	115.28	6977.92
7	Non-Aeronautical of (e)	204.59	248.35	177.49	12.86	0.15	643.44

Source: HIAL MYTP for the Third Control Period

(A) Capital expenditure towards capacity expansion to 34 MPPA

- 6.1.1 As per the submissions made by HIAL, the Authority in the Second Control Period Order (Order No 34/2019-20 dated 27th March 2020) had approved capital expenditure towards expansion of the Airport to 20 MPPA capacity by FY20-21 from existing 12 MPPA. However, the significant traffic growth during FY17-FY19 at the RGIA Airport compelled HIAL to revisit the earlier expansion plan in order to meet the growing demand. Accordingly, HIAL revised the capacity expansion plan and initiated capacity expansion to 34 MPPA to cater to the growth in the Third Control Period (FY22-FY26).
- 6.1.2 As per the submissions made by HIAL, it conducted an AUCC on 7th September 2018 appraising the stakeholders of the overall expansion plan and the requirements therein. The Project Information File detailing the key components of the expansion plan along with the Minutes of

AUCC Meeting conducted on September 2018 have been submitted as part of Annexure 15 and Annexure 16 (as part of HIAL's MYTP submission) respectively.

6.1.3 As per HIAL, it had written to the Authority seeking an in-principle approval of the capital outlay plan. However, it was informed by the Authority that there is no specified process for in-principle approval and the Authority would provide a view on the capital outlay plan as a part of the tariff determination exercise.

6.1.4 As per the submissions made by HIAL, the capital expenditure towards capacity augmentation is expected to be completed by April 1, 2024. The said capital expenditure was spread over the years FY18-FY24 covering both the control periods i.e. the Second Control Period as well as the Third Control Period. The breakup of the cost components for the capital expenditure towards capacity expansion as submitted by HIAL is as given below:

Table 71: Capital expenditure (FY18-FY24) towards capacity expansion to 34 MPPA submitted by HIAL as per MYTP

Projects	Allocation	Total Amount (In Rs. Crores)
Expansion of Terminal Buildings including Piers (1)	Common	2485.16
ICT Cost (2)	Aero	69.43
Miscellaneous Direct Capex and Election Items (3)	Aero	57.00
Enabling works (4)	Aero	46.73
Total Terminal Building Cost (a) = (sum of 1 to 4)	Aero	2658.32
Airport Systems (b)	Aero	1070.00
Expansion of Apron & Taxiways (5)	Aero	907.47
GSE Tunnel (6)	Aero	71.00
Apron & Taxiways and GSE Tunnel Cost (c) = (5) + (6)	Aero	978.47
Expansion of the Kerb and Approach Ramp (d)	Aero	156.40
Road Infrastructure (e)	Aero	167.00
Total Hard Cost (sum of a to e)		5030.18
Preliminaries (7)		47.20
Insurance & Permits (8)		72.90
Design Development and PMC (9)		202.94
Contingencies (10)		243.01
Total Soft Costs (f) = (sum of 7 to 10)		566.05
Total Capital Expenditure (g) = (sum of a to f)		5596.23

Projects	Allocation	Total Amount (In Rs. Crores)
Interest During Construction (IDC) (h)		691.54
Total Project Cost (i) = (g) + (h)		6287.77

Source: HIAL MYTP submission for Third Control Period

- 6.1.5 As informed by HIAL, these costs may undergo revision during the course of implementation of the expansion project as it is not feasible to envisage all allied works in brownfield expansion. Therefore, HIAL has requested the Authority to true up the actual capital expenditure incurred during the Third Control Period. The planned phasing of the capital expenditure towards capacity expansion as submitted by HIAL is as given below:

Table 72: Phasing of capital expenditure and capitalization for capacity expansion submitted by HIAL as per MYTP

Particulars (In Rs. Crores)	2018	2019	2020	2021	2022	2023	2024	Total
Capital Expenditure (excluding IDC)	166.87	778.97	1044.45	674.35	919.57	1353.41	658.62	5596.23
Capital Expenditure (including IDC)	164.05	802.41	1192.64	861.90	1106.41	1469.44	690.93	6287.77
Capitalisation	0.00	328.87	416.55	62.56	1172.85	2736.95	1569.99	6287.77

Source: HIAL MYTP and Financial Model for the Third Control Period

- 6.1.6 The actual capital expenditure and capitalisation towards capacity expansion as per the audited statement of accounts submitted by HIAL is as given below:

Table 73: Actual capital expenditure and capitalization towards capacity expansion as per the audited statement of accounts of HIAL for the Second Control Period

Particulars (In Rs. Crores)	2018	2019	2020	2021	Total
Capital Expenditure (excluding IDC)	166.87	778.97	1044.45	881.98	2872.27
Capital Expenditure (including IDC)	164.05	802.41	1192.64	1083.45	3242.55
Capitalisation	0.00	328.87	416.55	25.62	771.04

Source: HIAL MYTP and Auditor Certificate submitted by HIAL

(B) Capital expenditure towards metro connectivity to airport

- 6.1.7 As per the submissions made by HIAL, Government of Telangana (GoT) has conveyed its approval for extension of Metro rail link to RGIA from various parts of Hyderabad city under phase II of Hyderabad Metro project. Towards this, the State Government has already formed a Special Purpose Vehicle by the name of Hyderabad Airport Metro Limited (HAML) which would be responsible for development, construction, operations and management of the Airport Metro

link. The planned Airport Metro Link is expected to span about 31km in total. The plan envisages development of an alignment of 8 km along with setting up of 3 metro stations within the premises of RGIA.

6.1.8 GoT has sought financial contribution from HIAL towards the project. Considering the importance of metro rail connectivity to the airport for passenger comfort and affordability, the Board of HIAL has recommended that it shall provide a support of up to 10% of the project cost which would broadly be equivalent to the cost of metro connectivity within the airport campus. The envisaged project cost of metro line would be around Rs. 5000 crores of which HIAL's contribution would be in the range of Rs. 500 Crores (10% of the project cost) which is equivalent to the estimated cost of metro connectivity within the airport precinct.

6.1.9 HIAL had requested the Ministry of Civil Aviation to consider the aforesaid capital contribution as aeronautical asset and include the same in the determination of the RAB for determination of aeronautical charges. The Ministry had responded to the request by conveying that the proposed investment can be considered as a part of RAB of the airport once the assets are capitalized and put to use in accordance with the extant rules and regulation of the AERA, and if the assets are owned by HIAL. The correspondence between HIAL and MoCA has been provided under Annexure 17 of the MYTP submitted by HIAL. The following contributions towards the metro project have been considered by HIAL in the calculation of RAB in its submission:

Table 74: Capital expenditure towards metro connectivity submitted by HIAL as per MYTP

Sr. No.	Projects	Allocation	Total Amount (in Rs. Crores)
1	Contribution towards metro connectivity	Aero	500.00
2	Total Capital Expenditure (a)		500.00
3	IDC (b)		19.52
4	Total cost (c) = (a) + (b)		519.52

Source: HIAL MYTP for the Third Control Period

6.1.10 The capital expenditure for the aforementioned contribution towards metro connectivity had been presented for user consultation in the AUCC meeting held on 7th September 2018. The phasing of the project and capitalisation assumed by HIAL is as given below:

Table 75: Phasing of capital expenditure and capitalization for metro connectivity submitted by HIAL as per MYTP

Particulars (In Rs. Crores)	2019	2020	2021	2022	2023	2024	2025	2026	Total
Capital Expenditure (including IDC)	0.00	5.36	0.00	0.20	254.40	259.55	0.00	0.00	519.52
Capitalisation	0.00	0.00	0.00	0.00	0.00	519.52	0.00	0.00	519.52

Source: HIAL MYTP for the Third Control Period

(C) General Maintenance Capital Expenditure

(C.1) Capital expenditure towards airfield pavement enhancement and airfield ground lighting upgrade

- 6.1.11 HIAL, as a part of the Second Control Period Tariff filing had appraised the need of runway re-carpeting of 23 meters out of the full width of 75 meters of main runway along its entire length of 4.26 km and re-carpeting of the 50% of secondary runway, connecting taxiways & apron service roads covering 5.12 lakh sq. m. The works were planned to be undertaken in FY18-FY21. The Authority as part of the Second Control Period Order (Order No 34/2019-20 dated 27th March 2020) had considered capex of Rs. 103 Crores towards this project. However, in order to ensure minimum operational impact during the implementation of the project, the resurfacing initiative was deferred by HIAL till the main expansion project is commenced. This was done primarily to help maximize the movements on the airside.
- 6.1.12 As per the report of RITES Limited (“RITES”), appointed by HIAL, to conduct airfield pavement structural analysis, there is a need for carrying out structural enhancement of flexible pavements of main runway, secondary runway, associated taxiways for sustaining the operations of forecast traffic and aircrafts. The RITES report commissioned by HIAL has been provided under Annexure 18 of the MYTP. As per HIAL, given the reassessment of the airfield by RITES, need for an extensive enhancement works with a wider scope has emerged. As per its plan, HIAL intends to re-carpet the runway width of 60 meters of main runway along its entire length of 4.26 km including the whole of secondary runway, existing rapid exit taxiways, connecting taxiways encompassing the total area of 7.05 lakh sq.m. with thickness ranging between 75 mm – 475 mm as against earlier plan of 40 mm.
- 6.1.13 Additionally, HIAL has also planned to upgrade the existing Airfield Ground Lighting (AGL) System and upgrade the main runway (09R 27L) and associated taxiways/taxi lane to CAT-II AGL system. It has also planned to upgrade the secondary runway to CAT-I in order to meet operational efficiency and to conduct smooth operations. The capital expenditure for undertaking these works is as given below:

Table 76: Capital expenditure towards airfield pavement enhancement and airfield ground lighting upgrade submitted by HIAL as per MYTP

Sr. No.	Projects	Total Amount (In Rs. Crores)
1	Airfield Pavement Enhancement (a)	300.00
2	Airfield Ground Lighting Upgrade (b)	75.00
	Total (c) = (a) + (b)	375.00

Source: HIAL MYTP for the Third Control Period

- 6.1.14 As per HIAL’s submission, it has awarded the contract and works are in full swing to complete the same while air traffic movement is contained due to COVID pandemic. The actual capital expenditure and capitalisation towards the works in FY2021 was Rs. 202.07 Crores and Rs. 66.44 Crores respectively. Due to COVID situation, HIAL was unable to carry out the stakeholders’ consultation. However, the same would be undertaken once the situation improves and social distancing norms are relaxed.

(C.2) Capital expenditure towards general/allied capital works

- 6.1.15 As per HIAL’s submission, the existing infrastructure is now getting older. Some of the equipment procured are 8-10 years old and need replacement. By the end of the Third Control Period these equipment will be 15 years old and there is a requirement for upgrade or replacement of various equipment and assets. The capital expenditure that is mandatory in nature to remain compliant with various directives from BCAS/DGCA, applicable laws and other regulatory

bodies, is classified under statutory capex. The capital expenditure as per HIAL's submissions towards general/allied capital works is as given below.

Table 77: Capital expenditure towards general/allied capital works submitted by HIAL for the Third Control Period as per MYTP

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Statutory Requirements (a)	172.31	185.15	57.82	215.78	34.75	665.81
Other General/Maintenance Capex (b)	378.51	251.78	77.19	73.77	80.68	861.93
Total (c) = (a) + (b)	550.82	436.93	135.01	289.55	115.43	1527.74

Source: HIAL MYTP for the Third Control Period

- 6.1.16 As per HIAL, each capex item is aligned with the asset allocation methodology and accordingly the same has been grouped as Aero, Non Aero and Common for allocation purpose. HIAL has requested the Authority to true up the general capex based on actual capitalization during next Control Period. A detailed break-up of the general capex items and allocation is provided under Annexure 19 of the MYTP. A summary of the asset allocation considered by HIAL is as given below:

Table 78: Allocation of general/allied capital works submitted by HIAL for the Third Control Period as per MYTP

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Aero (a)	408.13	430.49	102.45	275.82	114.25	1331.14
Non-Aero (b)	101.63	3.80	30.73	12.73	0.00	148.89
Common (c)	41.06	2.64	1.83	1.00	1.18	47.71
Total (d) = (sum a to c)	550.82	436.93	135.01	289.55	115.43	1527.74

Source: HIAL MYTP for the Third Control Period

(D) Capital expenditure towards CISF quarters

- 6.1.17 As per HIAL's submissions, it constructed a residential township for CISF personnel deployed at the airport based on advice from the Ministry of Home Affairs (MoHA) and the SOP issued by MoCA dated 6th March 2002. On completion of the project, the cost of township and land amounting to Rs. 93.37 Crores was capitalized in the books of the PSF (SC) Fund under intimation to MoCA.
- 6.1.18 As per HIAL, the MoCA issued order no. AV 13024/03/2011-AS (Pt. 1) dated 18th February 2014 which required airport operators to reverse from inception, all the expenditure incurred towards procurement and maintenance of security systems/equipment and on creation of fixed assets out of the PSF (SC) escrow account. HIAL challenged the said order before the Hon'ble High court at Hyderabad. The Hon'ble High Court, vide its order dated 3rd March 2014 followed by further clarifications dated 28th April 2014 and 24th December 2014, stayed the MoCA order

with an undertaking that, in the event the decision of the writ petition goes against the HIAL, it would reverse the expenditure from PSF (SC).

6.1.19 As per HIAL, till date, it has incurred Rs.94.30 Crores towards capital expenditure including the cost of land, construction cost of CISF Quarters and related finance cost of Rs. 47.70 Crores, out of PSF (SC) escrow account as per SOPs, guidelines and clarification issued by the BCAS, MoCA from time to time with regard to the utilization of PSF (SC) fund.

6.1.20 HIAL as part of its submission has considered the capex incurred towards residential quarters amounting to Rs. 94.30 Crores [currently being accounted under the PSF (SC) Fund] as part of RAB as on April 1, 2021 and the future value of interest outgo of Rs 47.70 Crores as pass through expenses in FY22. As per HIAL's submission, upon acceptance of the Authority of the aforesaid treatment of the CISF Quarters in the books of HIAL, it will withdraw the petition and refund the disputed amount to ASF (erstwhile PSF SC) account.

Table 79: Capital expenditure towards PSF Assets (CISF quarters) submitted by HIAL for the Third Control Period as per MYTP

Sr. No.	Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
1	Capex toward PSF Assets (CISF quarters)	94.30	0.00	0.00	0.00	0.00	94.30

Source: HIAL MYTP for the Third Control Period

Allocation of the capital expenditure plan into aeronautical assets

6.1.21 HIAL has provided the asset allocation methodology under the Annexure 9 of the MYTP as per its interpretation of the principles of asset allocation. The key points from HIAL's asset allocation methodology are as presented below:

- Aeronautical assets are assumed to be those assets which are necessary or required for providing the aeronautical services at the airport and all such assets that HIAL may procure in accordance with directions of GoI for or in relation to provision of any of the reserved activities including intangible and other assets which are directly related to the aeronautical services
- Non-aeronautical assets are those which are necessary for the performance of the non-aeronautical services at the airport.
- Common assets are those assets which are not identifiable/categorized into either aeronautical asset or non-aeronautical assets
- Passenger terminal building, heating ventilation and air conditioning system etc. are allocated in the ratio of the area of terminal building used for aeronautical and non-aeronautical services
- Site offices, new office building, quarters for outside security personnel, common hardware, software and communication system, central stores building etc. are allocated on the basis of aero and non-aero assets ratio

Means of finance for the capital expenditure plan for the Third Control Period

6.1.22 The debt and equity financing for the different capex categories as submitted by HIAL has been summarized as given below:

- Expansion project – 70% Debt: 30% Internal accruals
- Metro project – 70% Debt: 30% Internal accruals
- Airfield pavements rehabilitation & Airfield ground lighting upgrade – 70% Debt: 30% Internal accruals
- General Maintenance Capital Expenditure – 0% Debt: 100% Internal accruals

- 6.1.23 In its MYTP submission, HIAL has detailed the different components of the debt that shall govern the cost of debt over the Third Control Period. The different components mentioned in the MYTP are as follows:

HIAL's existing debt - USD 350 Mn Senior Secured Notes due October 2027

- 6.1.24 HIAL proposes this financing to be used towards the refinancing of the previous rupee term loan & external commercial borrowings, and part funding of the expansion capital expenditure.

Table 80: Summary of the USD 350 Mn Senior Secured Notes due October 2027 submitted by HIAL as per MYTP

USD 350 MN Bond	
Date of Drawdown	27-Oct-17
Notes proceeds used towards Refinancing	USD 272 Mn
Notes proceeds used towards Expansion	USD 78 Mn
Exchange Rate @ Drawdown	65.00
Hedge rate	63.71
ROI (Incl Hedge Cost)	8.90%
Repayment Date	October 2027

Source: HIAL MYTP for the Third Control Period

HIAL's existing debt - USD 300 Mn Senior Secured Notes due April 2024

- 6.1.25 HIAL proposes to use this financing facility towards part funding of the expansion capital expenditure.

Table 81: Summary of the USD 300 Mn Senior Secured Notes due April 2024 submitted by HIAL as per MYTP

USD 300mn Bond	
Date of drawdown	10-Apr-19
Notes proceeds used towards Expansion	USD 300 Mn
Exchange Rate @ Drawdown	68.9
Hedge rate	68.9
ROI (Incl. Hedge Cost)	10.27%
Repayment Date	April 24

Source: HIAL MYTP for the Third Control Period

Total outstanding debt of HIAL as on 31st March 2020

- 6.1.26 The total outstanding debt of HIAL as on 31st March 2020 is as given below:

Table 82: Total outstanding debt submitted by HIAL for the Third Control Period as per MYTP

Particulars (In Rs. Crores)	Amount (in USD million)	Amount (In Rs Crores) @ exchange rate as on 31 st March 2020	Amount (In Rs Crores) @ hedge rate
USD 350 Mn Senior Secured Notes due Oct 2027	350.00	2648.27	2274
USD 300 Mn Senior Secured Notes due April 2024	300.00	2269.95	2067
Total	1817.97	3173.88	2224.52

Source: HIAL MYTP for the Third Control Period; Loans reinstated at Rs 75.665, the exchange rate as on 31st March 2020

New Debt facility (RTL - Rupee Term Loan)

6.1.27 HIAL proposes to use new Rupee Term Loan towards funding the balance expansion capital expenditure, metro contribution and general/allied works capital expenditure. The Rupee Term Loan is assumed to be financed at a rate of interest of 10.50% per annum with a tenure of 17 years and ballooned repayment structure.

Table 83: Summary of the New Debt facility (Rupee Term Loan) submitted by HIAL as per MYTP

Particulars	Total (In Rs Crores)	Debt %	Debt (In Rs Crores)
Expansion Project (a)	6287.77	70%	4,401.44
Metro Contribution (b)	519.52	70%	363.66
Runway re-carpeting & AGL (c)	375.00	70%	262.50
General Capex (d)	1679.01	0%	-
Total (e) = (sum of a to d)	8861.30		5027.60
Part Funding by USD 350 MN Notes Due 2027 (f)			506.70
Part Funding by USD 350 MN Notes Due 2027 (g)			2067.00
Balance Debt to be funded through New RTL (h) = (e) – (f) – (g)			2453.90

Source: HIAL MYTP for the Third Control Period

Interest Free Loan (“IFL”) of Rs. 315.05 Crores from the State Government and average cost of debt

6.1.28 The existing Interest Free Loan of Rs. 315.05 Crores has been considered as part of the total debt with 0% cost by HIAL. The IFL from the State Government has to be repaid in 5 equal instalments from the 16th anniversary of the Commercial Operations Date i.e. 23rd March 2024. Repayment of the interest free loan commencing from March 2024 has been factored in the debt forecast.

Average cost of debt

6.1.29 Considering the means of financing as illustrated above, HIAL has assumed the cost of debt as presented in the table given below.

Table 84: Summary of the average cost of debt submitted by HIAL for the Third Control Period as per MYTP

Particulars	2022	2023	2024	2025	2026
Average Cost of Debt	9.66%	9.78%	9.88%	9.75%	9.74%

Source: HIAL MYTP for the Third Control Period

Depreciation

6.1.30 As per the MYTP submitted by HIAL, the following effective rates have been used to project the depreciation in FY2020 & the entire Third Control Period for all the assets included in the RAB:

Table 85: Depreciation rates used by HIAL for the Third Control Period as per MYTP

Asset Classification	Useful life (Years)	Existing Assets	New Assets
Buildings	30	3.80%	3.33%
Electrical Installations	10	2.69%	10.00%
Furnitures & Fixtures	10	6.91%	14.29%
Buildings on Freehold land	30	2.14%	3.33%
Improvements to Leasehold Land	30	3.74%	3.34%
IT Systems	6	6.21%	33.33%
Office Equipment	5	5.30%	20.00%
Other Roads	10	2.09%	10.00%
Plant & Machinery	15	6.84%	6.67%
Runways	30	2.54%	3.33%
Software	6	3.95%	16.67%
Vehicles	8	5.20%	12.50%
Average Depreciation Rate		4.08%	6.75%

6.1.31 As per the submissions by HIAL, for the existing assets, the effective depreciation rates are derived from the audited financials for March 2020. The carrying amount (or WDV) of each asset class is depreciated over the average remaining useful life of the asset class. Whereas, for filing under Shared Till, depreciation is considered on the aero assets based on the adopted asset allocation methodology (Annexure 9 of the MYTP).

6.1.32 As per HIAL's submissions, the depreciation on assets funded by ADFG is not claimed and accordingly the value of depreciation used in the regulatory building blocks is reduced by the

appropriate amount. However, HIAL has considered depreciation on account of the PSF assets as the same has been included in the RAB.

- 6.1.33 For the capex to be undertaken in the Third Control Period, HIAL in its financial model has assumed the weighted average depreciation rate for new assets as mentioned above. The depreciation considered in the MYTP financial model submitted by HIAL is as summarised below:

Table 86: Aeronautical Depreciation submitted by HIAL for the Third Control Period as per MYTP

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Buildings(a)	36.94	36.94	36.94	36.94	36.94	184.69
Electrical Installations (b)	7.15	7.15	7.15	7.15	7.15	35.75
Furniture and Fixtures (c)	4.00	4.00	4.00	0.68	0.00	12.68
Free hold land (d)	0.00	0.00	0.00	0.00	0.00	0.00
Buildings on Freehold land (e)	1.33	1.33	1.33	1.33	1.33	6.67
Improvements to Leasehold Land (f)	3.81	3.81	3.81	3.81	3.81	19.07
IT Systems (g)	11.59	11.59	4.66	0.00	0.00	27.83
Office Equipment (h)	1.23	1.23	1.23	1.23	0.71	5.61
Other Roads (i)	2.12	2.12	2.12	2.12	2.12	10.62
Plant and Machinery (j)	40.27	40.27	40.27	40.27	40.27	201.33
Runways (k)	22.17	22.17	22.17	22.17	22.17	110.85
Software (l)	1.03	1.03	1.03	1.03	1.03	5.16
Vehicles (m)	0.64	0.64	0.64	0.64	0.64	3.20
Forex Loss Adjustment as per AS 11 (n)	0.00	0.00	0.00	0.00	0.00	0.00
Expansion/ General Capex (o)	86.47	236.40	404.15	482.54	495.76	1705.33
PSF (p)	5.89	5.89	5.89	5.89	5.89	29.47
Depreciation for Aero Assets without ADFG adjustments (q) = (sum of a to p)	224.64	374.58	535.40	605.80	617.84	2358.26
ADFG adjustments to depreciation for Aero Assets (r)	3.69	4.02	4.60	5.06	5.05	22.43
Depreciation for Aero Assets with ADFG adjustments (q) – (r)	220.95	370.56	530.79	600.74	612.79	2335.83

Source: HIAL MYTP for the Third Control Period

Regulatory Asset Base for the Third Control Period

6.1.34 Drawing upon the projected asset additions, deletions and depreciation as illustrated in the preceding sections, the projected aeronautical RAB as submitted by HIAL is summarized below:

Table 87: Projected Aeronautical Regulatory Asset Base submitted by HIAL for the Third Control Period as per MYTP

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026
Opening RAB (a)	2251.61	3644.05	6199.02	7715.25	7391.20
Additions to RAB (b)	1613.39	2925.53	2047.03	276.69	115.28
Deletions to RAB (c)	0.00	0.00	0.00	0.00	0.00
Depreciation (incl ADFG adjustment) (d)	220.95	370.56	530.79	600.74	612.79
Closing RAB (e) = (a) + (b) – (c) – (d)	3644.05	6199.02	7715.25	7391.20	6893.70
Average RAB for Tariff Determination = (a+e)/2	2947.83	4921.53	6957.14	7553.23	7142.45

6.2 Authority's Examination regarding RAB and Depreciation for the Third Control Period

6.2.1 The Authority has carefully examined the calculation of RAB and HIAL submissions in this regard. The Authority's examination of HIAL submissions is as follows:

Authority's Examination of Capital expenditure plan for the Third Control Period

While analyzing the MYTP regarding capital expenditure for Third Control Period, AERA had taken into consideration reduced traffic due to COVID 19 pandemic and has appropriately rationalized the proposed capital expenditure as given in the following paras.

(A) Capital expenditure towards capacity expansion to 34 MPPA

6.2.2 The Authority noted that it had approved capital expenditure towards expansion of the Airport to 20 MPPA capacity by FY 20-21 from existing 12 MPPA, in the Second Control Period Order (Order No 34/2019-20 dated 27th March 2020). However, as per the submissions made by HIAL, it has revisited the earlier expansion plan and is now implementing a revised expansion plan aiming to increase the capacity to 34 MPPA.

6.2.3 The Authority had observed that the assessment of such expansion plan and its phasing is a technical matter and therefore required analysis to be undertaken by domain experts. In this backdrop, the Authority appointed RITES to examine the overall expansion project cost submitted by HIAL. The summary of the independent study conducted by RITES and the complete report is detailed out in Annexure 1 and Appendix 1 of this Consultation Paper. The key recommendations pertaining to revised cost estimates as per RITES independent report are summarized below:

Hard Cost

(a) Expansion of Terminal Building

The Terminal area considered for evaluation by RITES is 2, 48,809 sq.m. (Submitted by HIAL to AERA for MYTP computation) which is as per IMG norms as against area of 2,58,809 sq.m. considered by HIAL while justifying its expansion capital expenditure

RITES has calculated the inflation based on the indices issued by Construction industry development council (CIDC indices) on monthly basis for the construction industries. In this calculation, RITES has calculated the CAGR at 3.02% per annum

RITES has considered a period of 2 years for inflation/ escalation as proposed by HIAL due to delay in the award of work by one year and delay in its implementation by one more year. The combined period of construction for the Second Control Period as well as the Third Control Period is FY2018 to FY2023.

It has been observed by RITES that the cost considered in the Second Control Period was valid upto the year of 2021 which implies that the inflation/ escalation will be applicable over the area proposed in Third Control Period only beyond the year FY21 and up FY23 (for 2 years). The GST is considered as 6 % per annum by RITES.

As per RITES' assessment, the total cost is calculated as under:

Table 88: Total Cost for Expansion of Terminal Building as per RITES report

Description	Formula	Amount
Basic cost per unit sq. m. (a)		122466.00
Add Inflation for First year @ 3.02% (b)	$122466 * (.0302)$	3698.47
Add inflation for Second year @ 3.02% (c)	$(122466 + 3698.47) * .0302$	3810.17
Add GST @ 6% (d)	$(122466 + 3698.47 + 3810.17) * (.06)$	7798.48
Total cost per sqm (e) = (sum of a to d)		137773.12
Basic cost per sqm including GST only	$122466 * 1.06$	129813.96
Cost of the Terminal Building for the area of the Second Control Period	$101175 \text{ (sq.m)} * \text{Rs. } 129813.96$	Rs. 1313.39 Crores
Cost of the Terminal Building for the area of the Third Control Period	$147634 \text{ (sq.m)} * \text{Rs. } 137773.12$	Rs. 3347.39 Crores

(b) Expansion of Apron and Taxiway and GSE Tunnel

During the review of cost of Airside works, RITES had adopted the same procedure that had been adopted to calculate the cost for the terminal building and the per unit area cost of airside works for the Second Control Period is subsequently worked out to be Rs. 9909.55 (including GST) per sq.m.

For the Third Control Period, the Airside works cost is worked out as Rs. 10517.12 per sq.m. (Including GST and inflation for two years).

Table 89: Total Cost for Expansion of Apron and Taxiway and GSE Tunnel as per RITES report

Description	Formula	Amount (In Rs. Crores)
The cost of Airside works for the Second Control Period (a)	118734 (sqm) * Rs. 9909.55	117.66
The cost of Airside works for Third Control Period (b)	583464 (sqm) * Rs. 10517.12	613.64
Total cost for Expansion of Apron and Taxiway (c) = (a) + (b)		731.30
The cost towards GSE Tunnel recommended by RITES (d)		82.81
Total cost (Apron & Taxiways and GSE Tunnel) = (c) + (d)		814.11

(c) Expansion of Kerb and Approach Ramp

RITES highlighted that an amount of Rs. 156.40 Crores is catered in the HIAL's proposal for expansion of the kerb and approach ramp. This constitutes approx. 2.80 % of the total cost proposal (Rs. 5596.24 Crores) as per HIAL.

RITES recommended the cost of expansion of Kerb and Approach Ramp as Rs. 156.40 Crores which was same as considered by HIAL in its submission.

(d) Road Infrastructure

As against HIAL's submission of Rs. 167 Crores for the Road Infrastructure, RITES has recommended a cost of Rs. 104.28 Crores.

Soft Cost

(e) Preliminaries, Insurance & Permits

As per HIAL's submission, an amount of Rs. 120.10 Crores is also provisioned towards preliminaries, insurance & permits in the capital cost proposal at approx. 2.39% of the proposed capital hard cost of works (i.e. Rs. 5030.19 Crores). The breakup of Rs. 26.50 Crores includes the building permission fee (Rs. 7.968 Crores). The various insurances and preoperative expenses are expected to be incurred and Rs. 93.60 Crores is estimated as the lump sum basis for future expenses.

After the review of preliminaries by RITES, insurance & permits cost was restricted to Rs. 98.35 crores as against Rs. 120.10 Crores submitted by HIAL.

(f) Design Development and PMC

RITES highlighted that in the procedure for the awarding of work, it is noted that major works contract have been awarded by HIAL based on competitive bids, however, the PMC of value Rs.

154.92 crores has been awarded by HIAL to its own company without any competition. RITES is of the opinion that if HIAL had invited bids for the PMC work, then due to competition, HIAL could have been able to receive lower bid than at the cost at which it has awarded the work to its group company GADL (“GMR Airport Developers Limited”). With PMC of such a high magnitude, the nomination process is a deviation from standard practice. In this case, reducing the PMC & Design fee to 3% of the hard cost has been recommended by RITES.

Accordingly, RITES has recommended the revised Design Development and PMC cost to Rs. 132.67 Crores against Rs. 202.94 Crores submitted by HIAL.

(g) Contingencies

An amount of Rs. 243.01 Crores is provisioned by HIAL in the capital cost proposal at 4.83% of the proposed hard cost (Rs. 5030.19 Crores). The provision of contingencies is towards physical contingencies including any modification to the scope of the work and unforeseen work. Considering the magnitude of the project, a provision of 3% towards contingencies is considered adequate by RITES as presently followed by Govt. organizations such as AAI & CPWD.

6.2.4 The capital expenditure components towards capacity expansion as proposed by HIAL and the revisions proposed by RITES are summarised as given below:

Table 90: RITES recommendations on revision of capital expenditure towards capacity expansion to 34 MPPA

Particulars (In Rs. Crores)	As per HIAL	As per RITES
Total Terminal Building Cost with Airport Systems (a)	3728.32	3347.39
Apron & Taxiways and GSE Tunnel Cost (b)	978.47	814.11
Expansion of the Kerb and Approach Ramp (c)	156.40	156.40
Road Infrastructure (d)	167.00	104.28
Total Hard Cost (1) = (sum of a to d)	5030.18	4422.18
Preliminaries, Insurance & Permits (e)	120.20	98.35
Design Development and PMC (f)	202.94	132.67
Contingencies (g)	243.01	132.67
Total Soft Costs (2) = (sum of e to g)	566.05	373.69
Total Capital Expenditure (1) + (2)	5596.23	4785.86

6.2.5 The Authority noted that HIAL has already incurred major portion of the capital expenditure towards Apron & Taxiways and GSE Tunnel and, Design Development and PMC i.e. Rs. 843.91 Crores and Rs. 137.05 Crores respectively. The capital expenditure on account of these specific components is Rs. 29.80 Crores and Rs. 4.38 Crores more than the revised cost estimates by RITES. Given that the additional amount has been already spent in the Second Control Period

and is within 5% of the RITES' cost estimates, the Authority proposes to accept the same and not allow further expenditure in the Third Control Period for the purpose of determination of RAB.

6.2.6 The Authority proposes to consider the recommendation of the RITES report for all cost heads other than Apron & Taxiways and GSE Tunnel and, Design Development and PMC.

6.2.7 Based on the above observations and findings of the RITES report, the Authority proposes to allow HIAL Rs. 4820.05 Crores (Rs. 4785.86 as per RITES report – Table 90 and Rs. 29.80 Crores & Rs. 4.38 Crores already spent – Para 6.2.5) towards expansion capex for the purpose of determination of RAB instead of Rs. 5596.23 Crores requested by HIAL. The capitalised expansion capital expenditure considered by the Authority as part of the Second Control Period amounts to Rs. 731.26 Crores (excluding IDC) and Rs. 771.04 Crores (including IDC) respectively.

6.2.8 Consequently, the revised expansion capex to be allowed for determination of RAB in the Third Control Period will be as given below:

Table 91: Expansion capex (excluding IDC) proposed to be considered by the Authority towards expansion capital expenditure for the Third Control Period

Sr. No.	Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
1	Expansion of Terminal Building including piers (a)	134.72	530.15	196.88	0.00	0.00	861.75
2	Airport Systems (b)	173.13	276.43	207.12	0.00	0.00	656.68
3	Expansion of Apron & Taxiways and GSE Tunnel (c)	0.00	0.00	0.00	0.00	0.00	0.00
4	Expansion of Kerb and Approach Ramp (d)	10.08	0.00	0.00	0.00	0.00	10.08
5	Road Infrastructure (e)	22.27	42.56	24.98	0.00	0.00	89.81
6	ICT Cost (f)	48.86	11.54	0.00	0.00	0.00	60.41
7	Miscellaneous Direct Capex & Election Items (g)	10.24	20.47	20.47	0.00	0.00	51.18
8	Enabling Works (h)	5.11	5.66	2.31	0.00	0.00	13.08
	Sub-total (i) = (sum of a to h)	404.41	886.81	451.76	0.00	0.00	1742.98
6	Preliminaries (j)	9.36	12.67	4.57	0.00	0.00	26.60
7	Insurance & Permits (k)	11.74	22.53	11.26	0.00	0.00	45.53

Sr. No.	Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
8	Design Development and PMC (l)	0.00	0.00	0.00	0.00	0.00	0.00
9	Contingencies (m)	33.17	66.34	33.17	0.00	0.00	132.67
Total Capital Expenditure (Excluding IDC) (i) + (j) + (k) + (m)		458.68	988.34	500.77	0.00	0.00	1947.78
Capitalisation Schedule for assets (Excluding IDC)		887.07	2031.14	1170.58	0.00	0.00	4088.79

6.2.9 The Authority noted HIAL's submission to fund the expansion capital expenditure through debt and internal accruals in the ratio of 70:30. Considering the revision in the capital expenditure and the Authority's guidelines, the Interest during Construction proposed to be allowed for the Third Control Period is as given below:

Table 92: Interest during Construction and capitalisation proposed to be considered by the Authority for capital expenditure towards capacity expansion for the Third Control Period

Particulars (In Rs. Crores)	Aggregate for the Second Control Period	2022	2023	2024	2025	2026	Aggregate for the Second and Third Control Period
Interest During Construction	357.69	183.62	108.77	29.59	0.00	0.00	679.68
Interest During Construction (Capitalisation schedule)	39.78	188.42	286.41	165.06	0.00	0.00	679.68

6.2.10 The expansion capital expenditure including IDC as considered by the Authority is summarised below:

Table 93: Expansion capex (including IDC) proposed to be considered by the Authority towards expansion capital expenditure for the Third Control Period

Sr. No.	Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
1	Expansion Capex (a) {refer table 91}	887.07	2031.14	1170.58	0.00	0.00	4088.79

Sr. No.	Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
2	IDC (b) {refer table 92}	188.42	286.41	165.06	0.00	0.00	639.89
3	Total (a) + (b)	1075.49	2317.56	1335.64	0.00	0.00	4728.69

6.2.11 The Authority notes that HIAL has allocated the capital expenditure to be incurred in the Third Control Period towards capacity expansion into aeronautical and non-aeronautical components based on its interpretation of the principles of asset allocation. HIAL's classification as submitted in the financial model is as given below:

Table 94: Classification of assets under expansion capital expenditure considered by HIAL as per MYTP

Sr. No.	Asset	Classification
1	Expansion of Terminal Building including piers	Common
2	Airport Systems	Aero
3	Expansion of Apron & Taxiways and GSE Tunnel	Aero
4	Expansion of Kerb and Approach Ramp	Aero
5	Road Infrastructure	Aero
6	ICT Cost	Aero
7	Miscellaneous Direct Capex & Election Items	Aero
8	Enabling Works	Aero

6.2.12 Examining the classification of assets by HIAL, the Authority is of the view that some of the common assets have been classified as aero assets. Therefore, the Authority proposes to consider the following re-classification of assets for the determination RAB for the Third Control Period.

Table 95: Re-classification of assets under expansion capital expenditure proposed to be considered by the Authority

Sr. No.	Asset	Classification
1	Expansion of Terminal Building including piers	Common
2	Airport Systems	Aero
3	Expansion of Apron & Taxiways and GSE Tunnel	Aero
4	Expansion of Kerb and Approach Ramp	Aero
5	Road Infrastructure	Aero

Sr. No.	Asset	Classification
6	ICT Cost	Common
7	Miscellaneous Direct Capex & Election Items	Common
8	Enabling Works	Common

6.2.13 For the purpose of determination of RAB, the Authority proposes to apportion the common assets related to passenger terminal into Aero and Non-Aero assets utilising the Terminal Area Ratio of 84.6% (Aero) and 15.4% (Non Aero). Whereas, the common assets pertaining to functions other than the terminal building are proposed to be apportioned utilising the average aeronautical asset ratio for the Second Control Period i.e. 91.32% (Aero) and 8.68% (Non Aero).

6.2.14 Considering the revision in costs and re-classification of assets, the Authority proposes to allow the below given capitalisation towards the capacity expansion of RGIA for the Third Control Period:

Table 96: Capitalisation schedule proposed to be considered by the Authority for the expansion capital expenditure for the Third Control Period (including Interest During Construction)

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Aero (a)	978.35	2089.77	1199.27	0	0	4267.39
Non-Aero (b)	97.14	227.79	136.38	0	0	461.30
Total (c) = (a) + (b) {refer table 93}	1075.49	2317.56	1335.64	0	0	4728.69

(B) Capital expenditure towards metro connectivity to airport

6.2.15 The Authority noted that the Government of Telangana (GoT) has sought financial contribution from HIAL towards airport metro connectivity project that envisages the development of an alignment of 8 km along with setting up of 3 metro stations within the premises of RGIA. It is also noted that HIAL's board has approved the contribution of 10% of the project cost amounting to Rs. 500 Crores.

6.2.16 The Authority noted that as per the directions by the Ministry of Civil Aviation the proposed investment can be considered as a part of RAB of airport once the assets are capitalized and put to use in accordance with the extant rules and regulation of the AERA, and if the assets are owned by HIAL. However, the Authority is of the view that at this stage there are no specific details available regarding the project such as components to be developed within the premises of the airport, cost details of various components, ownership etc. Therefore, the Authority proposes to not allow the capital expenditure towards metro connectivity during the Third Control Period. However, the expenditure towards metro connectivity may be considered in future subject to following conditions only:

- There is ring fencing of assets and assets are within the boundary of the airport.
- The assets are capitalized in the books of HIAL and put to use in accordance with the extant rules and regulation of the AERA

- The metro stations cater only to the airport; To clarify, metro stations for city side, aero city, or any non-aeronautical services will not be considered as part of RAB

Table 97: Capitalisation schedule proposed to be considered by the Authority for metro connectivity for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Capital Expenditure (including IDC)	0.00	0.00	0.00	0.00	0.00	0.00
Capitalisation	0.00	0.00	0.00	0.00	0.00	0.00

(C) General Maintenance Capital Expenditure

(C.1) Capital expenditure towards airfield pavement enhancement and airfield ground lighting upgrade

6.2.17 The Authority noted HIAL's submission that due to COVID situation, HIAL was unable to carry out the stakeholders' consultation and the same would be undertaken by HIAL once the situation improves and social distancing norms are relaxed.

The Authority would like to mention its dissatisfaction and concern over HIAL not carrying out the stakeholders' consultation. The Authority reiterates that the stakeholders' consultation is of prime importance and the same should have been conducted via online mediums and channels. In this regard, Authority directs HIAL to conduct the said consultation at the earliest.

6.2.18 Being cognizant of the need for long term maintenance of the runways and taxiways due to heavy use and ageing of the asset, the Authority had approved a capex of Rs. 103.59 Crores towards re-carpeting of the runways and taxiways as part of the Second Control Period (Order No 34/2019-20 dated 27th March 2020). The works were planned to be undertaken in FY2018-FY20201. However, the re-surfacing initiative was deferred by HIAL till the commencement of the main expansion project.

6.2.19 The Authority noted that as per the report by RITES appointed by HIAL to conduct airfield pavement structural analysis, there is a need for extensive enhancement works with a wider scope. HIAL also planned to upgrade the existing Airfield Ground Lighting (AGL) System and the main runway (09R 27L) and associated taxiways/taxi lane to CAT-II AGL system, and upgrade the secondary runway to CAT-I in order to meet operational efficiency and smooth operations.

6.2.20 Considering the findings of the RITES report on airfield pavement and structural analysis and need of airfield ground lighting upgrade, the Authority proposes to allow the proposed capital expenditure and capitalisation of Rs. 172.93 Crores and Rs. 308.56 Crores for the Third Control Period. The Authority also proposes to allow HIAL's classification of the subject capital expenditure as aero assets and the financing through 70% debt and 30% internal accruals.

Table 98: Airfield pavement enhancement and airfield ground lighting upgrade works and their capitalisation proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Aero (a)	308.56	0.00	0.00	0.00	0.00	308.56

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Non Aero (b)	0.00	0.00	0.00	0.00	0.00	0.00
Total (c) = (a) + (b)	308.56	0.00	0.00	0.00	0.00	308.56

(C.2) Capital expenditure towards general and allied capital works

6.2.21 The Authority noted that HIAL has proposed certain general and allied capital works, to be funded by internal accruals, classified into two categories, namely statutory requirements and other general/maintenance capex. The costs considered by HIAL under both the categories are summarized in Table 77 of this Consultation Paper.

6.2.22 The Authority analysed the components and allocation of the aforementioned capex into aero, non-aero and common assets considered by HIAL. Pursuant to the analysis, the Authority had the following key observations:

- Under the statutory requirements as per HIAL's submission, HIAL has proposed procurement of body scanners for 36 ATRS lanes at a cost of Rs. 108 Crores in the Third Control Period for the purpose of building a new cargo terminal. It is understood that 36 ATRSs lanes may not be required in a cargo terminal and shall be applicable for a passenger terminal.
- Under the statutory requirements as per HIAL's submission, HIAL has proposed drain gratings for covering the open storm water drains at a cost of Rs. 30 Crores in the Third Control Period. The Authority is of the view that the subject expenditure may not be essential given that it will have limited application towards resolution of issues such as water logging and blockages.
- Under the general/maintenance capex as per HIAL's submission, HIAL has proposed a study to be conducted by NATS for new runway requirement and airside capacity. Given that there has been significant drop in traffic and as per post-COVID traffic projections of HIAL, the RGIA is likely to achieve the traffic of 34 MPPA by 2029-2030, the subject study can be delayed to the next Control Period.
- Under the general/maintenance capex as per HIAL's submission, HIAL has proposed setting up of new AOCC, IMC and SOCC in the expanded terminal at a cost of Rs. 28 Crores that will support the operations of the airport up to 80 MPPA. Given that there has been significant drop in traffic and as per post-COVID traffic projections of HIAL the RGIA is likely to achieve the traffic of 34 MPPA by 2029-2030, the subject expenditure can be delayed to the next Control Period.
- Under the general/maintenance capex as per HIAL's submission, HIAL has proposed widening of the perimeter road and development of GA Apron at a cost of Rs. 45 Crores. Given that there has been significant drop in traffic and as per post-COVID traffic projections of HIAL, the RGIA is likely to achieve the traffic of 34 MPPA by 2029-2030, the subject expenditure can be delayed to the next Control Period.
- Under the general/maintenance capex as per HIAL's submission, HIAL has classified a number of capital expenditure items as aero assets even when they are expected to also cater to non-aero, non- airport or common requirements. Some of such items are teflon roof replacement, landside enhancement artwork, modification to the passenger terminal building, upgradation of HVAC of the terminal, landscaping etc. These capital expenditure

components require reallocation into appropriate categories along with removal of the non-airport expenditure.

- 6.2.23 For the purpose of determination of RAB, the Authority proposes to apportion the common assets related to passenger terminal into Aero and Non-Aero assets utilising the Terminal Area Ratio of 84.6% (Aero) and 15.4% (Non Aero). Whereas, the common assets pertaining to functions other than the terminal building are proposed to be apportioned utilising the average aeronautical asset ratio for the Second Control Period i.e. 91.32% (Aero) and 8.68% (Non Aero)
- 6.2.24 Following an analysis of HIAL's submissions and considering the aforementioned observations, the Authority proposes to allow the below given general capital expenditure capitalization (The details are presented in Annexure 5 of this Consultation Paper) to be funded through internal accruals during the Third Control Period.

Table 99: General and allied capital works and their capitalisation proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Aero (a)	424.57	333.54	104.99	208.14	54.36	1125.60
Non Aero (b)	83.27	25.59	14.72	6.41	1.07	131.07
Total (c) = (a) + (b)	507.84	359.13	119.71	214.55	55.43	1256.67

Based on the above analysis and considering the aforementioned observations, the total General Maintenance Capital Expenditure considered by the Authority for the Third Control Period is summarised below:

Table 100: General Maintenance Capital Expenditure and their capitalisation proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Airfield pavement enhancement and airfield ground lighting upgrade works (a) (Refer Table 98)	308.56	0.00	0.00	0.00	0.00	308.56
General and allied capital works (b) (Refer Table 99)	507.84	359.13	119.71	214.55	55.43	1256.67
Total (c) = (a) + (b)	816.40	359.13	119.71	214.55	55.43	1565.23

(D) Capital expenditure towards CISF quarters

- 6.2.25 HIAL submitted that on the completion of the project, the cost of township and land was capitalized in the books of the PSF (SC) Fund under intimation to MoCA. However, there was an order issued by MoCA on 18th February 2014 which required airport operators to reverse from inception, all the expenditure incurred towards procurement and maintenance of security

systems/equipment and on creation of fixed assets out of the PSF (SC) escrow account. The Authority noted that HIAL challenged the said order before the Hon'ble High court at Hyderabad and the Hon'ble High Court, vide its order dated 3rd March 2014 followed by further clarifications dated 28th April 2014 and 24th December 2014, stayed the MoCA order with an undertaking that, in the event the decision of the writ petition goes against the HIAL, it would reverse the expenditure from PSF (SC).

- 6.2.26 The Authority noted that HIAL as part of its submission has considered the capex incurred towards residential quarters amounting to Rs. 94.30 Crores [currently being accounted under the PSF (SC) Fund] as part of RAB as on April 1, 2021 and upon acceptance by the Authority of the aforesaid treatment of the CISF Quarters in the books of HIAL, it will withdraw the petition and refund the disputed amount to ASF (erstwhile PSF SC) account.
- 6.2.27 The Authority also observed that the said capital expenditure was not presented as part of the capital expenditure plan and was not put before the stakeholders for consultation.
- 6.2.28 Considering the submissions made by HIAL, the Authority is of the view that the subject matter is sub judice and therefore the capital expenditure towards CISF residential quarter should not be considered as part of RAB for the Third Control Period. However, the Authority may take a decision under further tariff orders based on Authority's philosophy, tariff determination principles and AERA Guidelines as issued from time to time.

Table 101: Capital expenditure towards PSF Assets (CISF quarters) and their capitalisation proposed to be considered by the Authority for the Third Control Period

Sr. No.	Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
1	Capex toward PSF Assets (CISF quarters)	0.00	0.00	0.00	0.00	0.00	0.00

Considering the above analysis and the aforementioned observations, the capital expenditure considered by the Authority for the Third Control Period is summarized in the table below.

Table 102: Summary of the capex considered by Authority for the Third Control Period

Sr. No.	Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
1	Capacity Expansion to 34 MPPA (a) (refer table 96)	1075.49	2317.56	1335.64	0.00	0.00	4728.69
2	Metro Contribution (b) (refer table 97)	0.00	0.00	0.00	0.00	0.00	0.00
3	General Maintenance Capital Expenditure (c) (refer table 100)	816.40	359.13	119.71	214.55	55.43	1565.23
4	Capex toward PSF Assets (CISF quarters) (d) (refer table 101)	0.00	0.00	0.00	0.00	0.00	0.00
5	Total Capex (e) = (sum of a to d)	1891.89	2676.69	1455.36	214.55	55.43	6293.92
6	Aeronautical Portion of (e)	1711.48	2423.31	1304.26	208.14	54.36	5701.54
7	Non-Aeronautical of (e)	180.41	253.38	151.10	6.41	1.07	592.38

- 6.2.29 The Authority also noted that during the Second Control Period, HIAL had embarked on the 34 MPPA expansion plan against the 20 MPPA expansion plan as approved in the Second Control

Period Tariff Order (Order no. 34/2019-20 dated 27th March 2020). Approved capital expenditure for the Second Control Period pertaining to some line items such as the Terminal Buildings, among others, had not been undertaken by HIAL.

- 6.2.30 The Authority proposes to reduce 1% of the total project cost from ARR/Target Revenue as readjustment in case any particular capital project is not completed as per the capitalization schedule during the true up of the Third Control Period, at the time of determination of tariff for the Fourth Control Period.

Means of finance for the capital expenditure plan for the Third Control Period

- 6.2.31 The Authority has carefully analysed the submissions of HIAL with respect to the means of finance for the capital expenditure for the Third Control Period. The Authority's examination of the issue is as follows:

- The Authority noted that HIAL proposes to use existing debt - USD 350 Mn Senior Secured Notes due October 2027 towards the refinancing of the previous rupee term loan & external commercial borrowings, and part funding of the expansion capital expenditure. The Authority proposes to allow the same for the Third Control Period.
- The Authority also noted that HIAL proposes to use existing debt - USD 300 Mn Senior Secured Notes due April 2024 towards part funding of the expansion capital expenditure. The Authority proposes to allow the same for the Third Control Period.
- The Authority further noted HIAL's proposal to use new Rupee Term Loan towards funding the balance expansion capital expenditure, metro contribution and general/allied works capital expenditure. HIAL's submissions highlights that the Rupee Term Loan is assumed to be financed at a rate of interest of 10.50% per annum with a tenure of 17 years and ballooned repayment structure.
- The Authority proposes to accept the rate of interest of 10.50% per annum with a tenure of 17 years and ballooned repayment structure for the Rupee Term Loan. However, Authority proposes to not allow the funding of the metro contribution, the details of which has been discussed in Paras 6.2.13 and 6.2.14.

- 6.2.32 The detailed analysis and examination of the funding proposed by the Authority is presented in chapter 9 of this Consultation Paper.

Authority's Examination of HIAL's submission on Depreciation

- 6.2.33 The Authority has carefully analysed the submissions of HIAL with respect to the depreciation of the regulatory building blocks. The Authority's examination of the issue is as follows:

- The Authority noted that proportionate depreciation on account of ADFG assets has been included in the depreciation calculation by HIAL. Authority proposes to consider complete ADFG assets towards aeronautical RAB and hence consider adjustment of complete depreciation on account of ADFG assets against proportionate adjustment submitted by HIAL.
- The Authority noted that the depreciation on account of PSF assets has also been included by HIAL in its submission. Given that the matter is sub-judice, the Authority proposes to not allow depreciation on account of the PSF assets.
- The Authority noted that the depreciation for the existing assets and new assets has been computed based on different depreciation rates. Further, for the purpose of the new assets a weighted average depreciation rate has been used. The Authority proposes to use depreciation as per the rates fixed by the Authority in its Order No 35/2017-18 for both existing and new assets.

6.2.34 The Authority proposes to calculate depreciation for the Third control Period based on the below given below:

Table 103: Depreciation rates proposed to be considered by the Authority for the Third Control Period

Asset Classification	Depreciation Rate
Buildings	3.33%
Electrical Installations	10.00%
Furnitures & Fixtures	14.29%
Freehold Land	0.00%
Buildings on Freehold land	3.33%
Improvements to Leasehold Land	3.34%
IT Systems	33.33%
Office Equipment	20.00%
Other Roads	10.00%
Plant & Machinery	6.67%
Runways	3.33%
Software	16.67%
Vehicles	12.50%

6.2.35 Considering the aforementioned observations and recalculation of the depreciation, the Authority proposes to allow the following aeronautical depreciation for the Third Control Period.

Table 104: Aeronautical Depreciation proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Buildings(a)	31.46	31.46	31.46	31.46	31.46	157.32
Electrical Installations (b)	27.96	23.22	0.00	0.00	0.00	51.19
Furniture and Fixtures (c)	2.82	0.00	0.00	0.00	0.00	2.82
Free hold land (d)	0.00	0.00	0.00	0.00	0.00	0.00
Buildings on Freehold land (e)	2.07	2.07	2.07	2.07	2.07	10.37
Improvements to Leasehold Land (f)	3.66	3.66	3.66	3.66	3.66	18.32
IT Systems(g)	2.56	0.00	0.00	0.00	0.00	2.56

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Office Equipment(h)	-0.84	0.00	0.00	0.00	0.00	-0.84
Other Roads (i)	12.27	12.27	6.97	0.00	0.00	31.50
Plant and Machinery (j)	41.24	41.24	41.24	41.24	41.24	206.18
Runways (k)	30.81	30.81	30.81	30.81	30.81	154.06
Software (l)	1.56	0.00	0.00	0.00	0.00	1.56
Vehicles (m)	1.57	1.07	0.00	0.00	0.00	2.64
Forex Loss Adjustment as per AS 11 (n)	0.00	0.00	0.00	0.00	0.00	0.00
Expansion/ General Capex (o)	57.85	197.61	323.61	374.73	383.61	1337.42
Depreciation for Aero Assets without ADFG adjustments (q) = (sum of a to p)	215.01	343.42	439.83	483.98	492.86	1975.10
ADFG adjustments to depreciation for Aero Assets (r)	4.46	4.82	5.30	5.64	5.69	25.90
Depreciation for Aero Assets with ADFG adjustments (q) – (r)	210.55	338.60	434.54	478.34	487.17	1949.20

Aeronautical RAB proposed to be considered by the Authority for the Third Control Period

6.2.36 Authority proposes to consider nil deletions for the Third Control Period and proposes to true up the same based on actuals at the time of tariff determination for the Fourth Control Period.

6.2.37 Considering the aforementioned observations and proposals, the value of RAB under 30% shared till as proposed by the Authority is as given below:

Table 105: Regulatory Asset Base proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Opening RAB (a)	1870.06	3370.99	5455.70	6325.41	6055.21	
Addition of Assets (b) (Refer Table 102)	1711.48	2423.31	1304.26	208.14	54.36	5701.54
Less: Deletion of Assets (c)	0.00	0.00	0.00	0.00	0.00	0.00
Less: Depreciation (including ADFG adjustment) (d) (Refer Table 104)	210.55	338.60	434.54	478.34	487.17	1949.20
Closing RAB (e) = (a) + (b) – (c) – (d)	3370.99	5455.70	6325.41	6055.21	5622.40	
Average RAB for Tariff Determination {(a) + (e)/2}	2620.53	4413.34	5890.56	6190.31	5838.80	

6.2.38 The Authority has calculated the revised capital expenditure considered Aeronautical by the Authority i.e. as given in the table below:

Table 106: Capital expenditure (Aeronautical) proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	As per HIAL	As per Authority		
	Total Capex	Total	Aero	Non-Aero
Capacity Expansion to 34 MPPA				
Expansion of the Terminal Building including Piers (1)	2517.23	2227.10	1884.13	342.97
Airport Systems (2)	1070.00	960.67	960.67	0.00
Expansion of Apron & Taxiways (3)	387.05	275.10	275.10	0.00
Expansion of the Kerb & Approach ramp (4)	34.76	34.76	34.76	0.00
Road Infrastructure (5)	167.00	104.28	104.28	0.00
ICT Cost (6)	69.43	62.34	52.74	9.60
Miscellaneous Direct Capex & Election Items EPC 01 (7)	57.00	51.18	43.30	7.88
Enabling works (8)	46.73	41.96	35.49	6.46
Capitalized Pre ops (9)	527.92	331.40	299.04	32.36
Capitalised IDC & Finance Charges (10)	602.68	639.89	577.87	62.02
Total Expenditure towards Capacity Expansion (a) = (sum of 1 to 10)	5479.79	4728.69	4267.39	461.30
Metro Contribution				
Contribution Towards Metro Project (11)	500.00	0.00	0.00	0.00
IDC (12)	19.52	0.00	0.00	0.00
Total Expenditure towards Metro Contribution (b) = (11+12)	519.52	0.00	0.00	0.00
General and Maintenance Capital Expenditure				
Airfield pavements rehabilitation & Airfield ground lighting upgrade (13)	0.00	308.56	308.56	0.00
General Capital Expenditure (14)	1527.75	1256.67	1125.59	131.07
Total Expenditure towards General & Maintenance (c) = (13+14)	1527.75	1565.23	1434.15	131.07
Capex towards PSF Assets				
Total Expenditure (d)	94.30	0.00	0.00	0.00

Particulars (In Rs. Crores)	As per HIAL	As per Authority		
	Total Capex	Total	Aero	Non-Aero
Total Capex = (sum of a to d)	7621.35	6293.92	5701.54	592.38

6.3 Authority's Proposals regarding RAB and Depreciation for the Third Control Period

Based on the material before it and based on its analysis, the Authority proposes the following with regard to Regulatory Asset Base and Depreciation for the Third Control Period:

- 6.3.1 Based on the analysis of the capital expenditure plan submitted by HIAL and findings of the RITES Report, the Authority proposes to allow HIAL Rs. 4820.05 Crores towards expansion capex leading to a capitalisation of Rs. 4088.79 Crores in the Third Control Period. Further the Authority also proposes to allow Interest during Construction of Rs. 639.89 Crores for financing of the expansion capex based on prudent means of financing.
- The Authority proposes to consider the expansion capital expenditure as per Table 93 of this Consultation Paper.
- 6.3.2 The Authority proposes to not allow the capital expenditure of Rs. 519 Crores towards metro connectivity during the Third Control Period at this stage (Para 6.2.15 and 6.2.16)
- 6.3.3 The Authority proposes to allow the proposed capital expenditure and capitalisation of Rs. 172.93 Crores and Rs. 308.56 Crores respectively towards airfield pavement enhancement and airfield ground lighting upgrade for the Third Control Period.
- 6.3.4 The Authority proposes to allow capex of Rs. 1256.67 Crores towards general and allied capital works in the Third Control Period against the proposal of Rs. 1527.74 Crores by HIAL.
- 6.3.5 The Authority proposes not to consider the capital expenditure towards CISF residential quarters for the Third Control Period at this stage. (Para 6.2.25 to 6.2.28)
- 6.3.6 The Authority proposes to consider the capital expenditure/asset additions for the Third Control Period as per Table 102 of this Consultation Paper
- 6.3.7 The Authority proposes to reduce 1% of the total project cost from ARR/Target Revenue as readjustment in case any particular capital project is not completed as per the capitalization schedule during the true up of the Third Control Period, at the time of determination of tariff for the Fourth Control Period.
- 6.3.8 The Authority proposes to consider the aeronautical depreciation for the Third Control Period as per Table 104 of this Consultation Paper.
- 6.3.9 For the purpose of determination of RAB, the Authority proposes to apportion the common assets related to passenger terminal into Aero and Non-Aero assets utilising the Terminal Area Ratio of 84.6% (Aero) and 15.4% (Non Aero). Whereas, the common assets pertaining to functions other than the terminal building are proposed to be apportioned utilising the average aeronautical asset ratio for Second Control Period i.e. 91.32% (Aero) and 8.68% (Non Aero).
- 6.3.10 The Authority proposes to consider the RAB for the Third Control Period as per Table 105 of this Consultation Paper.
- 6.3.11 The Authority proposes to true up RAB and Depreciation based on actuals at the time of tariff determination for the Fourth Control Period subject to reasonableness and efficiency.

7. OPERATING EXPENSES

7.1 HIAL's Submissions regarding Operating Expenses for the Third Control Period

Key operating expenses considerations by HIAL for the Third Control Period

7.1.1 In its submissions, HIAL has highlighted the following key aspects that have been considered for estimation of efficient operating expenses for the Third Control Period:

- Upcoming Expansion by HIAL: As per the expansion plan, HIAL intends to increase the capacity of the passenger terminal from existing 12 MPPA to 34 MPPA. Given the expansion of capacity, the overall terminal area is envisaged to be increased by around 3.12 times i.e. from current 117,000 sq. m. to 365,809 sq. m. by FY2023. The increase in terminal area has been considered as a key driver for certain operating expenses such as security, general admin, manpower cost etc.
- Inflationary increase: HIAL has considered inflationary increase at Wholesale Price Index (WPI) for the operating expenses in its MYTP submission. The year on year WPI has been assumed at 4.6% for the Third Control Period based on the Survey of Professional Forecasters on Macroeconomic Indicators– Results of the 63rd Round.
- Real Increase: Considering the past trend, current economic scenario and upcoming expansion, HIAL has considered a 7% year on year real increase for most of the operating expense heads.
- Base Year: In order to form a basis for forecasting operating expenses for the Third Control Period, HIAL has considered FY2020 as the base year for traffic driven expenses and FY2021 for asset driven expenses.

Details of head wise operating costs as submitted by HIAL

The broad heads under which HIAL has classified its total operating expenses are as follows:

- Manpower/Payroll Expenses
- General and Administration Expenses
- Operating Expenses
- Concession Fee

Manpower/Payroll Expenses

7.1.2 Given the capacity expansion, HIAL has proposed that the operational manpower head count requirement will be 1.84 times from the existing levels by FY2026. In this regard, a one-time increase of 16.5% and 29.0% has been considered in FY2022 and FY2023 respectively. Further, HIAL states that a real 7% increase would be required to maintain the manpower at required levels and tackle with the challenges of attrition that has been significantly high in the recent past.

General and Administration Expenses

7.1.3 As per HIAL's submission, the general and administration expenses comprises of costs like rates and taxes, rent, security cost, consultancy and legal expenses, management fee, advertisement and business development, travel and communication costs, land lease etc. As per the MYTP, barring the bank/other finance charges, a real increase of 7% in addition to the inflationary increase of 4.6% has been considered by HIAL to project the general and administrative expenses for the Third Control Period.

7.1.4 HIAL has considered a 5% year on year escalation in cost related to Land Lease Rent to GoT from 2021 up to the end of the Third Control Period.

7.1.5 HIAL states that an increase of 15% is expected in both 2023 and 2024 for costs pertaining to General Admin and Rates and Taxes due to expansion at the airport. General Admin and Rates

and Taxes have been calculated based on a year on year increase of 7%, increase in cost due to expansion and inflationary pressure in the Third Control Period.

7.1.6 HIAL has estimated that security cost has an elasticity of 0.5 in response to increase in terminal area of the airport due to the expansion project. HIAL states that the operational months with increased terminal area will be 3 months in 2022 and 2023 and 12 months for rest of the Third Control Period. Further HIAL has also assumed a year on year growth of 7% for the security costs in addition to WPI inflation at 4.6%.

7.1.7 For the working capital cost projections, HIAL has relied on the projected financials for the Third Control Period. The receivables months for FY22 and for the remaining period in the Third Control Period is assumed as 3 months and 2 months respectively. Further, the outstanding inventory is assumed to be constant at Rs. 6.36 crores (FY2021) throughout the Third Control Period. For the purpose of payables, HIAL has considered creditors of 1 month throughout the Third Control Period to calculate the working capital gap. Further for the purpose of working capital financing, HIAL has considered an interest rate of 10%, processing fee of 0.25% of working capital loan and other bank charges at Rs. 1.18 Crores throughout the Third Control Period.

Utility Cost

7.1.8 HIAL has submitted that the power demand at the airport is expected to rise due to increase in terminal capacity and passengers. HIAL expects the terminal area to increase from existing 117,000 sq.m. to 241,405 sq.m. in 2022 and further to 365,809 sq. m. in 2023 and therefore has projected the utility costs to increase in proportion of the increase in terminal area. Further, increase on account of inflation is also considered for utility cost projections.

Repair and Maintenance

7.1.9 HIAL states that the airport has completed 12 years of operations due to which the assets and equipment have aged. HIAL expects an increase in maintenance and upkeep costs as the case would be for any old machinery and building. HIAL has projected the R&M expenses for the Third Control Period on the basis of historical average of repairs and maintenance expenses i.e. at 1.5% of Gross Asset Value. Further, HIAL has reduced Rs. 7.5 Crores pertaining to IT R&M cost from 2022 onwards due to proposed outsourcing of IT services. The R&M costs have been segregated into aero, non-aero and common on the basis of percentage distribution of these components in total R&M costs of FY2021.

Insurance

7.1.10 As per the submissions made by HIAL, the premium for Large Risk Policy has been forecasted as 30 bps for every Rs. 1000 asset owned and for every Rs. 100 Gross Revenues generated for a particular year. Premium for AOL/3rd Party Liability Policy is considered as USD 0.157 Mn for a sum insured of USD 500 Mn and annual premium for Terrorism Policy has been considered as USD 0.059 Mn for the Third Control Period.

Contractual Manpower Expenses

7.1.11 As per the submissions made by HIAL, increase in the manpower cost is linked to the operationalization of the expanded terminal which shall require outsourced manpower for operations, technical services and landscaping works. In this backdrop, HIAL has assumed an increase of 8.3% in F2022, 16.5% in 2023 and 8.3% in 2024 in the number of outsourced manpower at the airport. HIAL has also deducted Rs. 7.5 Crores (outsourcing of IT services) from cost incurred in 2021 to forecast the contractual manpower cost. Further, a real increase of 7% and inflationary increase has also been considered during the Third Control Period.

PV of interest on PSF assets:

- 7.1.12 As discussed in para 6.1.20, HIAL as part of its submission has considered the capex incurred towards residential quarters amounting to Rs. 94.30 Crores [currently being accounted under the PSF (SC) Fund] as part of RAB as on April 1, 2021 and the future value of interest outgo of Rs 47.70 Crores as pass through expenses in FY22. As per HIAL's submission, upon acceptance of the Authority of the aforesaid treatment of the CISF Quarters in the books of HIAL, it will withdraw the petition and refund the disputed amount to ASF (erstwhile PSF SC) account.
- 7.1.13 Further, as part of its submission, HIAL has detailed the opex allocation methodology in Annexure 9 of the MYTP. The key points from HIAL's submission are presented below:
- The aeronautical O&M expenses are those which are necessary or required for the performance of the aeronautical services at the airport and all other expenditure that the company may incur in accordance with the written direction of the GoI for or in relation to the provision of any reserved activities
 - The non-aeronautical expenditure has been assumed to include all the operating expenditure required for the performance of the non-aeronautical services at the airport
 - The common operating expenditure has been assumed to include all the operating expenditure that are not directly identifiable and used commonly for providing both the aeronautical and non-aeronautical services at the airport
 - The non-airport expenditure has been assumed to include all the operating expenditure incurred towards development of the non-airport activities carried out on 'landside' i.e. outside the airport and enlisted in part 2 of schedule 3 of the Concession Agreement
- 7.1.14 Some of the common expenses are apportioned into aero and non-aero cost as presented below:
- Rates, taxes, insurance, repairs and maintenance, stores and spares, bank charges etc. are apportioned as per the aeronautical asset ratio
 - Land lease rentals payable to Govt. of Telangana has been apportioned in the ratio of the airport and non-airport land
 - All other common expenses have been allocated as per the aeronautical opex ratio

The following is the summary of operating expenditure forecasted by HIAL in the MYTP submission for the Third Control Period:

Table 107: Operating Expenses Submitted by HIAL for the Third Control Period as per MYTP

Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Manpower Cost						
Aero	33.37	48.05	57.37	68.51	81.81	289.11
Non-Aero	3.60	5.19	6.20	7.40	8.83	31.22
Common	117.53	169.20	202.04	241.26	288.09	1018.12
CGF	2.04	2.94	3.51	4.19	5.00	17.67
Non Airport	5.49	7.91	9.45	11.28	13.47	47.60
Total Manpower Cost	162.04	233.28	278.56	332.63	397.20	1403.71

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Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Rates & Taxes (incl. Property Tax)						
Aero	0.00	0.00	0.00	0.00	0.00	0.00
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	7.74	9.93	12.75	14.23	15.88	60.52
CGF	0.00	0.00	0.00	0.00	0.00	0.00
Total Rates & Taxes (incl. Property Tax)	7.74	9.93	12.75	14.23	15.88	60.52
Community Development						
Aero	0.00	0.00	0.00	0.00	0.00	0.00
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	6.51	11.94	18.61	30.88	32.16	100.10
CGF	0.00	0.00	0.00	0.00	0.00	0.00
Total Community Development	6.51	11.94	18.61	30.88	32.16	100.10
Bad Debts Written Off/Advances written off						
Aero	0.00	0.00	0.00	0.00	0.00	0.00
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	0.00	0.00	0.00	0.00	0.00	0.00
CGF	0.00	0.00	0.00	0.00	0.00	0.00
Total Bad Debts Written Off/Advances written off	0.00	0.00	0.00	0.00	0.00	0.00
Bank Charges, Exchange Fluctuations, etc						
Aero	0.00	0.00	0.00	0.00	0.00	0.00
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00

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Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Common	38.33	52.12	56.13	57.58	64.19	268.36
CGF	0.00	0.00	0.00	0.00	0.00	0.00
Total Bank Charges, Exchange Fluctuations, etc	38.33	52.12	56.13	57.58	64.19	268.36
Security Cost						
Aero	0.82	1.29	1.61	1.80	2.00	7.52
Non-Aero	0.51	0.80	1.00	1.12	1.24	4.67
Common	31.42	49.40	61.81	68.98	76.98	288.60
CGF	0.06	0.09	0.11	0.12	0.14	0.52
Total Security Cost	32.81	51.58	64.53	72.02	80.37	301.30
Repairs and Maintenance						
Aero	57.58	87.28	106.61	106.71	104.98	463.15
Non-Aero	3.45	5.67	7.42	7.94	8.37	32.85
Common	23.81	39.20	51.25	54.90	57.87	227.05
CGF	0.00	0.00	0.00	0.00	0.00	0.01
Non Airport	0.46	0.76	0.99	1.06	1.12	4.40
Total Repairs and Maintenance	85.30	132.91	166.28	170.62	172.35	727.46
Stores & Spares						
Aero	9.47	14.76	18.47	18.95	19.14	80.80
Non-Aero	0.31	0.49	0.61	0.62	0.63	2.66
Common	0.79	1.23	1.54	1.58	1.59	6.72
CGF	0.25	0.39	0.48	0.50	0.50	2.12

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Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Non Airport	0.03	0.05	0.06	0.06	0.06	0.26
Total Stores & Spares	10.85	16.91	21.16	21.71	21.93	92.57
Insurance Cost						
Aero	0.00	0.00	0.00	0.00	0.00	0.01
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	13.03	16.13	19.00	21.00	22.78	91.93
CGF	0.00	0.00	0.00	0.00	0.00	0.00
Total Insurance Cost	13.03	16.13	19.00	21.00	22.78	91.94
Land Lease Rent to GoT						
Aero	2.94	3.09	3.25	3.41	3.58	16.27
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	0.00	0.00	0.00	0.00	0.00	0.00
CGF	0.00	0.00	0.00	0.00	0.00	0.00
Non Airport	1.14	1.19	1.25	1.31	1.38	6.27
Total Land Lease Rent to GoT	4.08	4.28	4.50	4.72	4.96	22.54
Technical Service Expenses						
Aero	35.43	46.07	55.65	62.11	69.31	268.57
Non-Aero	2.65	3.45	4.17	4.65	5.19	20.11
Common	7.61	9.89	11.95	13.33	14.88	57.66
CGF	0.51	0.66	0.79	0.89	0.99	3.83
Total Technical Service Expenses	46.20	60.06	72.56	80.98	90.37	350.18

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Housekeeping Cost						
Aero	21.33	41.22	54.12	60.40	67.40	244.47
Non-Aero	3.64	7.04	9.24	10.31	11.51	41.74
Common	1.95	3.78	4.96	5.54	6.18	22.41
CGF	0.00	0.00	0.00	0.00	0.00	0.00
Non Airport	0.65	1.25	1.64	1.83	2.04	7.41
Total Housekeeping Cost	27.57	53.29	69.96	78.07	87.13	316.02
Fuel Farm Cost						
Aero	0.00	0.00	0.00	0.00	0.00	0.00
Non-aero	21.35	23.83	26.59	29.68	33.12	134.56
Total Fuel Farm Cost	21.35	77.12	96.55	107.75	120.25	423.01
Other Operating Expenses						
Aero	1.41	1.81	2.33	2.60	2.90	11.05
Non-Aero	6.16	7.91	10.15	11.33	12.64	48.20
Common	1.12	1.44	1.85	2.06	2.30	8.76
CGF	0.00	0.00	0.00	0.00	0.00	0.00
Total Other Operating Expenses	8.70	11.16	14.32	15.99	17.84	68.01
General Admin Cost						
Aero	14.88	19.10	24.51	27.36	30.53	116.39
Non-Aero	3.76	4.82	6.19	6.91	7.71	29.39
Common	114.34	146.74	188.33	210.18	234.56	894.16
CGF	3.12	4.00	5.13	5.73	6.39	24.37

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Non Airport	0.29	0.37	0.48	0.54	0.60	2.28
Total General Admin Cost	136.39	175.04	224.65	250.71	279.79	1066.60
Utility Expenses						
Aero	25.47	46.14	56.77	59.38	62.11	249.86
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	0.00	0.00	0.00	0.00	0.00	0.00
CGF	0.43	0.78	0.96	1.00	1.05	4.21
Non Airport	0.00	0.00	0.00	0.00	0.00	0.00
Total Utility Expenses	25.90	46.91	57.72	60.38	63.16	254.07
Incidental Income						
Aero	-0.24	-0.25	-0.27	-0.28	-0.29	-1.34
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	-9.55	-10.03	-10.53	-11.05	-11.61	-52.76
CGF	0.00	0.00	0.00	0.00	0.00	0.00
Total Incidental Income	-9.79	-10.28	-10.79	-11.33	-11.90	-54.10
Sum of Aero under each expense head	202.48	308.55	380.42	410.93	443.47	1745.85
Sum of Non-Aero under each expense head	45.44	59.20	71.56	79.96	89.26	345.41
Sum of Common under each expense head	354.64	500.98	619.69	710.46	805.86	2991.63
Sum of CGF under each expense head	6.40	8.85	10.99	12.43	14.07	52.74
Interest on PSF Assets (considered as Aero)	130.03	0.00	0.00	0.00	0.00	130.03

Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Total Aero Operating Expenses after common apportioned	622.00	728.01	900.63	1003.66	1111.87	4366.17
Total Non-Aero Operating Expenses after common apportioned	116.98	149.56	182.03	210.12	240.79	899.49
Aero Concession Fee	104.43	127.91	150.87	172.35	192.08	747.64
Non-Aero Concession Fee	21.43	26.11	32.04	35.60	38.67	153.86
Total Aero Operating Expenses including Aero Concession Fee	726.43	855.92	1051.5	1176.01	1303.95	5113.81
Total Non-Aero Operating Expenses including Non-Aero Concession Fee	138.41	175.67	214.07	245.72	279.46	1053.35

7.2 Authority's Examination regarding Operating Expenses for the Third Control Period

7.2.1 The Authority has carefully examined HIAL's submissions regarding Operating Expenses for the Third Control Period and has the following observations:

Aeronautical Asset Ratio and Aeronautical Opex Ratio

7.2.2 The Authority observed that HIAL has calculated % of Aeronautical Assets and % of Aeronautical operating expenditure based on the assumptions and projections for the Third Control Period. However, the Authority proposes to consider % aeronautical opex ratio as 83.06% (average of revised aero opex ratio for the Second Control Period as per the independent study) consistently throughout the Third Control Period. Similarly, the Authority proposes to consider aeronautical asset ratio as 91.32% (average of revised aero asset ratio for the Second Control Period as per the independent study) consistently throughout the Third Control Period. These ratios are used to allocate common operating expenses under various costs heads submitted by HIAL.

Manpower Expenses

7.2.3 The Authority noted that HIAL has submitted details of employee cost of Rs.111.34 Crores (Actual) for FY21 and Rs. 397.20 Crores (Projected) for FY26. The Authority has assessed that the effective CAGR is 28.96%, which is driven by increase in manpower count of 16.5% in FY22, 29% in FY23 and 7% for FY24-26, a real increase in salary of 7% and WPI inflation of 4.6%. The Authority has looked at the reasons presented by HIAL including expansion of capacity at the airport and retention of talent to maintain quality of service at the airport.

7.2.4 The Authority noted that the number of employees required per MPPA for HIAL to conduct operations at the airport in FY20 is 43.15 per MPPA (863 employees/20 MPPA). Therefore, drawing upon the historical per million passenger manpower requirement, the Authority proposes that to cater additional increase of 7 MPPA in traffic, HIAL is likely to require additional 302

employees. The same has been considered for recalculation of the manpower expenses for the Third Control Period

- 7.2.5 The Authority is of the opinion that the operations in FY2022 will remain impacted by COVID and therefore increase in manpower may be required in the later years. Therefore, the Authority proposes to consider increase in manpower headcount as 15% and 17.5% for FY23 and FY24 respectively. The Authority's projection for manpower requirement vis-à-vis HIAL's submission for the Third Control Period is as given below:

Table 108: HIAL's headcount requirement proposed to be considered by the Authority for the Third Control Period

Particulars (Nos.)	2022	2023	2024	2025	2026
HIAL's submission	16.50%	29.00%	7.00%	7.00%	7.00%
Revised by the Authority	0.00%	15.00%	17.50%	0.00%	0.00%
Effective Operational Manpower	863	992	1166	1166	1166

- 7.2.6 The Authority is not convinced by the rationale of the real increase in manpower cost considered by HIAL and therefore proposes to allow only an inflationary increase of 4.60% along with revised % increase in manpower headcounts. The Authority has projected manpower cost for the Third Control Period using FY2021 as the base year.

- 7.2.7 The Authority proposes to segregate common manpower cost based on average aeronautical asset ratio for the Second Control Period i.e. 91.32% for the Third Control Period, which will be trued up at the end of the Third Control Period based on the actual expenses incurred.

Administrative Expenses other than Bank Charges

- 7.2.8 The Authority proposes that the basis for real increase of 7% in administration cost submitted by HIAL is not clear and therefore recommends to consider only inflationary increase of 4.60% for the administration costs.
- 7.2.9 Given that the capacity expansion of the airport shall be completed by FY2024, the Authority proposes that the increase in administrative cost due to expansion should be considered from FY2024 instead of FY2023 considered by HIAL in its MYTP submission. The revised phasing of growth in administration cost due to expansion is as mentioned below:

Table 109: Increase in Administrative Cost due to expansion proposed to be considered by the Authority for the Third Control Period

Particulars	2022	2023	2024	2025	2026
HIAL's submission	0%	15%	15%	0%	0%
Revised by the Authority	0%	0%	15%	15%	0%

General Admin:

- 7.2.10 The Authority proposes to consider the aforementioned revisions in the projection methodology for admin and general expenses for projections of aero general admin cost with FY2021 as the base year.

The Authority noted that as per HIAL's submission legal is a support function and accordingly HIAL has allocated most of the legal cost as common cost. The Authority proposes that legal cost pertaining to aeronautical activities should only be allowed as part of the tariff determination

exercise hence in absence of detailed bifurcation of legal cost by HIAL into aero and non-aero, the Authority proposes to project the legal costs for the Third Control Period allocated between aero and non-aero in the ratio of 50:50.

Any prudent additional costs incurred by HIAL shall be trued up at the end of the Third Control Period.

Community Development

- 7.2.11 The Authority proposes to consider cost related to community development up to a maximum of 2% of average of the past three years' projected aero profit after tax, given that the average is positive. The Authority proposes to consider community development expense based on the projected aero revenues and profit and the same will be trued up in the Third Control Period.

Security Cost

- 7.2.12 The Authority proposes to approve HIAL's consideration of an elasticity of 0.5 for security cost with respect to increase in terminal area. The Authority is not convinced by the rationale for year on year real increase of 7% in security cost as submitted by HIAL and therefore recommends to consider only inflationary increase of 4.60%.
- 7.2.13 The Authority proposes that the increase in security cost due to expansion should be considered from FY2024 instead of FY2023 considered by HIAL in its MYTP submission. Further, the Authority proposes to consider FY2020 as the base year for projections given the significant impact of COVID on operations during FY2021.
- 7.2.14 The Authority proposes to segregate common security cost based on average aeronautical asset ratio for the Second Control Period i.e. 91.32% for the Third Control Period.
- 7.2.15 The Authority proposes true up any prudent additional cost incurred by HIAL at the end of the Third Control Period.

Rates & Taxes

- 7.2.16 The Authority proposes that the increase in aero Rates & Taxes cost due to expansion should be considered from FY2024 instead of FY2023 considered by HIAL in its MYTP. The Authority is of the opinion that the basis for a year on year real increase of 7% in administration cost submitted by HIAL is not convincing and therefore recommends to consider only inflationary increase of 4.60% for the Rates & Taxes for the Third Control Period.
- 7.2.17 The Authority proposes to segregate common Rates & Taxes on the basis of average aeronautical asset ratio for the Second Control Period i.e. 91.32% for the Third Control Period. The Authority proposes to true up any prudent additional cost incurred by HIAL at the end of the Third Control Period.

Land Lease Rent of GoT

- 7.2.18 The Authority approves a 5% year on year escalation in cost related to Land Lease Rent to GoT from 2021 up to the end of the Third Control Period.

Bank Charges

- 7.2.19 The Authority noted that HIAL has assumed receivables outstanding at 3 months in FY2022 and 2 months thereafter, throughout the Third Control Period for projection of working capital. The Authority noted that a higher receivables cycle and a liberal credit policy may be a requirement due to the impact of the pandemic. However, the Authority is of the opinion that with the gradual normalisation of the situation, the credit cycle or receivables outstanding shall decrease to the

- usual standards. Therefore, the Authority proposes to consider month receivables as 1.5 months for FY2022 and 0.5 months thereafter for rest of the Third Control Period.
- 7.2.20 The Authority proposes to accept HIAL's consideration to keep outstanding inventory constant at Rs. 6.36 Crores throughout the Third Control Period.
- 7.2.21 The Authority proposes to consider month payables outstanding as 1 month only in FY2022 and 0.5 months thereafter for the rest of the Third Control Period.
- 7.2.22 The Authority proposes to accept HIAL's consideration of working capital interest as 10.00% on working capital loan, other Bank Charges to be constant at Rs. 1.18 Crores throughout the Third Control Period and processing fee on working capital loan as 0.25%.
- 7.2.23 The Authority proposes to recalculate revised working capital gap based on revised revenue from regulated Charges, revenue from other sources and total expenses.
- 7.2.24 The Authority proposes to disallow bank charges considered by HIAL incurred due to amortisation of processing fee and onetime cost related to expansion debt in FY2024 and FY2025.
- 7.2.25 The Authority proposes to segregate common costs pertaining to bank charges on the basis of average aeronautical asset ratio for the Second Control Period i.e. 91.32% for the Third Control Period.
- 7.2.26 Based on the above treatment proposed by the Authority, HIAL would be allowed the following amount of Bank charges in respective years of the Third Control Period.

Table 110: Bank Charges proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Bank & Other Finance Charges (a)	1.42	1.29	1.31	1.32	1.33	6.66
Working Capital Interest (b)	14.00	6.95	4.75	5.25	5.75	36.70
Amortisation of Processing Fee & Onetime cost Related to expansion of debt (c)	0	0	0	0	0	0
Total (d) = (sum of a to c)	15.42	8.24	6.06	6.57	7.08	43.36

Utility Costs

- 7.2.27 The Authority has reviewed the submissions made by HIAL with regard to the utility expenses and is of the opinion that there is a merit in the argument that expansion at the airport shall result in increase in utility related expenses. The Authority proposes to consider the utility cost projected with FY2020 as the base year. In addition, the Authority proposes to accept the proposal of an inflationary increase to the utility cost. The utility cost will be trued up based on actuals at the end of the Third Control Period.

Operating Expenses

Repair and Maintenance

- 7.2.28 The Authority observed that HIAL has considered Repair & Maintenance costs at 150 bps of the gross block for the respective years in the Third Control Period. The Authority is of the opinion that new additions will not undergo intensive wear and tear which has been the case in the past

for ageing assets of HIAL. Therefore, the Authority proposes to consider R&M cost for new additions in RAB at 50 bps instead of 150 bps considered by HIAL.

7.2.29 The Authority proposes that R&M cost for existing RAB i.e. at the end of FY2021 is to be calculated based on an inflationary increase of 4.6% year on year. The Authority accepts the adjustment of IT R&M cost of Rs. 7.5 Crores on account of outsourcing in FY2021 for projections.

7.2.30 The Authority proposes to segregate common costs pertaining to R&M based on average aeronautical asset ratio for Second Control Period i.e. 91.32% for the Third Control Period.

Stores and Spares

7.2.31 The Authority approves HIAL's consideration that the cost related to Store and Spares shall grow in consonance with the growth in R&M cost.

7.2.32 The Authority proposes to segregate common cost pertaining to Stores and Spares based on average aeronautical asset ratio for the Second Control Period i.e. 91.32% for the Third Control Period.

Insurance Cost

7.2.33 The Authority proposes that the total insurance cost is to be projected as per the proposed inflation for the Third Control Period. The Authority observed that the insurance cost has substantially increased to Rs. 4.83 Crores in FY2021 from Rs. 2.78 Crores in FY2020, and therefore the proposed inflationary increase should suffice for expected increase in insurance cost in the following years. Furthermore, the Authority proposes to true up insurance costs of HIAL at the end of the Second Control Period based on the actual expenses incurred.

7.2.34 The Authority proposes to segregate insurance cost based on average aeronautical asset ratio for the Second Control Period i.e. 91.32% for the Third Control Period.

Outsourced Manpower Cost

7.2.35 The Authority proposes to accept HIAL's consideration to reduce Rs. 7.50 Crores (outsourcing of IT services) from the actual cost for FY2021 in order to project outsourced manpower cost for the Third Control Period.

7.2.36 The Authority is of the opinion that the basis for year on year real increase of 7% in manpower expenses is not convincing and therefore recommends to consider only inflationary increase of 4.60% for the outsourced manpower cost.

7.2.37 The Authority noted that the expansion of the terminal shall be completed by FY2024. Therefore, the Authority proposes that the increase in outsourced manpower cost due to expansion should be considered from FY2024 instead of FY2023 as considered by HIAL in its MYTP submission. The Authority approves the following increase in outsourced manpower cost due to terminal expansion:

Table 111: Increase in Outsourced Manpower due to expansion proposed to be considered by the Authority for the Third Control Period

Particulars	2022	2023	2024	2025	2026
HIAL's submission	0.00%	8.25%	16.5%	8.25%	0.00%
Revised by the Authority	0.00%	0.00%	8.25%	16.5%	8.25%

7.2.38 The Authority proposes to segregate common outsourced manpower cost based on average aeronautical asset ratio for the Second Control Period i.e. 91.32% for the Third Control Period.

Housekeeping Cost

- 7.2.39 The Authority proposes to consider an inflationary increase of 4.60% p.a. instead of HIAL's proposed real increase of 7.00% p.a. in addition to the inflationary increase to project the housekeeping costs for the Third Control Period.
- 7.2.40 The Authority proposes to consider the aforementioned revision in the projection methodology for housekeeping expenses for projections of aero housekeeping cost with FY2020 as the base year. Further, the Authority approves expansion of the terminal as a driver for the housekeeping cost and therefore accepts HIAL's consideration that increase in housekeeping cost due to expansion has to be factored for the operational months for expanded terminal.
- 7.2.41 The Authority proposes to segregate common housekeeping cost based on average aeronautical asset ratio for the Second Control Period i.e. 91.32% for the Third Control Period.

Other Operating Cost

- 7.2.42 The Authority proposes to consider an inflationary increase of 4.60% to project other operating cost instead of HIAL's submission of a real increase of 7.00% p.a. in addition to the inflationary increase. The Authority proposes to consider the utility cost projected with FY2020 as the base year.
- 7.2.43 The Authority proposes to segregate common operating cost based on average aeronautical opex ratio for the Second Control Period i.e. 83.06% for the Third Control Period.

Interest on PSF Assets

- 7.2.44 The Authority proposes to disallow interest cost on PSF assets considered by HIAL as a part of operating expenditure for the Third Control Period because the matter is subjudice and final decision is pending with the Hon'ble High Court. The Authority proposes to true up the expense on the basis of decision of Hon'ble High Court.
- 7.2.45 The Authority has revised the submissions made by HIAL and considered the revised estimates for the Third Control Period as depicted in the table given below that shall be trued up based on actuals.

Incidental Income

- 7.2.46 The Authority noted that HIAL had netted off incidental income from new office building, site office building and township from the common and aero expense. The Authority proposes to not allow the net off of incidental income from operating expenses.

Collection charges for IATA, UDF and PSF

- 7.2.47 The Authority noted that HIAL in its submission had considered collection charges for IATA, UDF and PSF as a deduction in revenue estimation. The Authority is of the view that these charges should be considered as operating expenses and therefore has re-classified the same within other operating expenses category.

Table 112: Efficient Operating Expenses proposed to be considered by the Authority for the Third Control Period

Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Manpower Cost						
Aero	25.93	31.19	38.34	40.10	41.94	177.50

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Non-Aero	3.51	4.22	5.18	5.42	5.67	24.00
Common	87.68	105.46	129.62	135.58	141.82	600.16
Non Airport	0.00	0.01	0.01	0.01	0.01	0.03
Total Manpower Cost	117.12	140.88	173.15	181.11	189.44	801.70
Rates & Taxes (incl. Property Tax)						
Aero	0.14	0.15	0.18	0.22	0.23	0.92
Non-Aero	0.02	0.02	0.02	0.02	0.02	0.10
Common	5.55	5.81	6.98	8.40	8.79	35.53
Total Rates & Taxes (incl. Property Tax)	5.71	5.97	7.18	8.64	9.04	36.55
Community Development						
Aero	1.25	0.00	0.00	0.00	0.00	1.25
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	0.00	0.00	0.00	0.00	0.00	0.00
Total Community Development	1.25	0.00	0.00	0.00	0.00	1.25
Bad Debts Written Off/Advances written off						
Aero	0.00	0.00	0.00	0.00	0.00	0.00
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	0.00	0.00	0.00	0.00	0.00	0.00
Total Bad Debts Written Off/Advances written off	0.00	0.00	0.00	0.00	0.00	0.00
Bank Charges, Exchange Fluctuations, etc						

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Aero	0.00	0.00	0.00	0.00	0.00	0.00
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	15.42	8.24	6.06	6.57	7.08	43.36
Total Bank Charges, Exchange Fluctuations, etc	15.42	8.24	6.06	6.57	7.08	43.36
Security Cost						
Aero	0.64	0.95	1.11	1.16	1.22	5.09
Non-Aero	0.56	0.83	0.98	1.02	1.07	4.46
Common	27.61	40.68	47.70	49.90	52.19	218.08
Total Security Cost	28.81	42.46	49.79	52.08	54.48	227.62
Repairs and Maintenance						
Aero	24.83	27.56	26.90	23.39	19.02	121.69
Non-Aero	1.42	2.01	2.51	2.88	3.27	12.09
Common	30.85	43.56	54.37	62.44	70.79	262.00
Non Airport	-0.03	-0.04	-0.05	-0.06	-0.07	-0.25
Total Repairs and Maintenance	57.08	73.08	83.72	88.65	93.00	395.53
Stores & Spares						
Aero	3.15	4.04	4.62	4.90	5.14	21.84
Non-Aero	0.19	0.25	0.29	0.30	0.32	1.35
Common	0.78	1.00	1.15	1.22	1.28	5.44
Non Airport	0.00	0.00	0.00	0.00	0.00	0.00
Total Stores & Spares	4.13	5.29	6.06	6.42	6.73	28.63

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Insurance Cost						
Aero	0.00	0.00	0.00	0.00	0.00	0.00
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	5.05	5.29	5.53	5.78	6.05	27.71
Total Insurance Cost	5.05	5.29	5.53	5.78	6.05	27.71
Land Lease Rent to GoT						
Aero	3.02	3.17	3.33	3.50	3.67	16.71
Non-Aero	1.14	1.19	1.25	1.32	1.38	6.28
Common	0.00	0.00	0.00	0.00	0.00	0.00
Non Airport	0.00	0.00	0.00	0.00	0.00	0.00
Total Land Lease Rent to GoT	4.16	4.37	4.59	4.81	5.06	22.98
Technical Service Expenses						
Aero	11.72	12.26	13.89	16.92	19.16	73.95
Non-Aero	0.39	0.41	0.46	0.56	0.63	2.45
Common	19.30	20.19	22.86	27.85	31.54	121.74
Total Technical Service Expenses	31.41	32.86	37.20	45.33	51.33	198.14
Housekeeping Cost						
Aero	18.74	33.95	41.77	43.70	45.71	183.87
Non-Aero	3.19	5.78	7.12	7.45	7.79	31.33
Common	2.29	4.14	5.10	5.33	5.58	22.44
Non Airport	0.00	0.00	0.00	0.00	0.00	0.00
Total Housekeeping Cost	24.22	43.88	53.99	56.47	59.07	237.63

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Fuel Farm Cost						
Aero	13.20	13.81	14.44	15.11	15.80	72.37
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Total Fuel Farm Cost	13.20	57.69	68.43	71.58	74.87	285.78
Other Operating Expenses						
Aero	3.81	3.98	4.79	5.76	6.03	24.37
Non-Aero	2.94	3.08	3.70	4.46	4.66	18.84
Common	1.61	1.68	2.03	2.44	2.55	10.31
Total Other Operating Expenses	8.36	8.75	10.52	12.66	13.24	53.52
General Admin Cost						
Aero	13.77	14.40	17.32	20.84	21.79	88.12
Non-Aero	12.14	12.69	15.27	18.37	19.21	77.68
Common	49.16	51.42	61.85	74.40	77.82	314.64
Non Airport	0.00	0.00	0.01	0.01	0.01	0.03
Total General Admin Cost	75.06	78.52	94.45	113.61	118.83	480.47
Utility Expenses						
Aero	25.91	46.93	57.74	60.40	63.18	254.16
Non-Aero	0.00	0.00	0.00	0.00	0.00	0.00
Common	0.00	0.00	0.00	0.00	0.00	0.00
Non Airport	0.00	0.00	0.00	0.00	0.00	0.00
Total Utility Expenses	25.91	46.93	57.74	60.40	63.18	254.16

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Operating Expenses (in INR crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Sum of Aero (including CGF expenses) under each expense head	146.13	192.39	224.44	235.99	242.88	1041.83
Sum of Non-Aero under each expense head	25.50	30.48	36.78	41.79	44.02	178.58
Sum of Common under each expense head	245.29	287.47	343.24	379.91	405.48	1661.40
Total Aero Operating Expenses excluding Aero Concession Fee (a)	365.92	450.52	532.61	576.57	606.52	2532.15
Total Non-Aero Operating Expenses excluding Non-Aero Concession Fee (b)	50.99	59.83	71.85	81.12	85.87	349.66
Aero Concession Fee	30.81	45.25	52.35	59.29	65.03	252.73
Non-Aero Concession Fee	16.05	20.22	23.07	25.15	27.06	111.56
Total Aero Operating Expenses including Aero Concession Fee	396.73	495.78	584.95	635.86	671.55	2784.87
Total Non-Aero Operating Expenses including Non-Aero Concession Fee	67.04	80.05	94.93	106.28	112.92	461.22

7.3 Authority's proposal regarding Operating Expenses related to the Third Control Period

Based on its analysis the Authority proposes the following regarding Operating Expenses for the Third Control Period.

- 7.3.1 The Authority proposes to disallow interest cost on PSF assets considered by HIAL as part of operating expenditure for the Third Control Period
- 7.3.2 The Authority proposes to not allow the net off of incidental income from operating expenses
- 7.3.3 The Authority proposes to consider allocation ratio as set out in Para 7.2.2 for the Third Control Period
- 7.3.4 The Authority proposes to consider the operating expenditure as set out in Table 112 for the Third Control Period
- 7.3.5 To true up the operating expenditure for the current control period based on actuals subject to reasonableness and efficiency, at the time of determination of tariff for the next control period

8. **NON-AERONAUTICAL REVENUES FOR THE THIRD CONTROL PERIOD**

8.1 **HIAL's Submissions regarding Non-Aeronautical Revenues for the Third Control Period**

8.1.1 HIAL, in its MYTP submission, has identified the key drivers of non-aeronautical revenue streams and mapped individual items with the relevant drivers. HIAL highlighted that the fall in demand and heightened health concerns due to the ongoing COVID 19 pandemic have been taken into consideration while forecasting the various sources of non-aeronautical revenue.

8.1.2 HIAL is of view that there will a significant drop in passenger spending in F&B, Retail and duty free business and it will take 4-5 years for the recovery to reach pre-COVID levels. HIAL has assumed the passenger penetration levels to reach FY20 levels by FY24 only and has applied a 25% decrease in revenue in FY21 & FY22 and 20% in FY2023 over the base of FY20 revenues to forecast passenger linked revenue streams for the Third Control Period.

8.1.3 HIAL has forecasted the non-aeronautical revenues based on the growth drivers identified below:

- ATM growth rate
- Total passenger traffic growth rate
- International passenger traffic growth rate
- Cargo volume growth rate
- Contractual (Rentals, Minimum Guarantees, Common Area Maintenance etc) and
- WPI Increase
- Impact of COVID on passenger spending and Spend Per Pax (SPP) thereof

The below table summarizes the key drivers for different non-aeronautical revenue streams as submitted by HIAL.

Table 113: Non-Aero Revenue projections details submitted by HIAL as per MYTP

ATM Growth linked revenue streams	Passenger traffic growth linked revenue streams	International passenger traffic growth linked revenue streams	Cargo throughput growth linked revenue streams	Others
➤ Fuel Farm revenues ➤ Revenue share from ground handling ➤ Ground Power unit	➤ Revenue Share from In-flight kitchen ➤ Retail & F&B revenues ➤ Plaza Lounge, Car Parking ➤ Radio taxi revenue	➤ Duty Free Revenue Share ➤ Forex services Revenue Share ➤ Public Admission fees	➤ Revenue share from cargo	➤ Rental Income ➤ Revenue from Advertisement ➤ Other Miscellaneous income

Source: HIAL MYTP for the Third Control Period

8.1.4 Further, HIAL in its submission acknowledged that the revenues from Cargo, Ground Handling, Ground Power Unit & Fuel Farm have been treated as non-aeronautical in nature. Also, the Profit Before Tax (PBT) of non-aeronautical revenues has been considered for cross subsidisation purpose by HIAL.

8.1.5 Projections of the different non-aeronautical revenues streams as per HIAL's submission are summarized below:

ATM Growth Linked Revenue Streams

Fuel Farm

- 8.1.6 HIAL has considered fuel farm revenues as non-aeronautical in nature. HIAL has claimed that, as per the Concession Agreement, it is free to determine charges for the services other than the facilities and services under the regulated items. In line with this claim, HIAL has proposed to introduce either fuel access charge of Rs. 670/KL or equivalent charge per pax w.e.f. April 1 2021 in addition to fuel infrastructure charges.

Ground Handling

- 8.1.7 HIAL highlighted that below mentioned Ground Handling Agents (GHAs) are currently operating at the airport:
- M/s Celebi Airport Services India Private Limited
 - M/s Globe Ground India Private Limited
 - Air India SATS Airport Services Private Limited
 - Other 3rd party ground handlers employed by domestic airlines
- 8.1.8 HIAL acknowledged that as per the contract the ground handlers pay a revenue share and minimum guarantee to HIAL. As ground handling revenues are linked to ATMs, the ground handling revenue share has been projected in line with ATM growth rate for the year FY21 to FY26.

Ground Power unit

- 8.1.9 Ground power unit revenue for the year FY20 is considered at actuals by HIAL. From FY21 onwards, ground power unit revenue share has been projected in proportion with the ATM growth for the Third Control Period.

ICT Revenues (CUTE, CUSS, BRS & IT)

- 8.1.10 According to HIAL submission, it has finalized a third party candidate and shall outsource the IT services to it from FY22. In highlight of this new development, HIAL has considered USD 1.25 per departing pax for FY21 and a revenue share of 3% on ICT revenue of USD 1.25 per departing pax which shall be collected by the concessionaire from the airlines for provision of IT services.

Passenger Growth Linked Revenue Streams

In-flight kitchen

- 8.1.11 HIAL has observed that the in-flight kitchen is one of the severely affected businesses due to the current pervasive pandemic. Consequently, it has assumed a negative growth of 25% in addition to the negative passenger growth rate for the year FY21. In FY22, the demand has been assumed to reverse and the In-Flight Kitchen revenue is subject to a 33% growth rate in addition to the passenger growth rate. The In-Flight kitchen revenue is linked to passenger growth rate FY23 onwards.

Retail and Food & Beverages (F&B) Revenues

- 8.1.12 HIAL has highlighted that it has entered into multiple Concession Agreements to facilitate retail and food services at the airport. Due to the pandemic, the consumers have concerns in buying outside food on health reasons and weak economic outlook, a decrease in revenues over FY20 levels by 25% in FY21 & FY22 and 20% in FY23 over and above the projections based traffic growth rates has been forecasted.

Plaza Lounge / Airport Lodge

- 8.1.13 The revenues for FY20 has been taken as actuals and revenue for FY21 has been linked to international passenger traffic growth rate and inflation as per HIAL's submission. Due to a pessimistic outlook in the revival of passenger interest towards using lounge facilities a decrease in revenues by 25% in FY21 & FY22 and 20% in FY23 over FY20 levels has been forecasted.

Car Park and Radio Taxi

- 8.1.14 HIAL has submitted that the car park at the airport is operated by Tenaga Parking (India) Pvt Ltd on the basis of a Management Services Agreement. The revenue from collection of parking charges accrues to HIAL, while HIAL pays an Operator Fee/Management Fee to Tenaga Parking.
- 8.1.15 Revenues for Radio taxi and Car Park for FY2020 has been linked to passenger traffic growth rate and inflation for projections of FY21 as well as FY22-26.

International Pax Growth Linked Revenue Streams

Duty Free

- 8.1.16 HIAL has submitted that the duty free operations are concessioned out to GMR Hospitality and Retail Limited (GHRL) for setting up, developing, operating, maintaining and managing the duty free outlet at the airport. The contract with GHRL specifies a percentage share of the revenue to be shared with HIAL, along with a minimum guaranteed amount. If the revenue share falls below the minimum guarantee amount then GHRL has to pay at least the minimum amount to HIAL.
- 8.1.17 As per HIAL's submission, the duty free revenues for HIAL up to FY20 are taken at actuals which is the basis of the projections. From FY21 onwards, the concession fee is escalated by international passenger traffic growth rate. The concession fee income is impacted by the slow recovery of international passenger. Further on account of the pandemic, decrease in SPP @ 25% in FY21 & FY22 and 20% in FY23 over FY20 SPP for the purpose of projecting duty free sales has been considered.

Forex Services

- 8.1.18 HIAL has submitted that the forex services at the airport is concessioned out to Weizmann Forex Ltd. The forex revenues up to FY20 are taken at actuals and has been escalated by international passenger traffic growth rate along with inflationary increase for projections thereafter. A decrease of 10% YOY in forex revenues from FY21 has been forecasted by HIAL due to increasing propensity of using plastic money and digitization.

Public admission fee

- 8.1.19 As per HIAL's submission, the revenue from public admission fees up to FY20 are taken at actuals and are the basis of the projections. Revenues from FY21 are projected on the basis of international passenger growth rate as a major portion of this revenue stream comes from the meeters and greeters of international passengers. Further, for FY21 a decrease of 25% is considered over and above the projections basis the international traffic to account for social distancing protocols.

Cargo Volume Growth Linked Revenue Stream

Cargo Revenues

- 8.1.20 HIAL has given a concession to GMR Air Cargo and Aerospace Engineering Limited (GACAEL) formerly Hyderabad Menzies Air Cargo Pvt Ltd (HMACPL) to operate a Cargo Terminal at the airport. HIAL earns a revenue share and space rentals from HMACPL. The revenue share earned by HIAL is 18%.
- 8.1.21 From April 2022, HIAL is planning to engage a new cargo operator from whom HIAL shall receive 26% revenue share from gross revenues. The Cargo volume is assumed to be shared equally among the two operators and cargo operators' revenues are projected on the basis of the projected cargo volume.

Others

Rental Revenues

- 8.1.22 In its submission, HIAL has included the rental income from plaza lounge, airline offices, airline ticketing counter, maintenance building, government agencies, promotional counters, PTC, blue dart building, airline lounges, telecom, canteens, new office building and old site office, fuel

station, duty free concessionaire, land rentals paid by inflight kitchen concessionaires, common area maintenance (CAM) etc. Rental revenues are contractual in nature and are projected based on existing arrangements. Most of the existing rental contracts have annual escalation factor of 4-5%.

Rental Income with annual escalations

- 8.1.23 The rental income up to FY20 is taken at actuals and 5% YOY growth is applied to project the rental revenues.
- 8.1.24 HIAL highlighted that it has been approached by various concessionaires for deferment/waiver of rent in light of airport shutdown due to COVID and its impact of the business performance of the concessionaire. Hence, HIAL has considered a decrease of 25%, equivalent to 3 months rental income in the rental income of FY21.
- 8.1.25 HIAL expects an increase in rental income of Rs. 2.0 Crores in FY23 by when the expanded terminal shall be fully operational. The same has been factored in the rent forecast with annual escalation of 5% thereon.

Fixed Rental from Cargo Concessionaire

- 8.1.26 The existing cargo concessionaire, GMR Air Cargo and Aerospace Engineering Limited (GACAEL) pays an annual rent Rs. 5.78 Crores per annum as rent for Cargo Terminal building constructed by HIAL. Further, the MYTP submission highlighted that HIAL has sold of the existing Cargo Terminal Building (CTB) at RGI Airport to GACAEL on July 1, 2020. Hence, no rent has been projected from July'20 onwards for the existing cargo terminal.
- 8.1.27 Further, HIAL shall be constructing a new cargo terminal building for the 2nd Operator which shall be onboard in FY2022 for which HIAL is proposing to levy a rent of Rs. 7.56 Crores per annum.

Advertisement and Promotions

- 8.1.28 HIAL highlighted that in light of the economic slowdown, as a cost control measure, business houses are allocating less budget towards advertisement and promotion. For this reason HIAL envisages a significant drop in the advertisement revenue for FY21. HIAL has assumed a 60% negative growth in revenues for FY21 followed by a 30% annual increase in FY22 and FY23 which is expected to taper to 20% in FY24 and 10% thereon for the rest of the Third Control Period.
- 8.1.29 The revenues from other promotions up to FY20 are taken at actuals and are the basis of the projections. Promotions revenue is linked with traffic growth and inflation.

Other Revenue Streams (Miscellaneous Income)

- 8.1.30 HIAL has assumed miscellaneous income from Airport Entry Passes (AEP), IT, permits, airline security, filming and paid porters. As these are ancillary revenues and are not contractual in nature, the revenues under this head are assumed to remain constant at FY20 levels during the Control Period. However, on account of the pandemic, HIAL has assumed negative growth of 25% for FY21-FY26 over FY20 revenues.
- 8.1.31 HIAL, in its submission, has acknowledged that the other income comprising of interest income and dividend income have been excluded from the tariff calculations. Also, the revenue from non-airport land and non-airport activities are also excluded for the purpose of tariff determination.
- 8.1.32 Further, HIAL highlighted that the incidental revenues in the form of rentals from New Office Building and Site Office Building are excluded from non-aeronautical revenues and have been netted off against total operating expenses, in line with the concept document submitted as part of MYTP.

8.1.33 The non-aero revenues as per HIAL's submission are summarised in the below table:

Table 114: Non-Aeronautical Revenues submitted by HIAL for the Third Control Period as per MYTP

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
CGF Revenues						
Ground Handling Concession Fee (1)	35.06	40.22	45.05	48.85	51.77	220.94
Revenue Share to GHIAL (2)	0.93	1.12	1.29	1.29	1.37	6.00
Ground Power Unit (3)	1.73	1.99	2.23	2.41	2.56	10.92
Fuel Farm Revenue (4)	149.04	171.00	191.52	207.68	220.12	939.36
Cargo Revenue (5)	28.62	29.88	32.50	34.92	36.87	162.78
CGF Revenues (a) = sum of (1) to (5)	215.38	244.20	272.58	295.15	312.69	1340.00
In-Flight Kitchen						
Revenue Share (1)	8.79	11.48	16.92	19.33	21.55	78.07
Lease Rentals (2)	1.25	1.31	1.37	1.44	1.51	6.88
IFK Revenues (b) = (1) + (2)	10.03	12.79	18.30	20.78	23.06	84.96
Duty Free						
Revenue Share (In Rs. Crores) (1)	35.39	56.12	85.38	97.75	107.23	381.87
Rental (In Rs. Crores) (2)	0.75	0.79	0.83	0.87	0.91	4.14
Duty Free Revenues (c) = (1)+ (2)	36.14	56.91	86.20	98.62	108.14	386.01
Forex						
Forex services Revenue (d)	14.69	18.53	19.46	20.14	20.06	92.89
Plaza Lounge						
Plaza Lounge Revenue (e)	14.29	21.37	31.15	35.83	39.65	142.29
Retail Income						
Retail MAG Income (1)	35.19	45.98	67.79	77.44	86.30	312.70
Retail Revenue Share (2)	2.18	2.84	4.19	4.79	5.34	19.35
Retail Revenue (f) = (1) + (2)	37.37	48.82	71.98	82.23	91.64	332.04

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Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Food & Beverage						
Food & Beverage Revenue (g)	31.78	41.52	61.21	69.93	77.93	282.37
Rentals						
Rentals (Excl. CSB and other non-airport revenues) (1)	54.42	57.14	60.00	63.00	66.15	300.70
Fuel Station (2)	0.30	0.31	0.33	0.34	0.36	1.64
Rentals from additional space post-expansion (3)	0.00	2.00	2.10	2.21	2.32	8.62
Revenue from Rentals (h) = sum (1) to (3)	54.72	59.45	62.43	65.55	68.82	310.97
Advertisement & Promotions						
Revenue Share (1)	21.04	28.61	35.91	41.32	47.54	174.42
Promotions (2)	0.05	0.06	0.07	0.09	0.10	0.37
Advertisement Revenue (i) = (1) + (2)	21.09	28.67	35.99	41.40	47.64	174.79
Radio Taxi						
Radio Taxi (j)	7.43	9.10	10.74	12.27	13.67	53.22
Car Parking Charges						
Car Parking charges (k)	76.29	93.45	110.22	125.91	140.33	546.19
Public Admission Fee						
Public Admission fee (l)	4.56	5.95	8.78	10.03	11.17	40.49
Miscellaneous Income						
Miscellaneous Income (m)	12.05	12.05	12.05	12.05	12.05	60.25
Gross Total (sum of a to m)	535.82	652.81	801.09	889.89	966.85	3846.45
PBT for Non-Aeronautical Revenues (n)	287.65	317.70	361.53	581.47	631.68	2180.04
Cross Subsidisation of NAR = (n) * 30%	86.29	95.31	108.46	174.44	189.50	654.01

Source: HIAL MYTP for the Third Control Period

8.2 **Authority's Examination regarding Non-Aeronautical Revenues for the Third Control Period**

- 8.2.1 The Authority has examined the assumptions and submissions made by HIAL pertaining to the traffic for the Third Control Period
- 8.2.2 The Authority has further taken into account the revised submission made by HIAL for FY21 wherein HIAL has provided the actual numbers for 9MFY21 and projections for Q4FY2 received on 08.02.2021. The Authority has considered this submission for the purpose of true up for FY21 for the Second Control Period.
- 8.2.3 The Authority has linked passenger growth rates as well as the ATM growth rates as revised in view of the current macro-economic scenario and overall slowdown in the aviation industry. The details on the growth rates adopted are explained in chapter 5 of this consultation paper. These growth rates are used as modified growth drivers for the purpose of projecting the individual non-aeronautical revenue stream. The relevant growth rates proposed by the Authority are summarised in the below table:

Table 115: Traffic Growth Rates proposed to be considered by the Authority for the Third Control Period

Particulars	2022	2023	2024	2025	2026
Growth in Total Pax	78.14%	43.82%	11.55%	9.05%	5.47%
Growth in Domestic Pax	66.10%	42.86%	8.00%	9.26%	5.08%
Growth in International Pax	234.59%	50.00%	33.33%	8.00%	7.41%
ATM Growth	43.57%	43.59%	10.71%	9.10%	5.38%
Cargo Volume Growth	23.09%	6.00%	11.72%	9.73%	7.11%

- 8.2.4 The Authority has looked at the submission made by HIAL with regards to the inflation. The Authority proposes to consider HIAL's proposal of WPI inflation as 4.60% for the Third Control Period. Further, the WPI would be trued up during the Fourth Control Period based on the actual index applicable for the Third Control Period.
- 8.2.5 The Authority has carefully examined the HIAL's submission regarding various non-aeronautical revenue streams for the Third Control Period and made the following observations:

ATM Growth Linked Revenue Streams

- 8.2.6 As part of its submission, HIAL has treated revenues from Cargo, Ground Handling, Fuel farm, Ground Power Unit, ICT services (CUTE, CUSS, BRS & IT) as non-aeronautical in nature. The Authority would like to re-iterate the stance taken in order no 34/2019-20 and as discussed in Paras 3.2.3 – 3.2.9 of this Consultation Paper, wherein these revenues were treated as aeronautical in nature and proposes to extend the treatment to the Third Control Period as well.

Fuel Farm

- 8.2.7 The Authority has examined the submissions made by HIAL regarding the revenue from Fuel farm services. The Authority is aware that the fuel throughput charges have been discontinued for all major airports. In the order no 34/2019-20, the Authority had formed the view that some compensation has to be paid to the airport operator to compensate for the revenue lost. Hence,

the Authority proposes to consider such revenue as aeronautical in nature in consonance with earlier decisions of the Authority as detailed in paras 3.2.3 – 3.2.9 of this Consultation Paper.

- 8.2.8 Further, HIAL has proposed to introduce either fuel access charge of Rs. 670/KL or equivalent charge per pax w.e.f. April 1, 2021 in addition to fuel infrastructure charges. However, this charge is similar to fuel throughput charges and as per MoCA communication via letter F.No. AV-13030/216/2016 ER dated 8th Jan 2020 and the Authority's letter AERA/20015/FT/2010-11/VOL. II, these charges have been discontinued, the Authority proposes to disallow the fuel access charges as a separate component.

Ground Handling

- 8.2.9 The Authority had looked at HIAL's submissions regarding revenues from ground handling. In line with the Order no 34/2019-20, the Authority proposes to treat revenues from ground handling services as aeronautical in nature as detailed in paras 3.2.3 – 3.2.9 of this Consultation Paper and consider the inflation rates and ATM growth rates as the drivers for the projections.

Ground Power unit

- 8.2.10 Similar to the treatment of revenues from ground handling services, the Authority proposes to treat revenues from ground power unit as aeronautical in nature as detailed in paras 3.2.3 – 3.2.9 of this Consultation Paper and consider the inflation rates and ATM growth rates as the drivers for the projections.

ICT Revenues (CUTE, CUSS, BRS & IT)

- 8.2.11 The Authority examined HIAL's submission pertaining to ICT revenues and proposes to treat the same as aeronautical in nature as detailed in table 6 of this Consultation Paper. Further, the Authority accepts HIAL's proposal to project the ICT revenues with departing passenger growth rates.

Passenger Growth Linked Revenue Streams

In-flight kitchen

- 8.2.12 The Authority has examined HIAL's submission regarding revenues from In-flight kitchen. The Authority had observed that the reduction in revenues on account of COVID 19 pandemic would be captured by the passenger growth rate itself. Further, the Authority proposes to consider inflation and total passenger growth as the revenue drivers for forecasting the revenues from inflight kitchen service. In case of the lease rentals from the in-flight kitchen, the Authority proposes to increase the same at annual increase rate in rentals/MAG at 5% for the remaining years.

Retail and Food & Beverages (F&B) Revenues

- 8.2.13 The Authority has examined HIAL's submission pertaining to revenues from retail and Food & Beverages (F&B) services and proposes to consider inflation and total passenger growth rate as the revenue drivers for projecting the said revenues. As the reduction in revenues on account of COVID 19 pandemic would be captured by the passenger growth rate itself, hence the Authority proposes not to consider the negative growth in revenues over FY20 levels by 25% in FY22 and 20% in FY23 over and above the projections based on traffic growth rates as per HIAL's submission.

Plaza Lounge / Airport Lodge

- 8.2.14 The Authority has also examined HIAL's proposal regarding revenues from Plaza lounge/Airport lodge. Similar to the treatment of the retail and Food & Beverages (F&B) services, the Authority proposes not to consider the negative growth in revenues over FY20 levels by 25% in FY22 and

20% in FY23 over and above the projections based on traffic growth rates and instead proposes to consider inflation and international passenger growth rate as the revenue drivers.

Car Park and Radio Taxi

- 8.2.15 The Authority has examined HIAL's submission pertaining to revenues from car park and radio taxi services. In this regard, the Authority proposes to accept HIAL submission to link the revenues to total passenger traffic growth rate and inflation for projections for FY22-26.

International Pax Growth Linked Revenue Streams

Duty Free

- 8.2.16 The Authority has examined HIAL's submission regarding revenues from duty free services. The Authority proposes not to consider the decrease in SPP @ 25% in FY22 and 20% in FY23 over FY20 SPP as per HIAL's submission as the duty free sales is linked to international passenger growth rate and additional decrease in SPP is not justified.

Forex Services

- 8.2.17 The Authority has examined HIAL's submission pertaining to the revenues from forex services. The Authority appreciates the use of digitization and plastic money. Further, the Authority proposes to consider the inflation rates and international pax growth rates as the drivers for the projection of revenues from forex services for FY22-26.

Public Admission Fee

- 8.2.18 The Authority has examined HIAL's submission pertaining to public admission fee and proposes to accept HIAL's proposal to project the revenues on the basis of international passenger growth rate and inflation rates. The Authority would like to highlight that HIAL has submitted that the international pax growth has been considered as the growth driver for the projection of public admission fee, however, upon detailed scrutiny the Authority observed that the growth driver as captured in the tariff financial model was wrongly linked to total passenger growth rates. The same has been corrected by the Authority to this effect and considered for purpose of the Third Control Period.

Cargo Volume Growth Linked Revenue Stream

Cargo Revenues

- 8.2.19 The Authority has examined HIAL's submission pertaining to cargo revenues and proposes to consider the revised cargo traffic growth rates as the revenue driver. Further, in line with the order no 34/2019-20, the Authority proposes to treat revenue from cargo services as aeronautical in nature.

Others

Rental Revenues

- 8.2.20 The Authority has examined HIAL's submission pertaining to rental revenues and proposes to accept HIAL's submission on the same. However, in line with the order no 34/2019-20 and the justifications provided therein, the Authority proposes to treat the incidental income from the New Office Building, Township and Site Office Building as part of non-aeronautical revenues.

Advertisement and Promotions

- 8.2.21 The Authority has examined HIAL's submission pertaining to revenues from advertisement and promotions. In this regard, the Authority proposes not to consider HIAL's proposal to increase by 30% annually in FY22 and FY23 which tapers to 20% in FY24 and 10% thereon for the rest of the period. The Authority proposes to consider inflation rates and total passenger growth rate as revenue driver for the purpose of forecasting the said revenues.

Other Revenue Streams (Miscellaneous Income)

- 8.2.22 The Authority has examined HIAL's submission pertaining to miscellaneous income and proposes to use the annual escalation rates as the growth driver for all the years.

Other non-operating interest income

- 8.2.23 The Authority observed the financial statements of HIAL and examined the details of the other non-operating income heads. The details are summarized in the below table.

Table 116: Summary of the broad heads of the other non-operating income

Particulars
○ Interest Income on ● On bank deposits, commercial papers and loans to subsidiaries ● On others ● On delayed payments from customers ○ Dividend income on investment in subsidiaries ○ Profit on sale of current investments (other than trade) ○ Exchange difference (net) ○ Gain on account of fair valuation of interest rate swap ○ Provisions no longer required, written back ○ Profit on sale of asset (net) ○ Other non-operating income

- 8.2.24 The Authority has proposed to treat the dividend income on investment in subsidiaries under the regulatory purview on the basis of the nature of service being provided by the subsidiary. Similarly, the Authority proposes to consider other heads as non-aeronautical in nature.
- 8.2.25 The dividends and other non-operating income have been forecasted at the levels of FY20 for the remaining periods and shall be trued up as per actuals.
- 8.2.26 As discussed in the above sections, the Authority proposes to treat revenues from Cargo, Ground Handling, Fuel farm, Ground Power Unit, ICT services (CUTE, CUSS, BRS & IT) as aeronautical in nature.
- 8.2.27 Further, as discussed in the above sections, the Authority notes that the incidental revenue from the New Office Building, Township and Site Office Building is being netted off from the operating expenditure. However, the Authority proposes to modify this treatment and allocate these rental revenues as follows:
- Revenue from NOB and SOB – Non-aeronautical
 - Revenue form Township – Common to be allocated based on critical staff occupancy ratio in FY21
- 8.2.28 The Authority also proposes to treat revenue from real estate development as non-aeronautical in nature.
- 8.2.29 In the matter of cross subsidisation methodology, the Authority proposes to consider gross non-aeronautical revenues instead of PBT of non-aeronautical revenues as proposed by HIAL The Authority proposes to continue with its previous stance as discussed in Para 3.2.20 of this Consultation Paper.
- 8.2.30 The Authority also observed that HIAL has treated income arising out of reversal of loss of inventory as income outside the regulatory purview. Similar to the treatment in the Second Control Period, the Authority proposes to treat the said income as aeronautical in the tariff determination of HIAL for the Third Control Period
- 8.2.31 The Authority also noted that HIAL has netted off the concession fee paid to the Government of India from the non-aeronautical revenues before computing the 30% cross subsidy from the non-aeronautical operations. The Authority understands that in a shared till mechanism, the entire

non-aeronautical revenue need to be considered for cross subsidy. Hence, the Authority proposes not to net-off the concession fee while computing the amount of cross subsidy.

8.2.32 The non-aero revenues as proposed by the Authority are summarised in the below table:

Table 117: Non-Aeronautical revenues proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
In-Flight Kitchen						
Revenue Share (i)	7.62	11.47	13.38	15.26	16.83	64.56
Lease Rentals (ii)	1.66	1.74	1.83	1.92	2.02	9.17
IFK Revenues (a) = (i) + (ii)	9.28	13.21	15.21	17.18	18.85	73.72
Duty Free						
Revenue Share (In Rs. Crores) (i)	25.27	43.56	63.81	71.87	80.36	284.87
Rental (In Rs. Crores) (ii)	0.99	1.04	1.09	1.15	1.21	5.48
Duty Free Revenues (b) = (i)+ (ii)	26.26	44.60	64.90	73.02	81.57	290.36
Forex						
Forex services Revenue (c)	5.67	8.90	12.41	14.02	15.75	56.73
Plaza Lounge						
Plaza Lounge Revenue (d)	14.09	22.11	30.84	34.83	39.14	141.01
Retail Income						
Retail MAG Income (i)	23.37	35.16	41.02	46.79	51.62	197.96
Retail Revenue Share (ii)	12.17	18.31	21.37	24.37	26.89	103.11
Retail Revenue (e) = (i) + (ii)	35.54	53.47	62.39	71.16	78.51	301.06
Food & Beverage						
Food & Beverage Revenue (f)	24.29	36.54	42.63	48.63	53.65	205.74
Rentals						
Rentals (Excl. CSB and other non-airport revenues) (i)	58.65	61.58	64.66	67.89	71.29	324.07
Township Non-Aero (ii)	0.13	0.14	0.15	0.15	0.16	0.74

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Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
NOB (iii)	6.08	6.38	6.70	7.04	7.39	33.60
SO (iv)	1.37	1.44	1.51	1.59	1.66	7.57
Rentals from additional space post-expansion (v)	0.00	2.00	2.10	2.21	2.32	8.62
Revenue from Rentals (g) = sum (i) to (v)	66.23	71.54	75.12	78.88	82.82	374.59
Advertisement & Promotions						
Revenue Share (i)	22.50	33.85	39.49	45.04	49.69	190.57
Promotions (ii)	0	0	0	0	0	0.00
Advertisement Revenue (h) = (i) + (ii)	22.50	33.85	39.49	45.04	49.69	190.57
Radio Taxi						
Radio Taxi (i)	4.61	6.94	8.09	9.23	10.19	39.06
Car Parking charges						
Car Parking charges (j)	40.33	60.66	70.78	80.74	89.07	341.59
Public Admission Fee						
Public Admission Fee (k)	0.62	0.98	1.36	1.54	1.73	6.22
Miscellaneous Income						
Miscellaneous Income (l)	8.59	8.99	9.40	9.83	10.29	47.10
Incidental Income						
Interest & Dividend from Duty Free Subsidiary (m)	134.55	134.55	134.55	134.55	134.55	672.73
Real Estate Income						
Income from CPD (n)	8.76	9.20	9.66	10.14	10.65	48.41
Total Non-Aeronautical Revenue (o) = (sum of a to n)	401.33	505.52	576.83	628.79	676.43	2788.91
30% of Non-Aeronautical Revenue (30%) * (o)	120.40	151.66	173.05	188.64	202.93	836.67

8.3 Authority's Proposal regarding Non-Aeronautical Revenues for the Third Control Period

Based on the material before it and its analysis, the Authority proposes:

- 8.3.1 To treat revenues from Cargo, Ground Handling, Fuel farm, Ground Power Unit, ICT services (CUTE, CUSS, BRS & IT) as aeronautical in nature.
- 8.3.2 To treat other income comprising of interest income and dividend income under the regulatory purview on the basis of the nature of service.
- 8.3.3 To treat revenue from real estate development as non-aeronautical in nature.
- 8.3.4 To treat gross non-aeronautical revenues for cross subsidisation purpose instead of PBT of non-aeronautical revenues.
- 8.3.5 To consider Non-Aeronautical Revenues as set out in Table 117 above.
- 8.3.6 To true up non-aeronautical revenues for the current control period, at the time of determination of tariff for the Fourth Control Period.

9. WEIGHTED AVERAGE COST OF CAPITAL (WACC) FOR THE THIRD CONTROL PERIOD

9.1 HIAL's Submissions regarding Weighted Average Cost of Capital for the Third Control Period

Cost of Equity

- 9.1.1 HIAL has submitted that the equity investment of Rs. 378 Crores towards the initial project cost shall continue as it is as there are no plans of any additional equity investment from the promoters into HIAL.
- 9.1.2 In line with the recommendation of the CRIS study, HIAL has considered the average of the range of cost of equity recommended by CRIS for the calculation of WACC/Fair Rate of Return (FRoR) for the Third Control Period which is **22.07%**
- 9.1.3 HIAL as part of the tariff submission for the Third Control Period has the projected the equity base including the expected reserves and surplus as shown in the table below:

Table 118: Equity Base Submitted by HIAL for the Third Control Period as per the Financial Model

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026
Equity Share Capital (a)	378.00	378.00	378.00	378.00	378.00
Reserves & Surplus (if positive) (b)	2779.56	4421.40	5850.93	7602.87	9635.42
Total Equity (c) = (a) + (b)	3157.56	4799.40	6228.93	7980.87	10013.42

Cost of Debt

- 9.1.4 HIAL has raised USD 350 million through bond issuance in October 2017 towards refinancing of whole of Rupee Term Loan and External Commercial Borrowings at a coupon of 4.25% payable semi-annually with a tenor of 10 year bullet repayment falling due in Oct 2027. Out of USD 350 million issue proceeds, USD 272 million is used for refinancing of existing Rupee Loan and ECB and remaining USD 78 million is utilized towards part funding of 34 MPPA expansion. In order to cover the risk of coupon and principal, the company has availed cross currency swap and the effective cost including all-in coupon and the hedge cost is 8.90%.
- 9.1.5 Additionally, HIAL has raised USD 300 Mn through offshore bonds in April 2019 at a coupon of 5.375% payable semi-annually with a tenor of 5 year bullet repayment falling due in April 2024. Total loan raised in rupee terms was Rs. 2067 Crores at an exchange rate of Rs 68.9/USD on the date of drawdown. In order to cover the risk of coupon and principal, the company has availed appropriate hedge instruments in the form of call spread and coupon only swap and the effective cost including all in coupon cost and the hedge cost is 10.27%.
- 9.1.6 HIAL has also considered 10.50% as the cost of debt for a Rupee Term Loan amount of Rs. 2,453.90 Crores proposed to fund the balance of expansion capex, metro funding, runway re-carpeting with AGL works, and general capex. The tenure of this RTL is 17 years with a ballooned up repayment structure as given below:

Table 119: Repayment Schedule of RTL submitted by HIAL for the Third Control Period as per MYTP

RTL-Repayment Schedule	2022	2023	2024	2025	2026
% Repayment	0%	0%	1%	2%	3%

9.1.7 HIAL has considered the existing Interest Free Loan with 0% cost as part of the total debt. The IFL has to be repaid in 5 equal instalments from the 16th anniversary of the COD i.e. 23rd March 2024. HIAL has considered repayment of IFL in the forecast of debt.

9.1.8 The details of the debt outstanding along with the cost of debt as submitted by HIAL is as shown in the table below:

Table 120: Details of Debt Outstanding along with Cost of Debt submitted by HIAL for the Third Control Period as per MYTP

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026
Average Term Loan Balance (a)	2881.12	4340.53	6021.71	4570.51	4521.43
Average Interest Free Loan Balance (b)	315.05	315.05	283.55	220.54	157.53
Cost of Debt (c)	9.66%	9.78%	9.88%	9.75%	9.74%
Cost of IFL (d)	0.0%	0.0%	0.0%	0.0%	0.0%
Average Cost of Debt incl. IFL $\{[(a) * (c) + (b) * (d)] / [(a) + (b)]\}$	8.70%	9.11%	9.44%	9.30%	9.41%

Weighted Average Cost of Capital (WACC)

9.1.9 HIAL for the purpose of calculation of WACC has considered weighted average gearing for the Third Control Period with as Debt: Equity ratio of 48% : 52% as proposed by the Authority in DIAL's Third Control Period Consultation Paper no 15/ 2020-21 dated 9th June 2020 based on the independent study conducted by the Authority for computing cost of equity for DIAL.

HIAL's submission pertaining to WACC calculations is summarized below:

Table 121: WACC details submitted by HIAL for the Third Control Period as per MYTP

Particulars	2022	2023	2024	2025	2026
Cost of Debt including IFL (refer table 120)	8.70%	9.11%	9.44%	9.30%	9.41%
Cost of Equity	22.07%	22.07%	22.07%	22.07%	22.07%
Individual Year Gearing	48.00%	48.00%	48.00%	48.00%	48.00%
WACC/FRoR Calculation					
Weighted Average Gearing	48.00%				
Weighted Average cost of debt	9.24%				
Cost of Equity	22.07%				
FRoR (WACC)	15.91%				

Source: HIAL MYTP for the Third Control Period

- 9.1.10 Basis the above and the previous submissions related to COE and cost of debt, the FROR/WACC as submitted by HIAL is **15.91%**.

9.2 Authority's Examination regarding Weighted Average Cost of Capital for the Third Control Period Cost of Equity

- 9.2.1 The Authority in its order no. 34/2019-20 chapter 6, para 6.61, mentioned that it would be conducting a study to determine an appropriate Cost of Equity for select airports; and is likely to extend the exercise to multiple other airports including HIAL. Hence, depending on the recommendations proposed in the study, the Authority may consider revising the cost of equity of HIAL in consultation with stakeholders at the time of tariff determination for the Third Control Period.
- 9.2.2 Consequently, the Authority has commissioned a separate independent study for evaluation of cost of capital for HIAL for the Third Control Period and the study was entrusted to IIM Bangalore. The independent study has drawn from the international experience of airports having comparability to HIAL in terms of revenue till, ownership structure and scale of operations and has also studied the regulatory framework of other regulators for the study. The summary of the independent study is given at Annexure 3. The independent study is attached as an Appendix 3 to this consultation paper. The independent study has recommended the Cost of Equity of **15.17%** which is arrived at as shown in the table below:

Table 122: Computation of Cost of Equity as per the independent study

Variables	Amount/Figures
Asset Beta	0.573552
Gearing Ratio (D/E)	0.9231
Gearing Ratio (D/D+E)	48.00%
Equity Beta	0.9442
Risk Free Rate	7.56%
Equity Risk Premium	8.06%
Cost of Equity	15.17%

- 9.2.3 The independent study has computed the Cost of Equity at 15.17% by using Capital Asset Pricing Model and using a notional Debt : Equity ratio of 48%:52%. While the study has used a nominal debt rate of 10.05% for illustrative purpose to arrive at the Weighted Average Cost of Capital, the Authority proposes to use the projected cost of debt for the purpose of calculation of WACC for tariff determination for the Third Control Period
- 9.2.4 The Authority proposes to adopt the recommendations of the independent study pertaining to cost of equity in the tariff determination for the Third Control Period.

Cost of Debt

- 9.2.5 The Authority has looked at the submission made by HIAL with regards to cost of debt. As per chapter 4, para 4.3.2 the Authority has accepted HIAL submission regarding raising of USD 350 million bond at an all-inclusive coupon (incl. hedge cost) rate of 8.90% and USD 300 million at an all-inclusive (incl. hedge cost) at 10.27%.
- 9.2.6 The Authority has also noted that HIAL has considered 10.50% as the cost of debt for a Rupee Term Loan amount of Rs. 2,453.90 Crores proposed to fund the balance of expansion capex,

metro funding, runway re-carpeting with AGL works, and general capex. The Authority accepts this cost of debt as it is lower than the cost of debt approved by the Authority for funding of balance expansion capex which was capped at 10.70% as per para 6.27 of order No. 34/2019-20.

9.2.7 However, the Authority in order to ensure that the operator makes efficient financing arrangements proposes to cap the cost of debt towards expansion and other works to 10.50% during the true up of the Third Control Period. The authority is of the view that this rate is manageable given the market scenario and the MCLR of major PSU banks.

9.2.8 The Authority has reworked the weighted cost debt to calculate new cost of debt as shown in the table below:

Table 123: Effective Cost of Debt proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026
Term Loan					
Opening Balance (a)	3849.03	4106.96	4874.94	3171.50	3148.42
Closing Balance (b)	4106.96	4874.94	5238.50	3148.42	3109.95
Average outstanding for the year (c) = {(a) + (b)}/2	3978.00	4490.95	5056.72	3159.96	3129.18
Interest Free Loan					
Opening Balance (d)	315.05	315.05	315.05	252.04	189.03
Closing Balance (e)	315.05	315.05	252.04	189.03	126.02
Average outstanding for the year (f) = {(d) + (e)}/2	315.05	315.05	283.55	220.54	157.53
Average Debt (g) = (c) + (f)	4293.05	4806.00	5340.26	3380.49	3286.71
Average Cost of Debt incl. IFL (h)	8.67%	8.43%	8.98%	8.97%	9.15%
Effective Cost of Debt (i) = {(g) * (h)} / (sum of g)	8.82%				

9.2.9 The current methodology, as adopted by HIAL, for computation of the gearing is based on the use of notional ratios instead of actuals. Further, the use of notional gearing ratio does not reflect the true financial risk that HIAL is bearing and hence be compensated for during the true up of the Third Control Period.

9.2.10 The Authority has proposed to consider WACC as **12.12%** for the Third Control Period based on the above mentioned cost of debt of **8.82%** and cost of equity of **15.17%** as suggested by the

independent study and considering a notional gearing ratio of 48%: 52% as suggested by the independent study which is same as HIAL's submission for gearing ratio.

9.3 Authority's Proposals regarding Weighted Average Cost of Capital for the Third Control Period

Based on the material before it and based on its analysis, the Authority has the following proposals regarding Weighted Average Cost of Capital:

- 9.3.1 The Authority proposes to consider cost of equity as 15.17% as per the outcome of the independent study.
- 9.3.2 The Authority proposes to consider cost of debt as 8.82% based on its assessment of the cost of Rupee Term Loan and the effective cost of the bonds already raised by HIAL.
- 9.3.3 The Authority proposes to consider a notional debt equity ratio of 48%:52% as suggested by the independent study.
- 9.3.4 The Authority proposes to consider the Fair Rate of Return/Weighted Average Cost of Capital as **12.12%** for the Third Control.
- 9.3.5 The Authority proposes to true up actual value of cost of debt subject to a cap of 10.50%.

10. TAXATION FOR THE THIRD CONTROL PERIOD

10.1 HIAL's Submissions regarding Taxation for the Third Control Period

- 10.1.1 HIAL in its submission has computed MAT and normal tax as per the law and has also considered the carried forward business losses and unabsorbed depreciation as per Income Tax Act.
- 10.1.2 HIAL, in its MYTP submission, has computed the income tax on aeronautical income as per the prevailing Income Tax laws and rules. One of the key assumptions is that the aeronautical segment has been treated as a standalone entity with its own tax computations. In line with the same consideration, all items excluded from the calculations of the regulatory building blocks have been excluded from the regulatory tax computation.
- 10.1.3 HIAL submitted that it has computed aeronautical tax considering 30% of non-aero PBT as part of aeronautical P&L.
- 10.1.4 Tax Projections submitted by HIAL for the Third Control Period are as follows:

Table 124: Aeronautical Taxes Submitted by HIAL for the Third Control Period as per MYTP

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026
Revenue from Aeronautical Services (a)	2610.76	3197.81	3771.72	4308.70	4801.99
Cross subsidy Non-Aero (b)	86.29	95.31	108.46	174.44	189.50
Concession Fee (c)	104.43	127.91	150.87	172.35	192.08
Total Aeronautical Revenue (d) = (a) + (b) – (c)	2592.63	3165.20	3729.31	4310.79	4799.41
Aero Expense (e)	622.00	728.01	900.63	1003.66	1111.87
EBITDA (f) = (d) – (e)	1970.63	2437.20	2828.68	3307.13	3687.54
Depreciation (g)	220.95	370.56	530.79	600.74	612.79
Interest (h)	187.16	293.18	416.22	461.99	476.44
Aero PBT (i) = (f) – (g) – (h)	1562.52	1773.45	1881.66	2244.40	2598.31
Tax (i) * tax rate	272.97	397.48	612.94	747.13	893.32

Source: HIAL MYTP for the Third Control Period

10.2 Authority's Examination regarding Taxation for the Third Control Period

- 10.2.1 The Authority has looked at HIAL's submission regarding aeronautical taxes and has the following observations.
- 10.2.2 The Authority noted that HIAL has considered the 30% of non-aeronautical PBT to compute the aeronautical tax. The fact that a part of non-aeronautical revenues is used for cross-subsidization as per the hybrid till mechanism does not change the nature of such revenues to aeronautical. Cross subsidization as per hybrid till mechanism is done in order to reduce tariff pressure on passengers and to incentivize the airport operator to make effective investments in non-aeronautical revenue generating sources.
- 10.2.3 The consideration of 30% non-aeronautical PBT for computation of aeronautical tax will increase tax reimbursement beyond the requirement pertaining to aeronautical services leading to an artificial tax benefit. The same could lead to the effective cross subsidy benefit being passed on

to the airport user being less than 30% to the extent of the artificial tax benefit the airport operator receives in the event of considering 30% non-aeronautical PBT as part of revenue from aeronautical services.

10.2.4 Therefore, the Authority is of the view that:

- a) 30% non-aeronautical PBT should not be treated as a subsidy for the airport operator as the airport operator has already earned it from non-aeronautical services.
- b) Consideration of 30% non-aeronautical PBT as part of revenues from aeronautical services would result in undeserved enrichment to the airport operator effectively reducing the cross-subsidy benefit to the airport user from the present 30% of non-aeronautical revenues.
- c) Further, this issue has been decided by the Authority and the details may be seen in Chapter 8 of DIAL Tariff Order No. 57/2020-21 dated 30 December 2020 for the Third Control Period.

10.2.5 The Authority, in line with its decision for other airports, proposes to not consider 30% of non-aeronautical PBT while computing aeronautical taxation for the Third Control Period.

10.2.6 The Authority notes that the allocation of the total taxes incurred by HIAL into Aeronautical and Non-Aeronautical is essential.

10.2.7 The Authority notes that HIAL has allocated its taxation between aeronautical and non-aeronautical by preparing a separate aeronautical profit & loss statement to compute taxes for its aeronautical operations.

10.2.8 The Authority proposes to allocate taxes after considering a non-aeronautical profit and loss account in addition to the aeronautical profit & loss account used by HIAL. The Authority proposes to allocate HIAL's taxes (as per the aggregate profit & loss account) between aeronautical and non-aeronautical components based on the ratio of taxes as per both aeronautical and non-aeronautical profit & loss accounts in accordance to the order no. 34/2019-20.

10.2.9 The Authority has computed revised taxes by incorporating the abovementioned analysis. The Authority has computed revised Aeronautical Taxes for the Third Control Period by preparing profit and loss statement for both Aeronautical and Non-Aeronautical services. Based on the revised methodology, the Authority proposes to consider Aeronautical taxes as presented below:

Table 125: Aeronautical Taxes proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Aeronautical PBT	-69.42	-52.85	-181.54	47.92	149.74	-106.15
Aeronautical tax (a)	0.00	0.00	0.00	8.37	26.16	34.53
Non-Aeronautical PBT	285.98	354.38	385.90	441.66	483.95	1951.86
Non-Aeronautical tax (b)	81.10	102.80	113.20	131.87	148.41	577.38
PBT for HIAL as a standalone entity	216.58	301.56	204.40	489.62	633.75	1845.91
Tax for HIAL as a standalone entity (c)	37.84	52.68	35.71	85.54	110.72	322.48

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Ratio for allocation of taxes to be incurred by HIAL as a standalone entity (d) = $\{a/(a + b)\}$	0.00%	0.00%	0.00%	5.97%	14.99%	
Aeronautical portion of the total tax to be considered for tariff determination (d*c)	0.00	0.00	0.00	5.11	16.59	21.70

10.3 Authority's Proposal regarding Taxation for the Third Control Period

Based on the material before it and its analysis, the Authority proposes the following:

- 10.3.1 The Authority proposes to determine aeronautical taxes for the Third Control Period by allocating total taxes as per the aggregate profit & loss account between aeronautical and non-aeronautical components based on the ratio of taxes as per the aeronautical and non-aeronautical profit and loss accounts.
- 10.3.2 To consider Aeronautical Taxes as set out in Table 125 above.

11. INFLATION

11.1 HIAL's Submissions regarding Inflation for the Third Control Period

- 11.1.1 For the purpose of inflation, HIAL has considered the RBI survey of professional forecasters on macroeconomic indicators – result of the 63rd round. The results of which can be seen in the table below:

Table 126: Inflation detailed submitted by HIAL for the Third Control Period as per MYTP (results of Round 63 of the survey)

	WPI All Commodities				WPI Non-food Manufactured Products			
	Mean	Median	Max	Min	Mean	Median	Max	Min
Q4:2019-20	2.3	2.4	2.8	1.6	-0.5	-0.8	1.2	-1.5
Q1:2020-21	1.6	1.8	3.0	-1.3	-0.1	-0.2	1.6	-1.8
Q2:2020-21	2.4	2.5	3.2	0.0	1.0	1.0	2.0	-0.7
Q3:2020-21	2.3	2.5	3.5	-0.2	1.7	1.8	2.5	0.4
Q4:2020-21	2.3	2.2	4.6	0.8	1.8	1.8	3.0	0.7

- 11.1.2 HIAL has further discussed about past inflation trends observed in a crisis scenario. HIAL has drawn comparison with financial crisis of 2008, wherein inflation dropped to 3.9% in FY10, was in the range of 7.4-9.6% annually for the next three years and eventually 6% in 2014. HIAL states that it is a general phenomenon that can be observed in a post crisis situation. In line with a similar anticipation post Coronavirus crisis, HIAL estimates that average WPI may go beyond 4.6% during the Third Control Period but has considered the inflation of 4.6% i.e. maximum for Q4:2020-21 as part of its submission.

11.2 Authority's Examination regarding Inflation for the Third Control Period

- 11.2.1 The Authority has examined the submission made by HIAL on inflation to be considered during the Third Control Period.
- 11.2.2 The Authority has noted that HIAL has considered max for WPI All commodities Q4:2020-21 from the RBI survey round 63 as the inflation for the Third Control Period. The Authority proposes to consider HIAL's submission regarding inflation to be considered for the Third Control Period.

11.3 Authority's Proposal regarding Inflation for the Third Control Period

Based on the material before it and its analysis, the Authority proposes the following:

- 11.3.1 The Authority proposes to consider the max WPI for Q4:2020-21 of 4.6% based on the RBI survey of professional forecasters on macroeconomic indicators – 63rd round.

12. QUALITY OF SERVICE

12.1 HIAL's Submissions regarding Quality of Service for the Third Control Period

HIAL has not made any submissions related to Quality of Service as part of its MYTP submission for the Third Control Period.

12.2 Authority's Examination regarding Quality of Service for the Third Control Period

- 12.2.1 The Authority vide its Order No. 34/2019-20 decision no. 12.a. had decided that HIAL shall ensure that service quality at RGI Airport, Hyderabad is in a manner that conforms to the performance standards as indicated in the Concession Agreement over the Second Control Period.
- 12.2.2 Further the Authority noted that Section 9 of the Concession Agreement for RGI Airport, Hyderabad lays down the performance standards to be followed in respect of the airport. The criteria used to measure the Airport's performance are the IATA Global Airport Monitor service standards set out in Schedule 9, Part 2 or such criteria as may be mutually agreed upon from time to time.
- 12.2.3 The Authority would further like to re-iterate that due to the presence of service quality related provisions in the Concession Agreement, there was no need for a separate rebate mechanism as stated in the AERA Guidelines. The scheme of performance standards as indicated in the Concession Agreement would be adequate to keep a check on the performance levels.
- 12.2.4 The Authority has assessed Airports Council International (ACI) website wherein the RGIA has constantly been adjudged one of the best airports in the world in its traffic category and the Airport Service Quality (ASQ) score has consistently improved in the past 5 years. The Authority has noted that in the past five years, RGIA has been consistently ranked as one of the top airports by the ACI in the Airport Service Quality awards in various categories (except in 2018) as can be seen in the table below;

Table 127: ASQ Score for HIAL for the period 2016-2020

Year	Category	ASQ Score	Ranking
2016	5-15 Mn	4.94	World's Best Airport by Size (5-15 Million pax category)
2017	5-15 Mn	4.94	World's Best Airport by Size (5-15 Million pax) Category
2018	15-25 Mn	4.96	-
2019	15-25 Mn	4.99	Best Airport by Size and Region (15-25 Million Pax./year in Asia Pacific Region)
2020	15-25 Mn	5.00	Best Airport by Size and Region (15-25 Million Pax./year in Asia Pacific Region)

- 12.2.5 Further, the Authority also noted that even during the year 2020 when there were several travel restrictions imposed by the Government as well as global slowdown in travel, RGIA managed to undertake the ASQ survey with the passengers at the airport and was ranked top airport in its traffic category in the Asia pacific region.
- 12.2.6 The Authority has also considered the ranking of airports by Skytrax, one of the leading ranking organizations in the aviation industry, where RGIA has been adjudged as the best regional airport both in India/Central Asia category in 2019. Hence, the Authority does not propose any

adjustment towards tariff determination of aeronautical tariff on account of service quality maintained by the airport operator.

12.3 Authority's Proposal regarding Quality of Service for the Third Control Period

Based on the material before it and its analysis, the Authority proposes the following:

- 12.3.1 The Authority proposes not to consider any adjustment in the aeronautical tariff during the Third Control Period with regards to Quality of Service.

13. AGGREGATE REVENUE REQUIREMENT (ARR) AND YIELD PER PAX (YPP) FOR THE THIRD CONTROL PERIOD

13.1 HIAL's Submissions regarding ARR and YPP for the Third Control Period

- 13.1.1 As per HIAL, it has computed the ARR and YPP in line with the rights granted by the Central Government in the Concession Agreement and the AERA guidelines for Tariff Determination.
- 13.1.2 Based on HIAL's submission for each and every building block discussed in the previous chapters HIAL has arrived at the following results of ARR and YPP calculations for the Third Control Period:

Table 128: Regulatory Building Blocks submitted by HIAL to determine ARR and YPP for the Third Control Period as per MYTP

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
RAB for tariff determination (1) {refer table 87}	2947.83	4921.53	6957.14	7553.23	7142.45	
WACC (2) {refer table 121}	15.91%	15.91%	15.91%	15.91%	15.91%	
Return on RAB (i) = (1) * (2)	469.07	783.14	1107.05	1201.90	1136.54	4697.69
Operating Expense (ii) {refer table 107}	622.00	728.01	900.63	1003.66	1111.87	4366.17
Concession Fee (iii) {refer table 107}	104.43	127.91	150.87	172.35	192.08	747.64
Depreciation (iv) {refer table 86}	220.95	370.56	530.79	600.74	612.79	2335.83
Taxes (v) {refer table 124}	272.97	397.48	612.94	747.13	893.32	2923.85
Cross-Subsidisation of NAR (vi) {refer table 114}	86.29	95.31	108.46	174.44	189.50	654.01
Aggregate Revenue Requirement (a) = {sum of (i) + (ii) + (iii) + (iv) + (v) – (vi)}	1603.13	2311.78	3193.83	3551.34	3757.09	14417.17
PV of True-Ups (b) {refer table 61}	3035.28					3035.28
Discounting Factor (c)	0.93	0.80	0.69	0.60	0.51	
PV of Overall Aggregate Revenue Requirement (d) = {(a) * (c)} + (b)	4524.61	1852.85	2210.16	2117.63	1932.76	12638.01
Actual/Projected Revenue {refer table 124} (e)	2610.76	3197.81	3771.72	4308.70	4801.99	18690.97
PV of Actual/Projected Revenue (f) = (e) * (c)	2425.44	2562.98	2610.07	2569.23	2470.29	12638.01
Billable passengers	20.21	23.67	26.69	29.15	31.06	130.78
Yield per Passenger (excluding transfer and infants passenger)	1300.04	1359.84	1422.39	1487.82	1556.26	

13.1.3 HIAL has requested the Authority to allow a yield of Rs. 1300.04 per passenger in tariff year 1 w.e.f April 1 2021 to be increased by WPI @ 4.6% p.a during the subsequent 4 years of the Third Control Period, to be recovered through the aeronautical charges.

13.1.4 Further HIAL has requested the Authority to consider the following while computing tariff for the Third Control Period:

- Capex for capacity expansion from 12mppa to 34mppa
- Pre-Control Period Entitlements
- Forex losses as filed
- Cost of Equity be considered as 22.07%
- Cargo, Ground Handling and Fuel Farm be considered as Non-Aeronautical
- Other issues as illustrated in the previous chapters
- YPP as filed

13.2 Authority's Examination regarding ARR and YPP for the Third Control Period

13.2.1 Based on the submissions made and based on the Authority's examination on each of the submissions, the ARR and YPP as proposed to be considered by the Authority for the Third Control Period is as shown in the table below:

Table 129: Regulatory Building Blocks proposed to be considered by the Authority to determine ARR and YPP for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
Average RAB (1) {refer table 105}	2620.53	4413.34	5890.56	6190.31	5838.80	
WACC (2) {para 9.2.10}	12.12%	12.12%	12.12%	12.12%	12.12%	
Return on RAB (i) = (1) * (2)	317.63	534.93	713.98	750.31	707.70	3,024.54
Depreciation (ii) {refer table 104}	210.55	338.60	434.54	478.34	487.17	1949.20
Operating Expense (iii) {refer table 112}	365.92	450.52	532.61	576.57	606.52	2,532.15
Concession Fee (iv) {refer table 112}	30.81	45.25	52.35	59.29	65.03	252.73
Taxes (v) {refer table 125}	0.00	0.00	0.00	5.11	16.59	21.70
Less: 30% Cross-Subsidisation of NAR (vi) {refer table 117}	120.40	151.66	173.05	188.64	202.93	836.67
Gross Aggregate Revenue Requirement (a) = {(i) + (ii) + (iii) + (iv) + (v) – (vi)}	804.51	1,217.65	1,560.42	1,680.98	1,680.08	6,943.64
Over recovery of previous control periods as on 31.03.2022 (vii) {refer table 63}	-498.47					-498.47
Net Aggregate Revenue Requirement (b) = {a + (vii)}	306.04	1,217.65	1,560.42	1,680.98	1,680.08	6,445.17
PV Value Factor (c)	1.00	0.89	0.80	0.71	0.63	

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Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Total
PV of Net Aggregate Revenue Requirement (including True up) {(d) = (b) * (c)}	306.04	1,086.02	1,241.28	1,192.63	1,063.13	4,889.09
Total Pax Traffic (Million passengers) (e) {refer table 69}	14.34	20.62	23.00	25.08	26.45	109.49
Yield Per Passenger = {(d)*10} / (e)						446.52

13.2.2 The Authority noted that HIAL has not submitted the Annual Tariff Plan for the years in the Third Control Period. The Authority also notes that it would be necessary to have the individual year-wise tariff card laying down the different Aeronautical charges and the workings for the Aeronautical Revenues, in order to have a constructive stakeholder discussion.

13.2.3 HIAL is directed to submit the detailed Annual Tariff proposal and tariff rate card in line with the ARR and Yield arrived at by the Authority within 7 days of issue of the Consultation Paper, which will be reviewed and issued by the Authority.

13.3 Authority's Proposals regarding ARR and YPP for the Third Control Period

Based on the material before it and its analysis, the Authority proposes the following:

13.3.1 The Authority proposes to consider ARR and YPP for the Third Control Period as per Table 129.

13.3.2 The Authority directs HIAL to submit the detailed Annual Tariff proposal and tariff rate card in line with the ARR and Yield arrived at by the Authority within 7 days of issue of the Consultation Paper for Stakeholder's Consultation.

14. SUMMARY OF AUTHORITY'S PROPOSAL

14.1 Review of the Pre Control Period from 01.04.2008 to 31.03.2011

- 14.1.1 The Authority proposes to consider the true-up of the entire Pre Control Period from 01.04.2008 to 31.03.2011.
- 14.1.2 The Authority proposes a true up of Rs. 731.05 Crores (as on 31.03.2022) which shall be provided to the airport operator along with the proposed true up for the Second Control Period as part of the tariff determination for the Third Control Period. (Table no.3).

14.2 True up for the First Control Period

- 14.2.1 The Authority proposes to consider the treatment of various issues raised by HIAL as per table no.5 and 6 in line with AERA Act, AERA Guidelines, TDSAT orders and the Authority's orders issued from time to time.(para 3.2).
- 14.2.2 The Authority proposes not to true up any building block other than CSR expenses. Subsequently, the Authority proposes no revision in computation of RAB and depreciation (para 3.3.14 – 3.3.15), Equity and WACC (para 3.4.3), computation of tax, non-aeronautical revenue and aeronautical revenue.
- 14.2.3 The Authority proposes to use non-aeronautical revenue for cross subsidisation under 30% shared till (Para 3.7.3 – 3.7.6)
- 14.2.4 The Authority proposes to true up the operating expenses on account of CSR expenses (para 3.5.4).
- 14.2.5 The Authority proposes the true up of Rs. 0.54 Crores (as on 31.03.2022) which shall be provided to the airport operator along with the proposed true up for the Second Control Period as part of the tariff determination for the Third Control Period. (Table no.14).

14.3 True up for the Second Control Period

- 14.3.1 The Authority proposes to true up Aeronautical RAB considering the actual additions and as per the asset segregation ratios as suggested by the independent study. The Authority proposes to reclassify an amount of Rs. 0.53 Crores from aeronautical assets to non-aeronautical assets in the Second Control Period, as part of additions to RAB for the Second Control Period based on the independent study (Table no. 27).
- 14.3.2 The revised allocation ratio for FY 2021 has been considered as Aeronautical 91.32% : Non-Aeronautical 8.68%. (Table no. 29).
- 14.3.3 The Authority proposes to revise WACC based on revised debt schedule based on the actual debt raised by HIAL and the projected debt requirement for FY2021. The proposed recalculated WACC for the Second Control Period is 10.84% (Table no. 32).
- 14.3.4 The Authority proposes to consider CSR expenses as pass through and proposes to true up these expenses computed as per provisions of Companies Act, 2013, on the aeronautical P&L of HIAL (para 4.5.17).
- 14.3.5 The Authority proposes to consider Efficient O&M Costs based on the adjustment as suggested by the independent study tasked with studying the O&M Cost segregation as submitted by HIAL (Table no.42).
- 14.3.6 The Authority proposes to consider the concession fees paid by HIAL as per the recommendation of independent study and consider amount equal to 4% of gross aeronautical revenue for the Second Control Period (Table no.45).

- 14.3.7 The Authority proposes to true up Rs. 498.47 Crores as on 31.03.2022 (adjusted amount for PCPE, First Control Period and Second Control Period) which is proposed to be recovered from the airport operator in the Third Control Period (Table no. 63).

14.4 Traffic Projections

- 14.4.1 The Authority proposes to consider traffic as shown in the (Table 69) for the Third Control Period which shall be trued up based on actuals at the time of tariff determination of the Fourth Control Period.

14.5 Regulatory Asset Base and Depreciation

- 14.5.1 Based on the analysis of the capital expenditure plan submitted by HIAL and findings of the RITES Report, the Authority proposes to allow HIAL Rs. 4820.05 Crores towards expansion capex leading to a capitalisation of Rs. 4088.79 Crores in the Third Control Period. Further the Authority also proposes to allow Interest during Construction of Rs. 639.89 Crores for financing of the expansion capex based on prudent means of financing.

The Authority proposes to consider the expansion capital expenditure as per Table 93 of this Consultation Paper.

- 14.5.2 The Authority proposes to not allow the capital expenditure of Rs. 519 Crores towards metro connectivity during the Third Control Period at this stage (Para 6.2.15 and 6.2.16)
- 14.5.3 The Authority proposes to allow the proposed capital expenditure and capitalisation of Rs. 172.93 Crores and Rs. 308.56 Crores respectively towards airfield pavement enhancement and airfield ground lighting upgrade for the Third Control Period.
- 14.5.4 The Authority proposes to allow capex of Rs. 1256.67 Crores towards general and allied capital works in the Third Control Period against the proposal of Rs. 1527.74 Crores by HIAL.
- 14.5.5 The Authority proposes not to consider the capital expenditure towards CISF residential quarters for the Third Control Period at this stage. (Para 6.2.25 to 6.2.28)
- 14.5.6 The Authority proposes to consider the capital expenditure/asset additions for the Third Control Period as per Table 102 of this Consultation Paper
- 14.5.7 The Authority proposes to reduce 1% of the total project cost from ARR/Target Revenue as readjustment in case any particular capital project is not completed as per the capitalization schedule during the true up of the Third Control Period, at the time of determination of tariff for the Fourth Control Period.
- 14.5.8 The Authority proposes to consider the aeronautical depreciation for the Third Control Period as per Table 104 of this Consultation Paper.
- 14.5.9 For the purpose of determination of RAB, the Authority proposes to apportion the common assets related to passenger terminal into Aero and Non-Aero assets utilising the Terminal Area Ratio of 84.6% (Aero) and 15.4% (Non Aero). Whereas, the common assets pertaining to functions other than the terminal building are proposed to be apportioned utilising the average aeronautical asset ratio for Second Control Period i.e. 91.32% (Aero) and 8.68% (Non Aero).
- 14.5.10 The Authority proposes to consider the RAB for the Third Control Period as per Table 105 of this Consultation Paper.
- 14.5.11 The Authority proposes to true up RAB and Depreciation based on actuals at the time of tariff determination for the Fourth Control Period subject to reasonableness and efficiency.

14.6 Operating Expenses

- 14.6.1 The Authority proposes to disallow interest cost on PSF assets considered by HIAL as part of operating expenditure for the Third Control Period
- 14.6.2 The Authority proposes to not allow the net off of incidental income from operating expenses
- 14.6.3 The Authority proposes to consider allocation ratio as set out in Para 7.2.2 for the Third Control Period
- 14.6.4 The Authority proposes to consider the operating expenditure as set out in Table 112 for the Third Control Period
- 14.6.5 To true up the operating expenditure for the current control period based on actuals subject to reasonableness and efficiency, at the time of determination of tariff for the next control period

14.7 Non-Aeronautical Revenues

- 14.7.1 To treat revenues from Cargo, Ground Handling, Fuel farm, Ground Power Unit, ICT services (CUTE, CUSS, BRS & IT) as aeronautical in nature.
- 14.7.2 To treat other income comprising of interest income and dividend income under the regulatory purview on the basis of the nature of service.
- 14.7.3 To treat revenue from real estate development as non-aeronautical in nature.
- 14.7.4 To treat gross non-aeronautical revenues for cross subsidisation purpose instead of PBT of non-aeronautical revenues.
- 14.7.5 To consider Non-Aeronautical Revenues as set out in Table 117.
- 14.7.6 To true up non-aeronautical revenues for the current control period, at the time of determination of tariff for the Fourth Control Period.

14.8 Weighted Average Cost of Capital

- 14.8.1 The Authority proposes to consider cost of equity as 15.17% as per the outcome of the independent study.
- 14.8.2 The Authority proposes to consider cost of debt as 8.82% based on its assessment of the cost of Rupee Term Loan and the effective cost of the bonds already raised by HIAL.
- 14.8.3 The Authority proposes to consider a notional debt equity ratio of 48%:52% as suggested by the independent study.
- 14.8.4 The Authority proposes to consider the Fair Rate of Return/Weighted Average Cost of Capital as **12.12%** for the Third Control.
- 14.8.5 The Authority proposes to true up actual value of cost of debt subject to a cap of 10.50%.

14.9 Taxation

- 14.9.1 The Authority proposes to determine aeronautical taxes for the Third Control Period by allocating total taxes as per the aggregate profit & loss account between aeronautical and non-aeronautical components based on the ratio of taxes as per the aeronautical and non-aeronautical profit and loss accounts.
- 14.9.2 To consider Aeronautical Taxes as set out in Table 125.

14.10 Inflation

- 14.10.1 The Authority proposes to consider the max WPI for Q4:2020-21 of 4.6% based on the RBI survey of professional forecasters on macroeconomic indicators – 63rd round.

14.11 Quality of Service

- 14.11.1 The Authority proposes not to consider any adjustment in the aeronautical tariff during the Third Control Period with regards to Quality of Service.

14.12 Aggregate Revenue Requirement

- 14.12.1 The Authority proposes to consider ARR and YPP for the Third Control Period as per Table 129.
- 14.12.2 The Authority directs HIAL to submit the detailed Annual Tariff proposal and tariff rate card in line with the ARR and Yield arrived at by the Authority within 7 days of issue of the Consultation Paper for Stakeholder's Consultation

15. STAKEHOLDER'S CONSULTATION TIMELINE

- 15.1.1 In accordance with the provisions of Section 13 (4) of the AERA Act 2008, the proposals contained in this Consultation Paper (as summarised in Section 14) read with the Authority's analysis, is hereby put forth for Stakeholders' Consultation. To assist the stakeholders in making their submissions in a meaningful and constructive manner, necessary documents are enclosed.
- 15.1.2 For removal of doubts, it is clarified that the contents of this Consultation Paper may not be construed as any Order or Direction by the Authority. The Authority shall pass an Order, in this matter, only after considering the submissions of the stakeholders in response hereto and by making such decisions fully documented and explained in the tariff order in terms of the provisions of the Act.
- 15.1.3 The Authority welcomes written evidence-based feedback, comments and suggestions from stakeholders on the proposals made in this Consultation Paper, preferably in electronic form (editable "Microsoft Word" file), latest by 30.07.2021.

Secretary,
Airports Economic Regulatory Authority of India
AERA Building, Administrative Complex
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(Chairperson)

16. LIST OF ANNEXURES

16.1 Annexure 1 – Summary of Independent Study on Allocation of Assets between Aeronautical and Non-Aeronautical Assets

16.1.1 Background

As part of its submissions, HIAL has provided the methodology that has been adopted for the preparation of the MYTP. The key aspects of the asset allocation approach and methodology adopted by HIAL are as presented below:

16.1.2 Classification of Assets

Aeronautical Assets

Aeronautical assets are assumed to be the assets that are necessary or required for providing the aeronautical services at the airport and all such assets that HIAL may procure in accordance with directions of GOI for or in relation to provision of any of the reserved activities including intangible and other assets which are directly related to the aeronautical services. Some of the identified aeronautical services include – aerodrome control services, airfield, airfield lightning and associated works, runways, taxiways, apron and aircraft parking area, remote parking stands, air traffic control building and associated assets, airside access roads, connectivity roads etc.

Non – aeronautical Assets

Non-aeronautical assets are those which are necessary for the performance of non-aeronautical services at the airport. Some of the key non –aeronautical services include – car parking, airline lounges and other commercial lounges, general retail facilities, vending machines, vehicle fuelling services, kirby sheds, temporary office spaces, flight catering services, duty free, ground handling services, cargo handling services etc.

Common Assets

Common assets are those assets which are not identifiable/categorized into either aeronautical asset or non-aeronautical assets. An indicative list of common assets, as submitted by HIAL, includes passenger terminal building, heating, ventilation and air conditioning system for passenger terminal building, office building (including furniture and fixtures) and associated works, quarters for outside security personnel, common hardware, software and communication system, central stores building.

Non-Airport Assets

HIAL, in its submission, has also outlined activities which are classified as non-airport activities. HIAL has submitted that such activities do not fall in the category of aeronautical or non-aeronautical activities. The assets classified under this category include commercial offices for freight forwarders/ consolidators/agents and fuel station located at landside.

Terminal Area Ratio

HIAL has submitted Terminal Area Ratio for aeronautical and non-aeronautical services as 84.6% and 15.4% respectively.

16.1.3 Basis for allocation of assets as per the independent study

The consultant studied various asset categories and developed a methodology for classification of the assets into Aeronautical and Non-aeronautical activities on the basis of AERA Act and the guidelines issued from time to time. The consultant also determined the appropriate proportion of Common Assets that could be allocated to aeronautical activity, in order to determine the RAB. Broadly, the principles for segregation of assets drawn upon AERA Act and the guidelines issued from time to time for revision of asset allocation are as follows:

Aeronautical Assets

- All assets that are exclusively utilised for airport/aeronautical activities as per schedule 3 of the concession agreement are treated as aeronautical assets
- Cargo, Ground handling & Fuel Farm (CGF) assets have been classified as aeronautical in nature. Further, the Common Use Terminal Equipment (CUTE), Common Use Self Service (CUSS), Ground Power Unit (GPU) are classified as aeronautical assets in accordance with the AERA order no. 34/2019-2020 for the second control period dated 27th March 2020
- Capital Expenditure incurred to improve the service quality of the Airport except areas identified as non-aeronautical, which helps maintain the ASQ rating mandated by the project agreement are classified as aeronautical assets

Non-aeronautical Assets

- All assets that are exclusively utilised for non-airport/non-aeronautical activities as per schedule 3 of the concession agreement as well as AERA Act and the Guidelines issued from time to time are treated as non-aeronautical assets. Example are Duty Free, Retail, F&B etc.

Common Assets

- Assets for which the benefits or use can be attributed to both aeronautical and non-aeronautical services are classified as common assets
- Assets primarily used for provision of aeronautical services but are also used for provision of non-aeronautical services are classified as Common Assets. For instance, civil and electrical works for terminal building
- Assets which are used for general corporate purposes including legal, administration, and management affairs are treated as common assets.
- Common assets which are situated within the terminal buildings are apportioned to aeronautical activity in the ratio of the space allocated for aeronautical and non-aeronautical services. The percentages for aeronautical and non-aeronautical areas have been taken as 84.6% and 15.4% respectively
- Common assets which are situated outside the terminal buildings are apportioned based on an appropriate driver such as the gross asset ratio of aeronautical and non-aeronautical for the relevant year
- Other common assets such as the new office building, site office building and township are apportioned based on specific drivers such as the occupancy levels, critical / non-critical staff ratio among others.

Inadmissible Assets

Assets funded out of grant such as the assets funded out of ADFG (Advance Development Fund Grant) should be reduced completely from the RAB and not on proportionate basis. Such assets should be completely disallowed from any consideration towards the RAB.

Terminal Area Ratio

Pursuant to the AERA order no. 34/2019-2020 for the second control period dated 27th March 2020, AERA had considered the Terminal Area Ratio as Aero: 84.6% and Non – Aero: 15.4% respectively. The consultant has also considered the same Terminal Area Ratio for the purpose of the allocation of the relevant assets which is also submitted by HIAL in their submission for second control period. Therefore, the consultant has apportioned the relevant common assets for the provision of aeronautical and non-aeronautical services in the ratio of 84.6% and 15.4% respectively.

Observations on decommissioned stands

As per HIAL's submission, 12 stands had been decommissioned in the years 2018 and 2019. However, it is understood from HIAL's submission that the deletion of these assets has not been captured in the Fixed Asset Registers. The consultant suggested that deletions on account of these assets be taken into consideration and

therefore an amount of Rs. 14.91 Crores be reduced from the aeronautical assets to reflect the deletion of the 12 stands.

16.1.4 Revised allocation of assets as per the independent study

The different assets have been re-classified as per the asset allocation methodology detailed in the preceding section. The proposed classification vis-à-vis HIAL's classification is presented below:

Table 130: Proposed classification of key assets vis-à-vis HIAL's classification as per independent study for capital expenditure

S.no	Description	HIAL's classification	Proposed Classification
1.	Cargo Satellite Building	Non-Airport	Aero
2.	Cargo Terminal Building	Non-Aero	Aero
3.	Fuel Farm	Non-Aero	Aero
4.	Ground Power Unit	Non-Aero	Aero
5.	New Office Building(NOBS)	Common	40% Non-Aero, 60% Common
6.	Site Office Building	Common	Common (87%-88%) ; Non Aero- (13%-12%) depending upon the leased out area for the year
7.	Township	Aero	75% - 80% Aero for individual year (based on critical/ non-critical staff occupancy)
8.	Passenger Terminal Building (Plant & machinery used for both aeronautical and non-aeronautical services)	Aero	Common
9.	Passenger Terminal Building – IT (IT systems used explicitly for non-aeronautical services)	Aero	Non-Aero
10.	Passenger Terminal Building – IT (IT systems used for both aeronautical and non-aeronautical services)	Aero	Common
11.	Passenger Terminal Building – Lightning	Aero	Common
12.	Interim Domestic Arrival Terminal (IDAT) – Buildings	Aero	Common
13.	Interim International Departure Terminal (IIDT) –Buildings, plant & machinery, Office equipment, electric installations etc.	Aero	Common
14.	Landscaping	Aero	Common

16.1.5 Summary of comparative analysis of the aeronautical additions

- Post reclassification of the total investment in aeronautical assets for FY17-FY21, the re-allocated aeronautical and non – aeronautical assets are as under:
 - Revised Aeronautical additions: Rs. 1317.69 Crores.
 - Revised Non – Aeronautical additions: Rs. 69.86 Crores
 - Total adjustment to aeronautical asset additions as per revised allocation : Rs. (0.53) Crores
- The revised additions to the different asset categories have been presented and detailed in the Appendix 1 under para 7.1, 7.2 and 7.3. The purpose of the asset allocation exercise was to compute and evaluate the justified additions to the RAB that should be considered towards tariff determination and in determining the true up of the RAB for the second control period.

A comparative analysis of the aeronautical additions as approved in the order no 34-2019/20 for the second control period dated 27th March 2020, as submitted by HIAL and as per the revised allocation and other adjustments is as depicted in the table given below:

Table 131: Summary of comparative analysis of aeronautical additions as per independent study for capital expenditure

Aeronautical Additions							
S.no	Particulars	2017	2018	2019	2020	2021	Total
1.	As per Tariff Order 34/2019-20 dated 27 th March 2020 – Second Control Period	183.88	108.4	350.72	1082.93	205.3	1,931.23
2.	As per HIAL's submission	36.57	60.11	559.84	491.04	170.66	1,318.22
3.	Deviation ((2)-(1))	(147.31)	(48.29)	209.12	(591.89)	(34.64)	(613.01)
4.	As per proposed allocation	46.59	60.43	577.47	489.65	143.57	1,317.69
5.	Deviation ((4)-(2))	10.02	0.32	17.63	(1.39)	(27.09)	(0.53)

16.1.6 Gross block based on revised asset allocation as per the independent study

Gross block for the second control period

Based on the revised allocation of the assets between aeronautical and non-aeronautical assets, the gross block for each of the year (FY17-FY21) was assessed as depicted in the table given below:

Table 132: Calculations and Summary of gross block for FY17-21 (Revised) as per independent study for capital expenditure

As per proposed allocation						
Gross Block						
S.no	Particulars (In Rs. Crores)	2017	2018	2019	2020	2021
1.	Opening Gross Block	2711.57	2759.49	2816.90	3402.07	3791.89

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As per proposed allocation						
Gross Block						
S.no	Particulars (In Rs. Crores)	2017	2018	2019	2020	2021
	<i>Aero</i>	2459.25	2504.79	2554.91	3122.96	3515.39
	<i>Non-Aero</i>	252.32	254.69	261.98	279.10	276.48
2.	Additions	49.77	67.86	594.76	495.82	179.36
	<i>Aero</i>	46.59	60.43	577.47	489.65	143.57
	<i>Non-Aero</i>	3.18	7.43	17.28	6.17	35.80
3.	Deletions³	1.86	10.45	9.58	106.00	52.74
	<i>Aero</i>	1.05	10.31	9.42	97.22	51.99
	<i>Non-Aero</i>	0.81	0.14	0.16	8.78	0.75
4.	Closing Gross Block ((1)+(2)-(3))	2759.49	2816.90	3402.07	3791.89	3918.52
	<i>Aero</i>	2504.79	2554.91	3122.96	3515.39	3606.97
	<i>Non-Aero</i>	254.69	261.98	279.10	276.48	311.53
5.	ADFG Adjustment	107.00	107.00	107.00	107.00	107.00
	<i>Aero</i>	107.00	107.00	107.00	107.00	107.00
	<i>Non-Aero</i>	0.00	0.00	0.00	0.00	0.00
6.	Adjusted Closing Gross Block ((4)-(5))	2652.49	2709.90	3295.07	3684.89	3811.52
	<i>Aero</i>	2397.79	2447.91	3015.96	3408.39	3499.97
	<i>Non-Aero</i>	254.69	261.98	279.10	276.48	311.53
7.	Gross Block Ratio (On Adjusted Gross Block)					
	<i>Aero</i>	90.40%	90.33%	91.53%	92.50%	91.83%
	<i>Non-Aero</i>	9.60%	9.67%	8.47%	7.50%	8.17%
	<i>Aero (Average)</i>	91.32%				
	<i>Non-Aero (Average)</i>	8.68%				

³ Deletions on account of the 12 stands have been taken into consideration for the respective years – 2018 (Rs. 6.34 crore) & 2019 (Rs. 8.57 crore);

16.2 **Annexure 2 – Summary of Independent Study on Efficient Operation and Maintenance Costs**

16.2.1 Objective

AERA in the process of the tariff determination for RGI Airport, operated by HIAL for the Third control period (FY 2022 to FY2026). As a part of this exercise, reviewing and examining the O&M costs incurred by the airport (HIAL) for the previous control period (Second control period – FY 2017 to FY2021) is one of the critical activity which has been undertaken by the consultant. HIAL has submitted the actual numbers the period FY17-FY21 based on its audited financial statements which have been used for this exercise.

The objective of the independent study is to allocate the operational expenditure incurred by HIAL into aeronautical and non-aeronautical components using the Authority's guidelines as well as to analyse the efficiency of the operational expenditure for the second control period before considering operating expenditure as a building block for the tariff determination process for HIAL.

The consultant has referred and analysed the following documents:

- The Airports Economic Regulatory Authority of India Act, 2008
- Airports Economic Regulatory Authority of India (Terms and Conditions for Determination of Tariff for Airport Operators) Guidelines, 2011 and amendments and orders issued from time to time
- Concession agreement signed between Ministry of Civil Aviation, Government of India and Hyderabad International Airport signed on 20th December, 2004
- Orders of Telecom Disputes Settlement and Appellate Tribunal (TDSAT)
- Audited Financial statements, documents and records of, and discussions with management of HIAL
- Clarifications received from HIAL management from time to time

Table 133: Summary of independent study for operational expenditure

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Total operating expenses – As per MYTP submission of HIAL	349.43	679.93	456.19	550.07	399.35	2434.98
Total operating expenses – As per the study	313.43	495.51	458.88	550.20	396.15	2214.17
Aero operating expenses – As approved by AERA in 2 nd control period	295.50	305.68	327.38	388.83	450.88	1768.27
Aero operating expenses – As per MYTP submission of HIAL	275.39	546.39	342.89	418.49	321.09	1904.25
Aero operating expenses – As per the study	265.44	422.90	360.85	465.66	338.46	1853.32

16.2.2 Methodology

The operational expenditure allocation ratio submitted by HIAL as part of its MYTP submission is 78.20% on an aggregate basis. The detailed allocation methodology adopted by HIAL to allocate total operational expenditure between aeronautical and non-aeronautical operating expenditure is given in section 5.1 of

Appendix 2. The consultant has used the total operational expenditure based on the audited financial statements as per section 5.3 of Appendix 2 for allocation between aeronautical and non-aeronautical components as given in Table 11 of Appendix 2. The consultant has reviewed the submissions by HIAL and allocation of the operation and maintenance costs based on its own methodology. The consultant has determined the revised approach for allocation of the operations and maintenance costs as detailed in section 5.3 of Appendix 2.

The consultant has allocated the operations and maintenance costs into aeronautical, non-aeronautical and common cost as per the guidelines issued by the Authority from time to time as well as nature of expense. The allocation of the key departments into Aero, Non-Aero and Common is undertaken as explained in Table no.13 of Appendix 2. Post the reclassification of the departments, the Consultant segregated the costs directly attributable to aero and non-aero heads as well as the costs classified as common costs. The common costs were further allocated between aero and non-aero heads on the basis of relevant ratios such as the gross fixed asset ratio, aero-non-aero expense ratio as well as the terminal area ratio. Further, all the costs related to township were classified as common costs and were apportioned on the basis of the critical/non-critical ratio for the year. The table below summarises critical aspects of the revisions discussed and allocation methodology considered towards segregating the operating expense for HIAL for second control period.

Table 134: Summary of key revisions as per independent study for operational expenditure

S.no	Particular	Description
1.	Expenses related to Township	Apportioned on the basis of critical & non-critical staff ratio
2.	Expenses related to provisions on account of bad debt	Disallowed
3.	Expenses related to aviation academy	Disallowed
4.	Expenses related to donations	Disallowed
5.	Lease rent paid to GoT	Aero- 72.69%; Non-Aero 27.31% (1500 acres considered as non-aero)
6.	Expenses related to Landscaping, IT & guest relations departments	Common
7.	Expenses related to commercial property development	Non-Aero
8.	Expenses related to Cargo, Ground Handling & Fuel Farm	Aero
9.	Expenses related to Ground power unit & Cargo Satellite Building	Aero
10.	Collection charges (IATA, PSF & UDF)	Aero

The segregation of remaining expenses is undertaken as follows:

- Concession fees – the concession fees is calculated as 4% of the total aeronautical revenue. The total aeronautical revenue includes reclassification of CGF as aeronautical service.
- CSR Expense – CSR expense has been calculated based on computation of PBT of aeronautical P&L and taking 2% of average net profit of preceding 3 years.

- Forex Losses – Forex losses have been computed based on the maximum allowed RTL rate such that extent that the effective cost of borrowing in foreign currency net of forex gains, is not higher than the cost of RTL

16.2.3 Results of the independent study

The operational expenditure allocation ratio based on the revised segregation methodology is summarised in the table below:

Table 135: Aero as % of the operating expenditure after revised segregation as per independent study for operational expenditure

Particulars	2017	2018	2019	2020	2021
Employee Cost	88.94%	89.18%	88.32%	88.81%	90.88%
General Admin Cost	78.64%	80.37%	78.58%	74.88%	76.30%
Lease Rent to GoT	72.69%	72.69%	72.69%	72.69%	72.69%
Rates & Taxes	90.40%	90.33%	91.53%	92.50%	91.78%
Community Development	0.00%	0.00%	9.64%	100.00%	60.52%
Security Cost	88.06%	83.47%	87.96%	90.85%	91.54%
Bad Debts Written Off	0.00%	0.00%	0.00%	0.10%	98.64%
Bank Charges	90.40%	90.33%	91.53%	92.50%	91.83%
Utility Cost	100.00%	100.00%	100.00%	100.00%	100.00%
Total Repair & Maintenance Cost	93.02%	92.92%	92.48%	92.42%	93.93%
Stores & Repairs Cost	96.04%	97.17%	94.84%	96.00%	93.74%
Insurance cost	90.40%	90.33%	91.53%	92.50%	91.83%
Technical Services Cost	90.57%	91.47%	89.86%	90.79%	94.99%
Housekeeping Cost	85.48%	82.57%	84.01%	86.11%	85.87%
Fuel Farm Expenses	100.00%	100.00%	100.00%	100.00%	100.00%
Other Operating Cost	65.09%	65.14%	67.68%	59.19%	62.06%
Forex Losses	90.40%	90.33%	0.00%	0.00%	0.00%
Concession fees	70.42%	71.35%	71.22%	69.77%	47.69%
Total Operating Expenditure - Study	84.69%	85.35%	78.64%	84.63%	85.44%
Total Operating Expenditure - HIAL	78.81%	80.36%	75.16%	76.08%	80.40%

The change in the operational expenditure ratio for aero allocation (Ratio as per the independent Study – Ratio as per HIAL's submission) based on the independent study is given below:

Table 136: Change in the operational expenditure allocation ratio as per independent study for operational expenditure vis-à-vis those proposed by HIAL for the Second Control Period

Particulars	2017	2018	2019	2020	2021
Employee Cost	8.18%	8.64%	10.98%	11.19%	8.85%
General Admin Cost	-4.12%	-0.51%	3.36%	-1.95%	-5.38%
Lease Rent to GoT	0.35%	-0.04%	-0.01%	0.53%	0.00%
Rates & Taxes	7.08%	6.90%	5.97%	5.34%	2.93%
Community Development	-82.37%	-81.43%	-68.39%	21.22%	-22.11%
Security Cost	7.27%	7.86%	12.18%	13.05%	8.29%
Bad Debts Written Off	-100.00%	-81.67%	0.00%	0.00%	0.00%
Bank Charges	7.08%	6.90%	5.97%	5.34%	3.27%
Utility Cost	5.09%	3.94%	1.86%	1.66%	1.18%
Total Repair & Maintenance Cost	-0.24%	-0.77%	0.07%	-0.08%	0.08%
Stores & Repairs Cost	2.37%	6.74%	3.70%	2.38%	2.32%
Insurance cost	7.08%	6.90%	5.97%	5.34%	3.27%
Technical Services Cost	-2.62%	-4.10%	-2.24%	-0.55%	-1.65%
Housekeeping Cost	2.01%	2.01%	2.49%	3.18%	3.34%
Fuel Farm Expenses	100.00%	100.00%	100.00%	100.00%	100.00%
Other Operating Cost	31.51%	36.70%	40.25%	32.81%	6.64%
Forex Losses	7.08%	6.90%	0.00%	0.00%	0.00%
Concession fees	10.90%	10.48%	12.15%	12.94%	6.87%
Total operational expenditure	5.88%	4.99%	3.47%	8.55%	5.04%

Note: The reclassification of CGF expenses into aeronautical expense, increase in gross fixed asset ratio and aero-non-aero opex ratio, addition of collection charges for UDF and PSF to aeronautical expenses are some of the key reasons for increase in aeronautical opex ratio.

The revised operational expenditure as per the independent study is given below:

Table 137: Year wise adjusted operating and maintenance expenses for the Second Control Period as per independent study for operational expenditure

Particulars(in Rs. Crores)	2017	2018	2019	2020	2021	Total
Employee Cost	53.44	64.40	89.68	108.18	101.76	417.46

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Particulars(in Rs. Crores)	2017	2018	2019	2020	2021	Total
General Admin Cost	42.44	60.52	65.29	84.23	54.76	307.23
Lease Rent to GoT	2.38	2.48	2.61	2.73	2.88	13.09
Rates & Taxes	5.13	5.35	5.38	6.13	5.01	27.00
Community Development	0.00	0.00	3.17	7.02	7.66	17.85
Security Cost	9.68	14.17	16.15	21.12	15.86	76.98
Bad Debts Written Off	0.00	0.00	0.00	0.00	0.20	0.20
Bank Charges	3.55	116.23	0.72	30.23	7.48	158.21
Utility Cost	17.49	16.33	19.35	18.71	11.10	82.97
Total Repair & Maintenance Cost	34.36	39.72	43.35	52.01	49.81	219.24
Stores & Repairs Cost	11.02	5.70	5.49	6.87	3.60	32.68
Insurance cost	1.67	2.20	2.09	2.57	4.44	12.97
Technical Services Cost	20.64	25.57	28.60	39.70	35.65	150.16
Housekeeping Cost	9.72	10.28	11.77	15.06	10.34	57.17
Fuel Farm Expenses	11.36	12.67	15.01	18.29	12.62	69.96
Other Operating Cost	4.85	5.50	8.06	7.92	4.96	31.28
Forex Losses	4.02	3.77	0.00	0.00	0.00	7.79
Concession fees	33.69	38.00	44.15	44.88	10.34	171.06
Total Operating Expenditure – Aero as per the study	265.44	422.90	360.85	465.66	338.46	1853.32
Total Operating Expenditure – Aero as per HIAL	275.39	546.39	342.89	418.49	321.09	1904.25

The impact of the revised segregation methodology (difference between aeronautical operational expenditure as per the independent study and aeronautical operational expenditure as per HIAL's submission) is summarised in the table below:

Table 138: Impact of the segregation methodology on operational expenditure incurred by HIAL as per independent study for operational expenditure vis-à-vis those proposed by HIAL for the Second Control Period

Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Employee Cost	4.91	6.25	11.14	15.70	10.42	48.42
General Admin Cost	-2.43	-4.59	-0.69	-5.53	-4.45	-17.69

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Particulars (In Rs. Crores)	2017	2018	2019	2020	2021	Total
Lease Rent to GoT	0.00	0.00	0.00	0.06	0.00	0.07
Rates & Taxes	0.40	0.40	0.35	0.35	0.16	1.67
Community Development	-2.03	-5.44	-23.26	-1.33	-5.55	-37.61
Security Cost	0.80	1.34	2.23	3.03	1.44	8.84
Bad Debts Written Off	-0.04	-0.33	0.00	0.00	0.00	-0.37
Bank Charges	-2.22	7.60	-1.59	1.75	0.27	5.81
Utility Cost	0.89	0.64	0.36	0.32	0.13	2.34
Total Repair & Maintenance Cost	-0.09	-0.33	0.03	-0.04	0.04	-0.38
Stores & Repairs Cost	0.28	0.40	0.22	0.17	0.09	1.15
Insurance cost	0.13	0.17	0.14	0.15	0.16	0.74
Technical Services Cost	-0.60	-1.14	-0.72	-0.24	-0.62	-3.33
Housekeeping Cost	0.23	0.24	0.35	0.56	0.40	1.77
Fuel Farm Expenses	11.36	12.67	15.01	18.29	12.62	69.96
Other Operating Cost	3.53	4.32	6.59	5.96	1.13	21.52
Forex Losses	-31.26	-151.45	0.00	0.00	0.00	-182.71
Concession fees	6.19	5.77	7.80	7.97	1.14	28.87
Total Operating Expenditure - Aero	-9.95	-123.48	17.97	47.16	17.37	-50.93

The airport operator, i.e. HIAL has submitted the true up of total operating expenditure for the second control period as Rs. 2434.98 Crores, out of which aeronautical operating expenditure are Rs. 1904.25 Crores, non – aero operating expenditure are Rs. 496.70 Crores and non-airport operating expenditure are Rs. 34.04 Crores.

Based on the independent study, the total operational expenditure is Rs. 2214.71 Crores (based on audited financial statements and revised allocation), and proposed aeronautical expenditure is Rs. 1853.32 Crores resulting in total reduction of Rs. 50.93 Crores for the second control period. The opex allocation ratio submitted by HIAL was 78.20% and revised opex allocation ratio is 83.70%.

16.2.4 Efficiency and trend analysis of O&M Expenses

The consultant has analysed the operational expenditure approved by AERA in the second control period order of HIAL and the actual expenditure incurred by HIAL for the second control period as given in section 6.1 of Appendix 2. It is observed that actual operational expenditure is more than the forecasted operational expenditure. Some of the key findings of this analysis are as given below:

- The increase in operational expenditure is due to significant growth in traffic which led to increased operations. Due to this momentum in traffic, the airport crossed the 20 million mark in FY19 itself which was the design capacity as per the previous expansion plans. Hence, HIAL reworked on their expansion

plans and based on the expected traffic at the end of the third control period commenced their expansion for 34 million passengers.

- However, in order to cater to the rising traffic, HIAL commissioned two interim terminals to ensure seamless passenger experience. This led to increase in manpower and administrative costs.
- Further, HIAL also raised finances for the expansion project as well refinanced the existing debt which was previously approved by the Authority as one time expenditure leading to an increase of Rs. 126 Crores from the expenses approved by the Authority.
- Additionally, few cost heads such as utility cost, stores & spares, housekeeping costs etc. have decreased as compared to what was approved by the Authority indicating cost efficiency measures adopted by HIAL as detailed in section 6.2 of Appendix 2.

The consultant also performed trend analysis of various components of the inflation adjusted operational expenditure for the period FY2017 to FY2021 in comparison to the increase in the passenger traffic as given in section 8 of Appendix 2. The CAGR for these components is for the period FY2017-2020 as the consultant understands that the operational expenditure of FY2021 cannot be directly compared with the previous years as the utilisation of the asset has fallen substantially and the airport took some time to adjust to the existing conditions.

As per the analysis of the key components of O&M costs, the consultant has concluded that while the absolute cost has increased over the duration of the Second Control Period due to increased passenger traffic and ramping up of IIAT and IIDT operations, HIAL has been able to improve the efficiency of its operations, as evidenced by a lower growth or even decrease in costs on a per passenger basis on most of its key cost heads.

16.2.5 Internal and External Benchmarking

- The consultant has also analysed HIAL's O&M costs with respect to its performance (internal benchmarking) and observed that for the period FY12-FY21, the inflation adjusted costs per pax at HIAL has decreased for major heads due to the increase in utilisation at the airport. The passenger mix at HIAL is predominantly domestic as it accounts for about 80% of the total traffic at HIAL.
- The consultant undertook a study of HIAL's O&M costs with respect to the performance of its competition (External benchmarking) for FY2018. Similar private airports finalised for the aforementioned study are BIAL, CIAL, DIAL, and MIAL. The consultant understands that these airports may be different in terms to traffic profile, terminal capacity, airside infrastructure, expansion phases, operational strategy etc. and these factors will have an impact on the O&M cost of the airport.
- The findings of the study suggests that the increase in total costs has been higher than the growth in passenger traffic and Air Traffic Movements, however, the per pax cost and per ATM cost for most cost heads has been lower than the passenger growth rate over the same period.

Based on the analysis carried out in the independent study, it is concluded that O&M expenses submitted by HIAL are reasonable and HIAL has adopted measures to achieved further efficiency in operating cost. Additionally, the benchmarking of HIAL with other PPP airports suggests that HIAL ranks lower in most of the cost parameters which suggests that HIAL has managed its cost efficiently and adopted measures to keep the same within limits.

The consultant has relied on the auditor's certificate submitted by HIAL, audited financial statements of HIAL from FY2017 to FY2020, capex and opex submission for FY2021 based on auditors' certificate and the information available in the department wise breakup of operational expenses to verify the expenses incurred during the second control period and to understand the nature of the expenses. The consultant has not audited the operational expenses or any other underlying data submitted by HIAL and relied on auditor's certificate for the same.

16.3 **Annexure 3 -Summary of Independent Study on Determination of Cost of Equity**

The independent study provides an estimate of the Cost of Equity (CoE) for Hyderabad International Airport Ltd (HIAL). A benchmark set of “comparable” international airports are used to estimate the systematic risk exposure of HIAL aero assets under a target gearing ratio, as described in the Capital Asset Pricing Model (CAPM). The Cost of Equity computation also accounts for HIAL specific attributes such as revenue till structure, ownership structure and scale of operations by using a proximity score weighted approach, which factors the closeness of HIAL to the set of “comparable” airports. Based on a reasonable set of assumptions, the independent study provides the following estimates of Cost of Equity:

Table 139: Summary of Independent Study on determination of cost of equity

Variable	HIAL
Asset Beta based on Proximity Score Weights of comparable set	0.573552
Target gearing ratio (Debt/Debt + Equity)	48%
Target gearing ratio (Debt/Equity)	0.9231
Equity Betas	0.9442
Risk Free Rate	7.56%
Equity Risk Premium	8.06%
Cost of Equity	15.17%

16.4 Annexure 4 -Summary of Independent Study on Analysis of the Expansion Capital Expenditure for the Third Control Period

FINDINGS

The findings of the exercise with reference to scope of work are summarized as under:

- a) To examine the proposal of the airport and assess the need for the proposed project and its capacity/scope with reference to Passenger growth upto 34 MPPA /Cargo Volumes/Air Traffic Movement and also to suggest cost effective alternatives.
 1. As brought out under para 5.1.2, the Terminal Building expansion proposal of GHIAL is commensurate to the traffic of 34 MPPA. However, the same is unlikely to be achieved by the end of third control period.
 2. However, in accordance with the findings of ICF, discussed under chapter 03, the traffic of 34 MPPA is likely to be achieved by the year 2029-30.
 3. Since the expansion works have already been undertaken, the option of reduction in area of Terminal Building is technically not feasible.
- b) To examine the building standards and designs proposed by the airport operator in line with IMG norms/IATA/ICAO norms

The existing terminal building was commissioned in 2008 before issue of guidelines on area norms by the Inter-Ministerial Group. The IMG norms have been considered for evaluating the present proposal (Deliberated in para 5.1.2 of the independent study)

The expansion area of 2,48,809 sqm for integrated terminal building meets the requirements of IMG norms of an Integrated Terminal for 34 MPPA.

- c) To analyze the reasonableness of the proposed cost with reference to the tentative ceiling decided by Authority vide order no. 7 dated 13/06/2016 based on the details of the rates and quantity as per government/industry approved norms and advise the Authority on the reasonableness of the costs

As discussed under para 4.2 of the independent study, the unit rates recommended by RITES in its report for the 2nd control period were consistent with the Authority's order No. 7 dated 13/06/2016.

Since the development works have now been clubbed for 2nd and 3rd control period, an annual inflation of 3.02% in accordance with CIDC index has been considered for the portion falling beyond the end of 2nd control period i.e. from 2021-23.

Additional implication @ 6% for GST considered by GHIAL is found to be in order and added to the unit rates. Accordingly, per sqm rate for Terminal Building for 2nd & 3rd control period works out to Rs. 1,29,813.96 and Rs. 1,37,773.12 respectively.

However, GHIAL has considered unit rate of Rs. 1,46,713 per sqm for Terminal Building for the combined development of control period 2nd & 3rd.

The correction in unit rates of Airside works like Apron, Taxiways etc. on account of correction in rate of inflation has also been applied.

The cost of widening of existing 4 lane to 8 lane road of 05 km length has been corrected to Rs. 42.15 Crores. If the widening is considered as 06 lane road for traffic of 26.85 MPPA, then the corrected cost of this road will be Rs. 21.08 Crores. The combined cost will come out to Rs. 83.21 crores including cost of flyover.

The cost of Design & PMC has been reduced as discussed under para 5.4 of the independent study. Cost of Preliminaries and other miscellaneous provision have been also reduced in proportion to hard cost of construction.

Taking into consideration the above, a comparison of CAPEX prepared by GHIAL and the corrected ones by RITES for the three-traffic scenario i.e., 34 MPPA, 31.4 MPPA and 26.85 MPPA has been presented in the following three tables.

Table 140: CAPEX Evaluation for Scenario 1 - 34 MPPA

S.no	Item	Capital Cost as proposed by GHIAL (in Rs. Crores)	Revision in Capital Cost suggested (in Rs. Crores) (With inflation/Option 1)	Revision in Capital Cost suggested (in Rs. Crores) (Without inflation/Option 2)
1	Expansion of the Terminal Building with Airport System	3728.32	3347.39	3229.89
2	Expansion of the Kerb & Approach ramp	156.40	156.40	156.40
3	Expansion of Apron and Taxiways	895.66	731.30	695.85
4	Road Infrastructure	167.00	104.28	104.28
5	GSE Tunnel	82.81	82.81	82.81
	Sub – Total	5030.19	4422.18	4269.22
6	Preliminaries	120.10	98.35	94.95
7	Insurance and Permits			
8	Design Development & PMC	202.94	132.67	128.08
9	Contingencies	243.01	132.67	128.08
	Total	5596.24	4785.86	4620.33

Table 141: CAPEX Evaluation for Scenario 2 - 31.4 MPPA

S.no	Item	Capital Cost as proposed by GHIAL (in Rs. Crores)	Revision in Capital Cost suggested (in Rs. Crores) (With inflation/Option 1)	Revision in Capital Cost suggested (in Rs. Crores) (Without inflation/Option 2)
1	Expansion of the Terminal Building with Airport System	3728.32	2962.00	2866.76
2	Expansion of the Kerb & Approach ramp	156.40	156.40	156.40
3	Expansion of Apron and Taxiways	895.66	731.30	695.85
4	Road Infrastructure	167.00	104.28	104.28

S.no	Item	Capital Cost as proposed by GHIAL (in Rs. Crores)	Revision in Capital Cost suggested (in Rs. Crores) (With inflation/Option 1)	Revision in Capital Cost suggested (in Rs. Crores) (Without inflation/Option 2)
5	GSE Tunnel	82.81	82.81	82.81
	Sub – Total	5030.19	4036.79	3906.10
6	Preliminaries	120.10	89.78	86.87
7	Insurance and Permits			
8	Design Development & PMC	202.94	121.10	117.18
9	Contingencies	243.01	121.10	117.18
	Total	5596.24	4368.78	4227.34

Table 142: CAPEX Evaluation for Scenario 3 - 26.85 MPPA

S.no	Item	Capital Cost as proposed by GHIAL (in Rs. Crores)	Revision in Capital Cost suggested (in Rs. Crores) (With inflation/Option 1)	Revision in Capital Cost suggested (in Rs. Crores) (Without inflation/Option 2)
1	Expansion of the Terminal Building with Airport System	3728.32	2260.73	2206.01
2	Expansion of the Kerb & Approach ramp	156.40	156.40	156.40
3	Expansion of Apron and Taxiways	895.66	731.30	695.85
4	Road Infrastructure	167.00	82.31	82.31
5	GSE Tunnel	82.81	82.81	82.81
	Sub – Total	5030.19	3313.55	3223.38
6	Preliminaries	120.10	73.69	71.69
7	Insurance and Permits			
8	Design Development & PMC	202.94	99.41	96.70
9	Contingencies	243.01	99.41	96.70
	Total	5596.24	3586.06	3488.47

- d) To review designs and specifications proposed in case the costs are assessed to be excessive where the Projects are already in progress or the contracts are already awarded. Further to examine whether proper procedures have been followed in the award of the work.

The design & specifications proposed for Terminal Building & other works can be considered generally in order keeping in the view the best industry practices.

As informed by GHIAL, in the procedure for the awarding of work, it is noted that major works contract have been awarded based on competitive bids, however, the PMC of value Rs. 154.92 crores has been awarded by GHIAL to its own company without any competition. We are of the opinion that if the GHIAL had invited bids for the PMC work, then due to competition, the GHIAL could have been able to receive lower bid than at the cost at which it has awarded the work to GADL. With PMC of the of such a high magnitude on nomination is a deviation from standard practice. In this case reducing the PMC & Design fee to 3% of the hard cost has been considered as justified.

The best industry practice also demands for detailed cost estimation of work before inviting the bids, which is not provided by GHIAL.

The procedure followed in the award of work is already deliberated in the para no. 5.4 of the independent study. We are of the opinion that if the work had been split before call of tenders than it may have attracted more bids in place of 4 bids due to lower qualifying criteria of work.

- e) To review and justify the reasonableness of time schedule of completion of work of proposed by HIAL

The time schedule proposed by GHIAL is considered adequate and reasonable. However, the delay in award of work may be reviewed appropriately by AERA.

16.5 Annexure 5 -Item Wise Break of General and allied capital works proposed to be considered by the Authority for the Third Control Period

Item wise Aeronautical General and allied capital works proposed to be considered by the Authority for the Third Control Period is given in the table below:

Table 143: Aeronautical General and allied capital works proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Replacing the old domestic fire tender with new domestic fire tender with equipment	0.80	1.00	-	-	-	1.80
Small Size sweeping vehicle –(1.5 to 2.5 M3)	1.80	-	-	-	-	1.80
Replacement of Command Control Vehicle	-	-	-	-	1.50	1.50
Smoke extractor with blower fan	-	0.06	-	0.09	-	0.15
Upgradation of HT System	0.60	-	-	-	-	0.60
Setting up of new AOCC, IMC and SOCC in the expanded terminal	-	28.00	-	-	-	28.00
Run up bay	-	-	-	25.00	-	25.00
FEGPU Units (40 Nos.)	-	-	10.00	10.00	-	20.00
Cargo Warehouse	10.00	-	10.00	-	-	20.00
GA Terminal	-	-	-	-	15.00	15.00
Baggage Trolleys - 3000	4.00	-	4.00	-	4.00	12.00
Airside land filling	10.00	-	-	-	-	10.00
Pack House	10.00	-	-	-	-	10.00
PTC Expansion & Redevelopment	10.00	-	-	-	-	10.00
Utilization of Phase 2 Solar Power	9.00	-	-	-	-	9.00
GSE Workshop	7.70	-	-	-	-	7.70
GHIAL ATF Dead stock for New Tanks	6.00	-	-	-	-	6.00
Signage	3.13	2.44	-	-	-	5.57
IOT for resource optimization (Aircraft Turnaround)	-	5.00	-	-	-	5.00
Weather Forecasting Tool/software	-	-	-	-	5.00	5.00

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Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Cargo Village Upliftment	5.00	-	-	-	-	5.00
Additional perimeter and Power fence at the southern and western part of the perimeter	5.00	-	-	-	-	5.00
RENOVATION OF CISF COMPLEX	1.00	1.00	0.80	0.50	-	3.30
Fuel Farm Improvements - Phase1 & 2	4.11	-	-	-	-	4.11
Aircraft Crash Fire Tender driving simulator	-	4.00	-	-	-	4.00
Automation of the arrival departure ticketing system	4.00	-	-	-	-	4.00
Demand Capacity Balancing tool	-	-	-	3.00	-	3.00
Proposed Fire Station on Landside with one parking bay, water storage tank and crew rest room with amenities: 2000SFT, 200 KL water tank	-	2.50	-	-	-	2.50
Water Blaster	-	2.30	-	-	-	2.30
Altys Saga tool	-	2.00	-	-	-	2.00
Digitalization of ITP (Into plane operation)	2.00	-	-	-	-	2.00
Baggage Tracking System - Arrivals	2.00	-	-	-	-	2.00
Baggage Tracking System - Departures	-	2.00	-	-	-	2.00
Face Recognition	2.00	-	-	-	-	2.00
Refurbishment of Level H space for TOPS&CFL offices	1.00	1.00	-	-	-	2.00
Barricades & delineators for landside security	0.25	0.25	-	0.25	-	0.75
Public Address System Revamp	1.75	-	-	-	-	1.75
Procurement of hand scanners for 36 ATRS lanes	0.25	0.25	0.25	0.25	-	1.00
Construction of 2 bays at SFS	1.00	-	-	-	-	1.00
Customs Matrix Room Upgradation, IT and other requirements	0.50	0.50	-	-	-	1.00
PRM Zones _ lounge / Tac tiles	0.60	0.40	-	-	-	1.00
Modifications to the offices in PTB	0.50	0.50	-	-	-	1.00

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Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Fire station expansion, additional space for stores, basic amenities etc. 2,000SFT	0.80	-	-	-	-	0.80
Mobile Chargable emergency lighting system - Kalkit	-	-	-	0.75	-	0.75
Calibration Tower at Fuel Farm	0.67	-	-	-	-	0.67
Replacement of 500 Nos of cots, Almirahs & mattress	0.20	-	0.20	-	-	0.40
Multi-layered rifle racks	0.15	0.15	0.15	-	-	0.45
Q-Managers – 2000 Nos.	0.20	-	0.20	-	0.20	0.60
Trolley Scooters - 6	0.36	-	0.18	-	-	0.54
Revamping of existing AOCC	0.50	-	-	-	-	0.50
SCORE TOOL /software	0.50	-	-	-	-	0.50
Marker Boards 100 Nos	-	-	0.50	-	-	0.50
Construction of additional unit kote	-	-	-	-	-	0.00
Re-check in counters with BHS for Domestic passengers	0.50	-	-	-	-	0.50
UHF Sets for Fuel Farm	0.36	-	-	-	-	0.36
Utility vehicle	-	-	0.15	-	0.17	0.32
Procurement of Additional vehicle for efficient Safety Management System implementation and Safety oversight functions	-	0.25	-	-	-	0.25
Replacement of furniture at the fire station	-	-	-	-	0.10	0.10
Vehicle fast charger	-	0.10	-	-	-	0.10
Vehicle for TOPS/ADM	0.10	-	-	-	-	0.10
Industrial Washing Machine	0.06	-	-	-	-	0.06
SMART Airside (Phase 1)	2.50	2.50	-	-	-	5.00
Old Arrival & Departure ramp roads recarpeting	3.50	-	-	-	-	3.50
Replacement of Fabric for Departure Ramp	3.50	-	-	-	-	3.50
Apron Cleaning Vehicle -2 Nos	-	-	-	3.00	-	3.00

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Upgradation of power fence (only power fence panels, software and power fence desktop)	-	2.95	-	-	-	2.95
Other Spl Vehicle	-	-	2.00	-	-	2.00
High Rise M/C for East Pier- 2 Nos	2.00	-	-	-	-	2.00
Access Control System & integrated fire alarm system	1.35	-	-	-	-	1.35
Supply and commissioning of new airfield pavement marker machine along with towing vehicle	1.25	-	-	-	-	1.25
Replacement of UHF (TETRA)- New Radios for Operations (100 Nos.)	1.10	-	-	-	-	1.10
TSMB Upgradation	1.04	-	-	-	-	1.04
e-TOD & GIS Survey	-	1.00	-	-	-	1.00
Pax Tracking @ Touch Point (E- Boarding)	1.00	-	-	-	-	1.00
Upgradation of standby DX HVAC	-	-	-	0.98	-	0.98
Water Channelizing at Perimeter Wall	0.75	-	-	-	-	0.75
Replacement of Bollards & Boom Barrier at Gate House 2	0.72	-	-	-	-	0.72
Supply and commissioning of special purpose & power tools for the maintenance of airport special vehicles	0.58	-	-	-	-	0.58
IBM WPS (Middleware) upgradation	0.50	-	-	-	-	0.50
DG Set for Radar 320 KVA	0.40	-	-	-	-	0.40
Installation of RO water plant at CISF Quarters	0.35	-	-	-	-	0.35
Diesel fire hydrant engine 320KVA	-	-	-	0.35	-	0.35
Procurement of Vehicle	0.25	-	-	-	-	0.25
Zon Guns 6 Nos	-	-	0.09	-	-	0.09
ADP Printer 2 Nos	0.03	-	-	-	-	0.03
Alco Meters 2 Nos	-	-	0.03	-	-	0.03
Apron Cleaning Vehicle -2 Nos	3.00	-	-	-	-	3.00

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Total Pure Aero (A)	132.21	60.15	28.55	44.17	25.97	291.04

Item wise Pure Non-Aeronautical General and allied capital works proposed to be considered by the Authority for the Third Control Period is given in the table below:

Table 144: Non-Aeronautical General and allied capital works proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
ATRS Lane Installation	0.00	0.30	0.15	0.15	0.15	0.75
Land filling (Roads)	29.00	0.00	0.00	0.00	0.00	29.00
Dispensers	5.40	0.00	8.00	0.00	0.00	13.40
Construction of vehicular Lane for Taxibot	3.50	3.50	0.00	0.00	0.00	7.00
PTC Pavement & Improvements	6.30	0.00	0.00	0.00	0.00	6.30
New AEMB	0.00	0.00	2.73	2.73	0.00	5.46
Leak detection system\Tightness monitoring check	5.00	0.00	0.00	0.00	0.00	5.00
Truck Parking Area	4.50	0.00	0.00	0.00	0.00	4.50
Replacement of AC units at AEMB	1.75	0.00	0.00	0.00	0.00	1.75
Printers - A3 size	0.35	0.00	0.00	0.00	0.00	0.35
Expansion of Admin building (second floor) for developing record room etc (Suppliers request)	0.25	0.00	0.00	0.00	0.00	0.25
Pipeline Connectivity	0.00	0.20	0.00	0.00	0.00	0.20
Office Space Allocations	0.18	0.00	0.00	0.00	0.00	0.18
Airline Portal	0.00	0.10	0.00	0.00	0.00	0.10
Car park Master plan consultancy charges	2.43	0.00	0.00	0.00	0.00	2.43
Fabric cost for PTB carpark walkways (East & West)	1.68	0.00	0.00	0.00	0.00	1.68
ANPR camera implementation at carpark	0.75	0.00	0.00	0.00	0.00	0.75

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Digital signage at carpark	0.50	0.00	0.00	0.00	0.00	0.50
Car Park Up gradation works	0.50	0.00	0.00	0.00	0.00	0.50
Total Non-Aero (B)	62.09	4.10	10.88	2.88	0.15	80.10

Item wise General and allied capital works (segregated in Terminal Ratio) proposed to be considered by the Authority for the Third Control Period is given in the table below:

Table 145: General and allied capital works (segregated in Terminal Ratio) proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Replacement of Swingo	1.60	-	-	-	-	1.60
Shopping Trolley - 300	-	-	-	16.88	-	16.88
NATS	-	40.00	-	-	-	40.00
Modification to the PTB	0.00	32.00	0.00	0.00	0.00	32.00
Setting up of new AOCC, IMC and SOCC in the expanded terminal	0.00	30.00	0.00	0.00	0.00	30.00
VIP Terminal	20.00	-	-	-	-	20.00
Upgradation of LS HVAC of Terminal	-	6.40	6.40	-	-	12.81
Modification to the PTB	0.00	3.00	0.00	0.00	0.00	3.00
Air neutralizers Pure Air	1.50	-	-	0.75	-	2.25
Lounge upgradation	0.50	0.50	0.50	0.25	0.25	2.00
Carpet tiles for PLB (Movable Link) - 10	1.75	-	-	-	-	1.75
Robotic cleaning machine - 3	0.50	0.50	0.50	-	-	1.50
Chairs for stakeholders - 1200	0.20	0.30	0.30	0.20	0.20	1.20
Relocation of Prayer room	1.00	-	-	-	-	1.00
soil barrier matt for entry gates	0.20	-	-	-	0.80	1.00

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Scooty mop - 30	0.30	0.30	0.30	-	-	0.90
Semi-automatic floor cleaning machine - 3	0.25	0.25	0.25	-	-	0.75
Information desks	0.60	-	-	-	-	0.60
Smart washroom solution	0.50	-	-	-	-	0.50
Segway - 6 Nos.	0.16	0.32	-	-	-	0.48
Hand dryers - 200	0.07	0.14	0.05	-	-	0.26
M fold dispenser - 400	-	0.10	-	-	0.10	0.20
Dual waste segregation bins - 100	-	0.10	0.10	-	-	0.20
Play Zone	0.15	-	-	-	-	0.15
Ice Cube Machine - 3	0.10	0.05	-	-	-	0.15
LED conversion at PTB (Passenger Movement Areas)	40.00	-	-	-	-	40.00
Development – Airport Mobile Application	3.60	-	-	-	-	3.60
Washroom Upgradation at PTB	3.00	-	-	-	-	3.00
AHU Motorized Dampers replacement	-	2.80	-	-	-	2.80
Washroom Upgradation - Terminal	2.20	-	-	-	-	2.20
PTB LT Distribution redundancy	2.00	-	-	-	-	2.00
AHU E Filters	-	1.94	-	-	-	1.94
"HVAC Improvement & Support Equipment"	-	1.58	-	-	-	1.58
Improvements to OSO	1.50	-	-	-	-	1.50
Design and Implementation of Feedback kiosks at all Check-in Counters and wash rooms	1.50	-	-	-	-	1.50
UV Lamp for AHU	-	1.50	-	-	-	1.50
HVAC Valves & Accessories for upgradation	0.50	0.90	-	-	-	1.40
Trolley Tracking System Using RFID	1.00	-	-	-	-	1.00

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Chilled water network integration btw old & new systems	-	0.80	-	-	-	0.80
Existing terminal Design consultant	0.03	-	-	-	-	0.03
Total Common Capex to be divided in Terminal Ratio (1)	84.71	123.48	8.40	18.08	1.35	236.02
Terminal Ratio (2)	84.60%	84.60%	84.60%	84.60%	84.60%	
Aero Portion of Common Terminal Ratio Expense (C) = (1) * (2)	71.66	104.47	7.11	15.29	1.14	199.67
Non-Aero Portion of Common Terminal Ratio Expense (D) = (1)* {(100%) - (2)}	13.05	19.02	1.29	2.78	0.21	36.35

Item wise General and allied capital works (segregated in Gross Fixed Asset Ratio) proposed to be considered by the Authority for the Third Control Period is given in the table below:

Table 146: General and allied capital works (segregated in Gross Fixed Asset Ratio) proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Fire hydrant/Sprinkler lines replacement	0.70	0.60	-	-	-	1.30
OOG Trolleys - 50	0.15	-	-	-	-	0.15
Teflon Roof Replacement (Airport Village)	0.10	-	-	-	-	0.10
Modification to the PTB	13.80	8.46	8.46	-	-	30.72
Additional Water Storage Tanks (10000 KL)	-	-	10.00	-	-	10.00
PMS integration and retrofit for existing power distribution	9.20	-	-	-	-	9.20
Water Treatment Plant with pipelines @ R2	3.40	-	-	-	-	3.40
Digital Transformation	5.20	-	-	-	-	5.20
Landscaping	-	5.00	-	-	-	5.00
Replacement of existing old Desktops and Laptops with new Desktops & Laptops.	1.75	0.45	-	-	-	2.20

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Replacement SD VC equipment with HD VC equipment	2.00	-	-	-	-	2.00
R2 Pond improvement works	1.18	-	-	-	-	1.18
Porta Cabins	0.45	-	-	-	-	0.45
Training Room	0.30	-	-	-	-	0.30
High rise Scissor lifts - 3	0.10	0.10	0.10	-	-	0.30
SS Railing Works & Bollards	0.20	-	0.10	-	-	0.30
Revamping of IMC - IT equipments	0.27	-	-	-	-	0.27
Staff Lockers - 100	0.05	0.10	-	-	-	0.15
Hot & Cold Water dispensers - 100	0.04	-	0.03	-	0.03	0.10
Enhancement of Electrical Infrastructure at different sub- stations.	31.00	-	-	-	-	31.00
Relaying of Landside Roads	-	7.65	7.65	7.65	7.65	30.60
Innovation Hub	3.00	-	-	-	-	3.00
Enterprise IT - Capex Exp	3.00	-	-	-	-	3.00
Digitilization of Water Distribution metering system (domestic/flushing/ Drinking water consumption)	1.50	1.50	-	-	-	3.00
Prepaid metering -2 phase(ALS + PTB)	3.00	-	-	-	-	3.00
Sweeper	-	-	3.00	-	-	3.00
Medium size sweeping vehicles – (2.5 to 5 M3)	2.75	-	-	-	-	2.75
Replacement of IP Telephony System	-	2.50	-	-	-	2.50
Asset Management Tool	-	2.19	-	-	-	2.19
Upgrading Pumping System & Equipments	0.70	-	-	0.30	0.50	1.50
Fibre Connectivity with redundancy	1.45	-	-	-	-	1.45
Trilo - Grass cut and collect machine (2)	0.70	-	-	0.70	-	1.40
OSO Canteen Renovation	1.35	-	-	-	-	1.35

Consultation Paper No: 11/2021-22 for the Third Control Period RGIA, Hyderabad (HIAL)

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
GPR Mapping for GHIAL (existing utilities)	1.20	-	-	-	-	1.20
Carpet changing for 3,4&5 floors, NOB	1.00	-	-	-	-	1.00
Staff – Access Control System and Visitor Management System	1.00	-	-	-	-	1.00
AMR meters supply and Installation	0.95	-	-	-	-	0.95
Ground Transportation Improvements	0.70	-	-	-	-	0.70
3D Modelling Infra works	0.50	-	-	-	-	0.50
Replacement of 10 Line LED Boards & 5 Lines LED Boards	0.50	-	-	-	-	0.50
Software for Document Management System	0.50	-	-	-	-	0.50
CAD Upgrading	0.02	-	0.02	-	0.03	0.07
Total Common Capex {Gross Fixed Asset Ratio} (3)	93.71	28.55	29.36	8.65	8.21	168.48
Gross Fixed Asset Ratio (4)	91.32%	91.32%	91.32%	91.32%	91.32%	
Aero Portion of Common Terminal Ratio Expense (E) = (3) * (4)	85.57	26.07	26.81	7.90	7.50	153.85
Non-Aero Portion of Common Terminal Ratio Expense (F) = (3)* {(100%) - (4)}	8.14	2.48	2.55	0.75	0.71	14.63

Summary of Total Aeronautical General and allied capital works proposed to be considered by the Authority for the Third Control Period is given in the table below:

Table 147: Total Aeronautical General and allied capital works proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Statutory Requirement (G)	135.13	142.85	42.52	140.78	19.75	481.03
100% Aero (A) {refer table 143}	132.21	60.15	28.55	44.17	25.97	291.04
Aero (Terminal Ratio) (C) {refer table 145}	71.66	104.47	7.11	15.29	1.14	199.67

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
Aero (Gross Fixed Asset Ratio) (E) {refer table 146}	85.57	26.07	26.81	7.90	7.50	153.85
Total Aero Capex = (G) + (A) + (C) + (E)	424.57	333.54	104.99	208.14	54.36	1125.59

Summary of Total Non-Aeronautical General and allied capital works proposed to be considered by the Authority for the Third Control Period is given in the table below:

Table 148: Total Non-Aeronautical General and allied capital works proposed to be considered by the Authority for the Third Control Period

Particulars (In Rs. Crores)	2022	2023	2024	2025	2026	Aggregate for the Third Control Period
100% Non-Aero = (B) {refer table 144}	62.09	4.10	10.88	2.88	0.15	80.10
Non-Aero (Terminal Ratio) = (D) {refer table 145}	13.05	19.02	1.29	2.78	0.21	36.35
Non-Aero (Gross Fixed Asset Ratio) (F) {refer table 146}	8.14	2.48	2.55	0.75	0.71	14.63
Total Non-Aero Capex = (B) + (D) + (F)	83.27	25.60	14.72	6.41	1.07	131.07

17. LIST OF APPENDICES

*The Appendices are enclosed in subsequent pages
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Study on allocation of assets between aeronautical and non-aeronautical assets

(RFP No. 01/2020-21)

for

Hyderabad International Airport Limited
(Second Control Period from 01.04.2017 to 31.03.2021)



By - CRISIL Risk and Infrastructure Solutions Limited, India
June 2021

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Glossary

Acronym	Expansion
ADFG	Advance Development Fund Grant
AERA	Airports Economic Regulatory Authority
AGL	Airfield Ground Lighting
ARR	Aggregate Revenue Requirement
ASQ	Airport Service Quality
ATM	Air traffic movement
AUCC	Airport Users Consultative Committee
CAGR	Compound Annual Growth Rate
CAT	Category
CGF	Cargo, Ground handling & Fuel Farm
CRIS	CRISIL Risk and Infrastructure Solutions Limited
CUSS	Common Use Self Service
CUTE	Common Use Terminal Equipment
FAR	Fixed Asset Register
GHIAL	GMR Hyderabad International Airport Limited
GOI	Government of India
GPU	Ground Power Unit
HIAL	Hyderabad Rajiv Gandhi International Airport
IDAT	Interim Domestic Arrival Terminal
IIDT	Interim International Departures Terminal
INR	Indian Rupees
KVA	Kilovolt-Ampere

Acronym	Expansion
MPPA	Million Passengers Per Annum
MYTP	Multi Year Tariff Proposal
NOB	New Office Building
PCN	Pavement Classification Number
PMC	Project Management Consultancy
PTB	Passenger Terminal Building
RAB	Regulatory Asset Base
RFP	Request for Proposal
RGIA	Rajiv Gandhi International Airport
SSA	State Support Agreement
YPP	Yield Per Pax

1. Statement of Confidentiality

This report has been prepared by M/s. CRISIL Risk and Infrastructure Solutions (CRIS), an Indian Infrastructure Advisory Firm as part of its deliverables under the engagement awarded as per RFP No. RFP No. 01/2020-21 floated by the Airports Economic Regulatory Authority of India. This document is being submitted to AERA for use in connection with the tariff determination of Hyderabad International Airport Limited (HIAL). This report or its contents may not be shared with anyone except with the consent of AERA. CRIS shall not have any liability for the unauthorized use or distribution of this document.

2. Background and objective of the engagement

2.1 Background

About the Rajiv Gandhi International Airport, Hyderabad

GMR Hyderabad International Airport Limited ("HIAL") is the concessionaire responsible for the design, finance, construction, operation and maintenance of the world-class green-field airport under the name and style of 'Rajiv Gandhi International Airport' ("RGIA") at Shamshabad, Hyderabad in public private partnership mode ("Project"). The concession agreement for the Project was signed between Ministry of Civil Aviation ("MoCA") and HIAL on **December 20, 2004** ("Concession Agreement" or "CA"). The airport commenced operations from 23rd March, 2008.

HIAL is a joint venture company having the following shareholding structure as of June 03, 2020:

Table 1: Summary of shareholding structure of HIAL

Holding Company	Percentage of Stake (%)
GMR Airports Limited	63
Airports Authority of India	13
Government of Telangana	13
Malaysia Airports Holding Berhad (Mauritius)	11
Total	100

Source: HIAL MYTP for third control period

The key agreements governing the functioning of HIAL inter alia include:

- Concession Agreement, executed between Government of India, MoCA and GHIAL, on 20th December 2004.
- Land Lease Agreement executed between the State Government (Lessor) and GHIAL (Lessee) on 30th September 2003.
- State Support Agreement (SSA) executed between the State Government and GHIAL on 30th September 2003.
- CNS / ATM Agreement executed between AAI and GHIAL on 11th August 2005. It defines the scope of services for Pre-Commissioning Phase, Commissioning Phase and Operation Phase.
- Shareholder's Agreement executed between State Government, AAI, GIL, MAHB and GHIAL on 30th September 2003.
- Sponsors' Agreement executed between GIL and MAHB on 30th September 2003. The Sponsors' Agreement defines the roles of GMR group and MAHB in the JV.

RGIA has completed its first control period from April 01, 2011 to March 31, 2016 ("First Control Period") and is currently in the second control period from April 01, 2017 to March 31, 2021 ("Second Control Period"). Therefore, in accordance with Clause 3 of the AERA Act and the Guidelines as issued from time to time, HIAL has submitted an application for the determination of aeronautical tariffs i.e. Multi Year Tariff Proposal ("MYTP") for the third control period (a period from 1st April 2021 to 31st March 2026) ("Third Control Period") to AERA.

2.2 Objective of the report

Pursuant to the MYTP submission by HIAL, CRISIL Risk and Infrastructure Solutions Limited (CRIS) is assisting AERA in assessing the same for determination of tariffs for aeronautical services at RGIA and preparation of the final tariff order for approval.

The assessment of Regulatory Asset Base (RAB) is a vital requirement for tariff determination and finalisation of MYTP. RAB largely depends upon the allocation of assets and capital investments of the airport into aeronautical (Aero) and non-aeronautical (Non-Aero) assets. Apart from RAB, this asset allocation exercise also has an impact on other building blocks of tariff determination i.e. rate of return, operations costs and depreciation.

Dependence of RAB on asset allocation

As per the AERA guidelines, the closing RAB for a year is derived using the formula below:

$$\text{Closing RAB} = \text{Opening RAB} + \text{Investments} - \text{Depreciation}$$

Investments in the RAB comprises:

- 100% Aeronautical Assets, the Aeronautical proportion of the Common Assets; and
- Any investments made for the performance of Reserved Activities, which are owned by HIAL.

RAB does not include:

- Capital work-in-progress, which are not capitalised in fixed assets; and
- Non-airport assets.

The allocation of assets into Aero and Non-Aero requires simultaneous consideration of various elements that include nature of the asset, location within the airport premises, its utility, area occupied by the assets and revenues attributable from the asset, among others. Further, year on year change in RAB needs to be considered due to the change in various factors such as higher investments, depreciation of the assets, utilization patterns, and nature of asset composition etc.

As part of CRIS' scope of work, the asset allocation study has been carried out to arrive at the justified additions to the RAB as per the general principles of tariff determination. This report is aimed at presenting the allocation of assets between aeronautical and non-aeronautical activities as submitted by HIAL in its MYTP and the revised allocation on the basis of general principles and treatments as considered under the prevalent tariff orders. The study has certain limitations which includes reliance and dependence on the statutory auditor's certificate and information provided in the Fixed Asset Register (FAR) submitted by HIAL. Further, a site visit was undertaken to assess the progress of the project vis-à-vis the submissions made under the MYTP by HIAL. For the asset allocation exercise, CRIS has referred and reviewed the following documents:

1. The Airports Economic Regulatory Authority of India Act, 2008
2. Airports Economic Regulatory Authority of India (Terms and Conditions for Determination of Tariff for Airport Operators) Guidelines, 2011 and amendments and orders issued from time to time
3. Concession agreement signed between Ministry of Civil Aviation, Government of India and Hyderabad International Airport signed on 20th December, 2004
4. Orders of Telecom Disputes Settlement and Appellate Tribunal (TDSAT)
5. Audited Financial statements, documents and records of, and discussions with management of HIAL
6. Clarifications received from HIAL management from time to time

3. Terms of reference and work performed

3.1 Extract of terms of reference on asset re-allocation

AERA has outlined the scope of work for allocation of assets between Aero and Non-Aero assets in clauses 3.1(v) of schedule 1 of their RFP No. 01/2020-2021 for engagement of consultants to assist AERA in determination of tariffs for aeronautical services at HIAL. The scope of work is as follows:

3.1(v) – Asset / OPEX segregation between Aero and Non Aero.

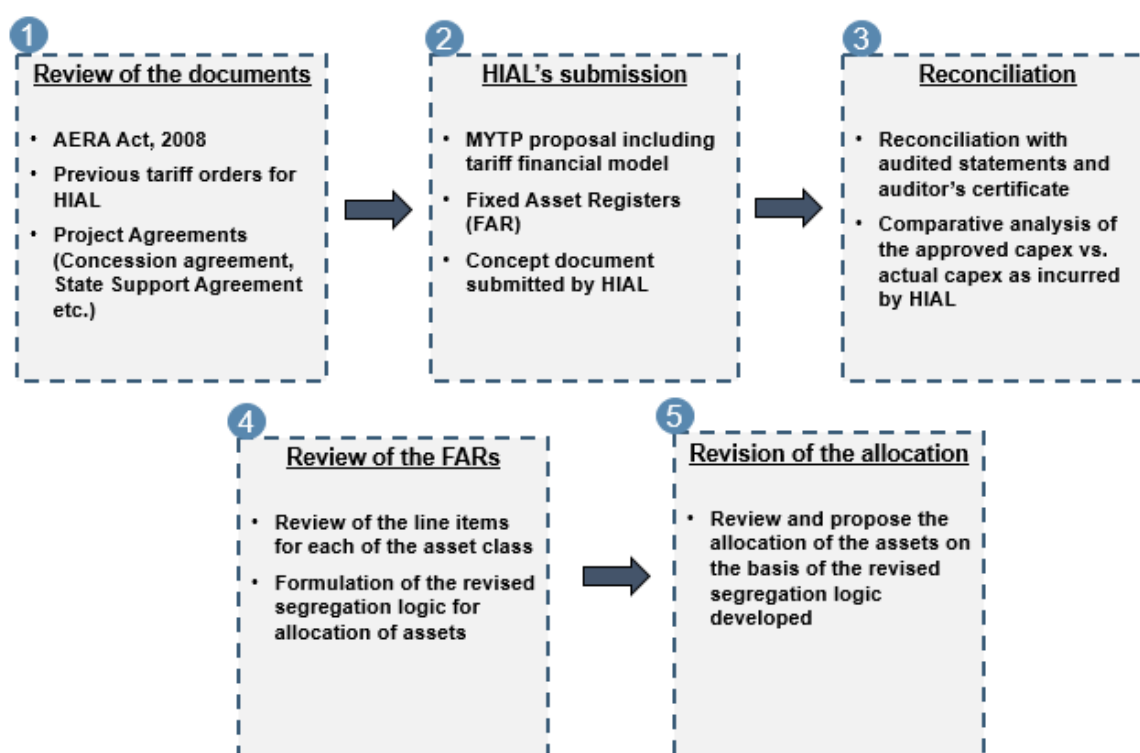
Limitations to this study

- The report is based on analysis of the auditor reports, other relevant documents and certificates as submitted by HIAL with respect to fixed assets. The work undertaken also has reliance on the information provided in the Fixed Asset Register (FAR) as submitted by HIAL. Further, a site visit was undertaken to assess the progress of the project vis-à-vis the submissions made in the MYTP by HIAL.
- The work procedures conducted for the preparation of this report do not constitute an audit, examination or a review in accordance with generally accepted auditing standards or attestation standard as is expected under section 143 of the Companies Act, 2013.

3.2 Step-wise activities undertaken with regard to the scope of work

CRIS followed a detailed and comprehensive methodology drawn upon AERA guidelines and principles to segregate the assets between the aeronautical and non-aeronautical activities. A diagrammatic representation of the same is presented below:

Figure 1: Approach and methodology followed for the segregation of assets



4. Executive summary

4.1 Allocation of the assets as per HIAL's submission

As part of its submissions, HIAL has provided the methodology that has been adopted for the preparation of the MYTP. The key aspects of the asset allocation approach and methodology adopted by HIAL are as presented below.

Aeronautical Assets

Aeronautical assets are assumed to be the assets that are necessary or required for providing the aeronautical services at the airport and all such assets that HIAL may procure in accordance with directions of GOI for or in relation to provision of any of the reserved activities including intangible and other assets which are directly related to the aeronautical services. Some of the identified aeronautical services include – aerodrome control services, airfield, airfield lightning and associated works, runways, taxiways, apron and aircraft parking area, remote parking stands, air traffic control building and associated assets, airside access roads, connectivity roads etc.

Non – aeronautical Assets

Non-aeronautical assets are those which are necessary for the performance of non-aeronautical services at the airport. Some of the key non –aeronautical services include – car parking, airline lounges and other commercial lounges, general retail facilities, vending machines, vehicle fuelling services, kirby sheds, temporary office spaces, flight catering services, duty free, ground handling services, cargo handling services etc.

Common Assets

Common assets are those assets which are not identifiable/categorized into either aeronautical asset or non-aeronautical assets. An indicative list of common assets, as submitted by HIAL, includes passenger terminal building, heating, ventilation and air conditioning system for passenger terminal building, office building (including furniture and fixtures) and associated works, quarters for outside security personnel, common hardware, software and communication system, central stores building.

Non-Airport Assets

HIAL, in its submission, has also outlined activities which are classified as non-airport activities. HIAL has submitted that such activities do not fall in the category of aeronautical or non-aeronautical activities. The assets classified under this category include commercial offices for freight forwarders/ consolidators/agents and fuel station located at landside.

Terminal Area Ratio

HIAL has submitted Terminal Area Ratio for aeronautical and non-aeronautical services as 84.6% and 15.4% respectively.

4.2 Basis for allocation of assets by CRIS

CRIS studied various asset categories and developed a methodology for classification of the assets into Aeronautical and Non-aeronautical activities on the basis of AERA Act and the guidelines issued from time to time. CRIS also determined the appropriate proportion of Common Assets that could be allocated to aeronautical activity, in order to determine the RAB. Broadly, the principles for segregation of assets drawn upon AERA Act and the guidelines issued from time to time for revision of asset allocation are as follows:

Aeronautical Assets

- All assets that are exclusively utilised for airport/aeronautical activities as per schedule 3 of the concession agreement are treated as aeronautical assets
- Cargo, Ground handling & Fuel Farm (CGF) assets have been classified as aeronautical in nature. Further, the Common Use Terminal Equipment (CUTE), Common Use Self Service (CUSS), Ground Power Unit (GPU) are classified as aeronautical assets in accordance with the AERA order no. 34/2019-2020 for the second control period dated 27th March 2020
- Capital Expenditure incurred to improve the service quality of the Airport except areas identified as non – aeronautical, which helps maintain the ASQ rating mandated by the project agreement are classified as aeronautical assets

Non-aeronautical Assets

- All assets that are exclusively utilised for non-airport/non-aeronautical activities as per schedule 3 of the concession agreement as well as AERA Act and the Guidelines issued from time to time are treated as non-aeronautical assets. Example are Duty Free, Retail, F&B etc.

Common Assets

- Assets for which the benefits or use can be attributed to both aeronautical and non-aeronautical services are classified as common assets
- Assets primarily used for provision of aeronautical services but are also used for provision of non-aeronautical services are classified as Common Assets. For instance, civil and electrical works for terminal building
- Assets which are used for general corporate purposes including legal, administration, and management affairs are treated as common assets.
- Common assets which are situated within the terminal buildings are apportioned to aeronautical activity in the ratio of the space allocated for aeronautical and non-aeronautical services. The percentages for aeronautical and non-aeronautical areas have been taken as 84.6% and 15.4% respectively
- Common assets which are situated outside the terminal buildings are apportioned based on an appropriate driver such as the gross asset ratio of aeronautical and non-aeronautical for the relevant year
- Other common assets such as the new office building, site office building and township are apportioned based on specific drivers such as the occupancy levels, critical / non-critical staff ratio among others.

Inadmissible Assets

Assets funded out of grant such as the assets funded out of ADFG (Advance Development Fund Grant) should be reduced completely from the RAB and not on proportionate basis. Such assets should be completely disallowed from any consideration towards the RAB.

Terminal Area Ratio

Pursuant to the AERA order no. 34/2019-2020 for the second control period dated 27th March 2020, AERA had considered the Terminal Area Ratio as Aero: 84.6% and Non – Aero: 15.4% respectively. CRIS has also considered the same Terminal Area Ratio for the purpose of the allocation of the relevant assets which is also submitted by HIAL in their submission for second control period. Therefore, CRIS has apportioned the relevant common assets for the provision of aeronautical and non-aeronautical services in the ratio of 84.6% and 15.4% respectively.

Observations on decommissioned stands

As per HIAL's submission, 12 stands had been decommissioned in the years 2018 and 2019. However, it is understood from HIAL's submission that the deletion of these assets has not been captured in the Fixed Asset

Registers. It is suggested that deletions on account of these assets be taken into consideration and therefore an amount of Rs. 14.91 crore be reduced from the aeronautical assets to reflect the deletion of the 12 stands.

4.3 Revised allocation of assets as per CRIS analysis

The different assets have been re-classified as per the asset allocation methodology detailed in the preceding section. The proposed classification vis-à-vis HIAL's classification is presented below –

Table 2: Proposed classification of key assets vis-à-vis HIAL's classification

S.no	Description	HIAL's classification	Proposed Classification
1.	Cargo Satellite Building	Non-Airport	Aero
2.	Cargo Terminal Building	Non-Aero	Aero
3.	Fuel Farm	Non-Aero	Aero
4.	Ground Power Unit	Non-Aero	Aero
5.	New Office Building(NOB)	Common	40% Non-Aero, 60% Common
6.	Site Office Building	Common	Common (87%-88%) ; Non Aero-(13%-12%) depending upon the leased out area for the year
7.	Township	Aero	75% - 80% Aero for individual year (based on critical/ non-critical staff occupancy)
8.	Passenger Terminal Building (Plant & machinery used for both aeronautical and non-aeronautical services)	Aero	Common
9.	Passenger Terminal Building – IT (IT systems used explicitly for non-aeronautical services)	Aero	Non-Aero
10.	Passenger Terminal Building – IT (IT systems used for both aeronautical and non-aeronautical services)	Aero	Common
11.	Passenger Terminal Building – Lightning	Aero	Common
12.	Interim Domestic Arrival Terminal (IDAT) – Buildings	Aero	Common
13.	Interim International Departure Terminal (IIDT) – Buildings, plant & machinery, Office equipment, electric installations etc.	Aero	Common
14.	Landscaping	Aero	Common

4.4 Summary of comparative analysis of the aeronautical additions

- Post reclassification of the total investment in aeronautical assets for FY17-FY21, the re-allocated aeronautical and non – aeronautical assets are as under:
 - Revised Aeronautical additions: Rs. 1317.69 crores.

- Revised Non – Aeronautical additions: Rs. 69.86 crores
- Total adjustment to aeronautical asset additions as per revised allocation : Rs. (0.53) crores
- The revised additions to the different asset categories have been presented and detailed in this report under sections 7.1, 7.2 and 7.3. The purpose of the asset allocation exercise was to compute and evaluate the justified additions to the RAB that should be considered towards tariff determination and in determining the true up of the RAB for the second control period.

A comparative analysis of the aeronautical additions as approved in the order no 34-2019/20 for the second control period dated 27th March 2020, as submitted by HIAL and as per the revised allocation and other adjustments is as depicted in the table given below:

Table 3: Summary of comparative analysis of the aeronautical additions

Aeronautical Additions							
S.no	Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	As per Tariff Order 34/2019-20 dated 27 th March 2020 – Second Control Period	183.88	108.4	350.72	1082.93	205.3	1,931.23
2.	As per HIAL's submission	36.57	60.11	559.84	491.04	170.66	1,318.22
3.	Deviation ((2)-(1))	(147.31)	(48.29)	209.12	(591.89)	(34.64)	(613.01)
4.	As per proposed allocation	46.59	60.43	577.47	489.65	143.57	1,317.69
5.	Deviation ((4)-(2))	10.02	0.32	17.63	(1.39)	(27.09)	(0.53)

4.5 Gross block based on revised asset allocation

Gross block for the second control period

Based on the revised allocation of the assets between aeronautical and non-aeronautical assets, the gross block for each of the year (FY17-FY21) was assessed as depicted in the table given below:

Table 4: Calculations and summary of gross block for FY17-FY21 as per revised allocation

As per proposed allocation						
Gross Block						
S.no	Particulars (Rs Crore)	2016-17	2017-18	2018-19	2019-20	2020-21
1.	Opening Gross Block	2711.57	2759.49	2816.90	3402.07	3791.89
	<i>Aero</i>	2459.25	2504.79	2554.91	3122.96	3515.39
	<i>Non-Aero</i>	252.32	254.69	261.98	279.10	276.48
2.	Additions	49.77	67.86	594.76	495.82	179.36
	<i>Aero</i>	46.59	60.43	577.47	489.65	143.57

As per proposed allocation						
Gross Block						
S.no	Particulars (Rs Crore)	2016-17	2017-18	2018-19	2019-20	2020-21
	Non-Aero	3.18	7.43	17.28	6.17	35.80
3.	Deletions¹	1.86	10.45	9.58	106.00	52.74
	Aero	1.05	10.31	9.42	97.22	51.99
	Non-Aero	0.81	0.14	0.16	8.78	0.75
4.	Closing Gross Block ((1)+(2)-(3))	2759.49	2816.90	3402.07	3791.89	3918.52
	Aero	2504.79	2554.91	3122.96	3515.39	3606.97
	Non-Aero	254.69	261.98	279.10	276.48	311.53
5.	ADFG Adjustment	107.00	107.00	107.00	107.00	107.00
	Aero	107.00	107.00	107.00	107.00	107.00
	Non-Aero	0.00	0.00	0.00	0.00	0.00
6.	Adjusted Closing Gross Block ((4)-(5))	2652.49	2709.90	3295.07	3684.89	3811.52
	Aero	2397.79	2447.91	3015.96	3408.39	3499.97
	Non-Aero	254.69	261.98	279.10	276.48	311.53
7.	Gross Block Ratio (On Adjusted Gross Block)					
	Aero	90.40%	90.33%	91.53%	92.50%	91.83%
	Non-Aero	9.60%	9.67%	8.47%	7.50%	8.17%
	Aero (Average)	91.32%				
	Non-Aero (Average)	8.68%				

¹ Deletions on account of the 12 stands have been taken into consideration for the respective years – 2018 (Rs. 6.34 crore) & 2019 (Rs. 8.57 crore);

5. Visit to RGIA, Hyderabad– Assessment of the progress of capital expenditure

The CRIS team visited RGIA, Hyderabad on 5th April 2021. The objective of the visit was to assess the progress of the capital expenditure for the Second Control Period vis-à-vis the submissions made by HIAL under the MYTP and to have a discussion with the HIAL tariff team on some of the key aspects of the MYTP submissions. Following the discussions, a site visit was organized by HIAL, where the existing and new infrastructure were shown to the CRIS Team by the concerned departments.

Following areas were covered in the site visit –

- East and West expansion areas (terminal areas)
- Interim international departures terminal
- Old international departures terminal &
- New approach road to the terminal

CRIS' observations pursuant to the site visit are as given below:

- i. The East and West expansion areas are meant to accommodate the increase in passenger traffic that has been registered over the past years and the expected growth in future. The departure area is laid out in-line with the current principles of passenger flow, allowing for walk-through retail shops. Such layout ensures enhanced footfalls and enables enhancement of revenues. The sections of duty free, general retail, food & beverage are laid out in cluster and deep in the piers format enabling last minute purchases by the passengers.
- ii. Passenger processing area including check-in, security & border control are also being expanded keeping in mind the passenger growth. As informed by the HIAL team, the expanded terminal will be seamlessly connected to the existing infrastructure following a modular expansion strategy.
- iii. To optimize operational efficiency in the processing area swing gates/baggage belts have been provided. This is expected to enable scale up of capacity in line with the increase in demand. The existing connection of the interim international departure terminal to the main terminal building will be severed once the expanded international terminal is commissioned.
- iv. Given that a new departure terminal is being built, HIAL envisages to either demolish the interim terminal or put it to alternate use including for Haj operations or as an office complex. HIAL has not yet finalized its plans with respect to the interim terminal.
- v. The existing international departures terminal had significantly less number of passengers during the visit, since there is a restriction on international flights and only a limited number of flights are permitted under the air-bubble scheme. The scale of operations and the congestion due to capacity limitation of the terminal could not be ascertained by the CRIS team due to this scenario. Further, due to significantly limited operations at the international terminals almost all the retail offerings were closed.
- vi. The new approach road connects the existing interim international departure terminal and the proposed terminal building. The road is also likely to serve non-airport facilities located at the airport.

6. Asset allocation as approved under Order No. 34/2019-20 for the Second Control Period dated 27th March 2020

6.1 Capital Expenditure as approved under Order No. 34/2019-20 for the Second Control Period

Authority in the aforementioned order had approved the additions to the RAB detailing the capital expenditure over the period of the Second Control Period i.e. FY17 – FY21. The approved capex was based on the independent study undertaken by RITES for the second control period. The details of the approved capex are as depicted in the table given below:

Table 5: Summary of approved capital expenditure as per Order No 34/2019-20 for the Second Control Period dated 27th March 2020

As per Tariff Order 34/2019-20 dated 27 th March 2020 – Second Control Period							
S.no	Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	Expansion Capex – A	0	0	302.12	1222.81	218.56	1743.49
2.	Runway Re-carpeting – B	0	53.03	25.28	25.28	0	103.59
3.	General Capex (incl. fuel farm & Solar project) – C - (Sum 3 (i) -3(ii))	197.89	61.05	34.13	25.52	22.49	341.1
i.	Solar power plant and fuel farm	47.15	-	-	-	-	47.15
ii.	Other General capex	150.76	61.05	34.13	25.52	22.49	293.96
4.	Total Capex (A+B+C)	197.89	114.08	361.53	1273.61	241.05	2188.18
5.	Aeronautical Portion	183.88	108.4	350.72	1082.93	205.3	1931.23

6.2 Details of the different Capex categories as approved under Order No. 34/2019-20 for the second control period

A - Expansion Capex

The classification accepted and approved by the Authority for the Second Control Period pertaining to the expansion capital expenditure is as follows:

Under the subject Order, the Authority considered expansion project capex and re-carpeting/re-layering of runways and taxiways. Further, the financing allowance was computed on the entire project cost. Also, the general & maintenance capex and the capex towards 8 MW solar power plant was approved by the Authority. The classification approved for some of the major assets is as presented below:

- Additional 4 lane ramp – Aeronautical asset
- Forecourt expansion – Common asset
- Terminal expansion – East module 1 – Common asset
- Pier expansion – East module 1 – Common asset
- Terminal expansion – West modules – Common asset
- Pier expansion – East module 2 – Common asset

- Pier expansion – West module – Common asset
- Apron development – Aeronautical asset

Based on the recommendation of the RITES report, the revised project cost as well as the implementation schedule approved by the Authority for the Second Control Period are as summarized in the table given below:

Table 6: Summary of expansion capex as approved in Order No. 34/2019-20 for the Second Control Period dated 27th March 2020

As per Tariff Order 34/2019-20 dated 27th March 2020 - Second Control Period								
Expansion Capex								
S.no	Particulars		2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	Additional 4-lane Ramp	Aero	0.00	55.04	55.04	0.00	0.00	110.08
2.	Forecourt Expansion	Common	0.00	40.19	5.74	0.00	0.00	45.93
3.	Terminal Expansion - East Module 1	Common	0.00	0.00	137.78	100.20	0.00	237.98
4.	Pier Expansion - East Module 1	Common	0.00	28.55	114.21	38.07	0.00	180.83
5.	Terminal Expansion - West Modules	Common	0.00	85.12	340.48	85.12	0.00	510.72
6.	Pier Expansion - East Module 2	Common	0.00	0.00	89.91	112.39	0.00	202.30
7.	Pier Expansion - West Module	Common	0.00	0.00	56.19	134.86	11.24	202.30
8.	Apron Development	Aero	0.00	61.82	61.82	0.00	0.00	123.63
9.	Capital Expenditure		0.00	270.72	861.17	470.64	11.24	1613.77
10.	Capitalized Works		0.00	0.00	279.64	1131.83	202.30	1613.77
11.	Financing Allowance		0.00	13.34	55.56	51.52	9.30	129.72
12.	Commissioned assets		0.00	0.00	302.12	1222.81	218.56	1743.49
13.	Percentage allocation of commissioned assets	% Aero	0%	0%	97%	85%	85%	
		% Non-Aero	0%	0%	3%	15%	15%	
		% Common	0%	0%	0%	0%	0%	
14.	Aeronautical Portion (A)		0.00	0.00	294.48	1034.50	184.90	1513.88
15.	Non-Aero Portion (B)		0.00	0.00	7.64	188.31	33.66	229.61
16.	Common Portion (C)		0.00	0.00	0.00	0.00	0.00	0.00

Out of total expansion capital expenditure approved, the aeronautical portion stood at Rs. 1513.88 crore while the non-aeronautical portion stood at Rs. 229.61 crore.

B - Runway Re-carpeting

The approved cost against the runway re-carpeting works is as summarized in the table given below:

Table 7: Summary of capex for runway re-carpeting as approved in Order No. 34/2019-20 for the Second Control Period dated 27th March 2020

As per Tariff Order 34/2019-20 dated 27th March 2020 - Second Control Period								
Runway Re-carpeting								
S.no	Particulars		2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	Runway Re-carpeting	Aero	0	53.03	25.28	25.28	0	103.59
2.		% Aero	100%	100%	100%	100%	0%	
3.		% Non-Aero	0%	0%	0%	0%	0%	
4.		% Common	0%	0%	0%	0%	0%	
5.	Aeronautical Portion (D)		-	53.03	25.28	25.28		103.59
6.	Non-Aero Portion (E)		0.00	0.00	0.00	0.00	0.00	0.00
7.	Common Portion (F)		-	-	-	-		0.00

C - General Capex

The approved project cost for the fuel farm, solar project and the general capital expenditure is presented in the subsequent sections.

Solar power plant and fuel farm

Table 8: Summary of capex for solar power plant and fuel farm as approved in Order No. 34/2019-20 for the Second Control Period dated 27th March 2020

As per Tariff Order 34/2019-20 dated 27th March 2020 - Second Control Period								
Solar Power Plant & Fuel Farm								
S.no	Particulars		2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	Solar Power Plant	Aero	44.00	0	0	0	0	44.00
2.	Fuel Farm	Aero	3.15	0	0	0	0	3.15
3.		% Aero	100%	100%	100%	100%	0%	
4.		% Non-Aero	0%	0%	0%	0%	0%	
5.		% Common	0%	0%	0%	0%	0%	
6.	Aeronautical Portion (G)		47.15	-	-	-		47.15
7.	Non-Aero Portion(H)		-	-	-	-	-	0.00
8.	Common Portion (I)		-	-	-	-	-	0.00

Other General Capex

The following table provides a summary of the other general capex as approved under the Order No. 34/2019-20 for the second control period dated 27th March 2020.

Table 9: Summary of other general capex as approved in Order No. 34/2019-20 for the second control period dated 27th March 2020

As per Tariff Order 34/2019-20 dated 27th March 2020 - Second Control Period								
Other General Capex								
S.no	Particulars		2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	General capex	Common	150.76	61.05	34.13	25.52	22.49	293.96
2.		% Aero	0%	0%	0%	0%	0%	
3.		% Non-Aero	0%	0%	0%	0%	0%	
4.		% Common	100%	100%	100%	100%	100%	
5.	Aeronautical Portion (K)		-	-	-	-	-	0.00
6.	Non-Aero Portion (L)		-	-	-	-	-	0.00
7.	Common Portion (M)		150.76	61.05	34.13	25.52	22.49	293.96

6.3 Summary

As per the Order No. 34/2019-20 for the Second Control Period dated 27th March 2020, the approved additions by the Authority over the Second Control Period (FY17-FY21) were Rs. 2188.18 crore, out of which the aeronautical additions stood at Rs. 1931.23 crore while the non-aeronautical additions stood at Rs. 256.95 crore

7. Asset allocation by HIAL for the second control period

7.1 Methodology and principles for asset allocation

As part of its submission under the second control period, HIAL has provided the approach and methodology adopted for allocation of assets. The key aspects from HIAL's approach and methodology for allocation of assets are as given below:

Aeronautical Assets

Aeronautical assets are assumed to be those assets which are necessary or required for providing the below mentioned aeronautical services at the airport and all such assets that HIAL may procure in accordance with directions of GOI for or in relation to provision of any of the reserved activities including intangible assets and other assets which are directly related to the aeronautical services. As per HIAL's submission, some of the identified aeronautical services are as follows:

- Aerodrome control services
- Airfield
- Airfield lightning and associated works
- Runways
- Taxiways
- Apron and aircraft parking area
- Remote parking stands
- Air traffic control building and associated assets
- Special handling terminal – HAJ
- Airport seating
- Airside access roads
- Connectivity roads
- Lifts, escalators & elevators
- Flight information and public address system
- Compound wall
- Traffic forecourts
- Rescue and firefighting service
- Air field crash fire service
- Bird scaring system
- Passenger Boarding Bridges
- Baggage handling system and hold baggage in the x-ray screening
- Visual docking and guidance system
- Operational vehicle like rubber removal machine, runway sweepers, golf carts, trolley pulling scooters
- Airport Operation and Control Centre

- Airport Operational Database
- Airport Community Network
- Airport Management Administrative Network
- Other IT system for Airport Operation
- Surface Drainage
- Plumbing and sewerage system
- Water and Sewage treatment facilities
- Signage
- Waste disposal
- Information desks
- Emergency services
- General maintenance and upkeep of the airport
- Customs and immigration halls
- VVIP and VIP lounges
- Public Transport Centre
- Interim International Departure Terminal (IIDT) & Interim Domestic Arrival Terminal (IDAT)
- Landscaping assets
- Facilities for the disabled and other special needs people
- Any other service and facility deemed to be necessary for the safe and efficient operation of the Airport

Non - aeronautical Assets

Non-aeronautical assets are those which are necessary for the performance of the non-aeronautical services at the airport. Some of the key non –aeronautical services, as outlined in the concept document, are summarized below:

- Car park, airline lounges and other commercial lounges
- General retail facilities
- Vending machine
- Vehicle fuelling services
- Kirby sheds – Temporary office spaces
- Flight catering services
- Flight catering services
- Duty Free
- Ground handling services including Ground Power Unit
- Cargo Handling Services
- Fuel Farm Services
- Porter Services
- Any other services or facility other than aeronautical services

Common Assets

Common assets are those assets which are not identifiable/categorized into either aeronautical asset or non-aeronautical assets. An indicative list of common assets, as submitted by HIAL, is summarized below:

- Passenger Terminal Building
- Heating ventilation and Air conditioning system for PTB
- Office Building (including furniture and fixtures) and associated works
- Quarters for outside security personnel
- Common hardware, software and communication system
- Central Stores Building

Terminal Area Ratio

HIAL has submitted terminal building ratio for aeronautical and non-aeronautical services as 84.6% and 15.4% respectively.

Apportionment of common assets: The common assets have been apportioned into aeronautical and non-aeronautical assets on the following basis.

Table 10: Summary of asset allocation methodology as per HIAL's submission

S.no	Description of the Asset	Basis of the Apportionment
1.	Passenger Terminal Building (PTB) – Area allotted for airline lounges and other commercial lounges, general retail facilities, office spaces etc. is treated as non-aero asset and remaining area as aero asset	Area of terminal building used for aeronautical and non-aeronautical services (i.e. 84.6% and 15.4% respectively)
2.	Heating ventilation and Air Conditioning system for Passenger Terminal Building in the ratio of the PTB area classified into aero & non-aero	Area of terminal building used for aeronautical and non-aeronautical services (i.e. 84.6% and 15.4% respectively)
3.	Site Office Building (including furniture & fixtures) and associated works. Common area is allocated in the ratio of total aero and non-aero assets	Aero & Non aero assets ratio Any incidental income received as rent from the available space at the site office building, pending its utilisation for common airport activities, to be netted off against total operating expenses
4.	New office building (including furniture & fixtures) and associated works	Aero & Non aero assets ratio Any incidental income received as rent from the available space at the new office building, pending its utilisation for common airport activities, to be netted off against total operating expenses
5.	Quarters for outside security personnel	Aero and Non-Aero assets ratio
6.	Common hardware, software and communication system	Aero and Non-Aero assets ratio
7.	Central Stores Building	Aero and Non-Aero assets ratio

Non-Airport Assets

HIAL, in its submission, has also outlined activities which are classified as non-airport activities. As per HIAL such activities do not fall in the category of aeronautical or non-aeronautical activities.

Table 11: Summary of non-airport assets as per HIAL's submission

S.no	Description of the Asset	Classification
1.	Commercial offices for freight forwarders/ consolidators/agents	Non- Airport
2.	Fuel Station located at Landside	Non- Airport

7.2 Allocation of assets

Capital Expenditure as submitted by HIAL

HIAL in its MYTP for the Third Control Period has submitted the true up of the RAB for the second control period as depicted in the table given below:

Table 12: Summary of true up of capex as per HIAL's submission

As per HIAL's submission							
S.no	Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	Expansion Capex	0	0	328.87	416.55	25.62	771.04
2.	Runway Re-carpeting & AGL upgrade	0	0	0	0	66.44	66.44
3.	General Capex	49.76	67.85	265.89	79.26	87.3	550.06
4.	Total Capex	49.76	67.85	594.76	495.81	179.36	1387.54
5.	Aeronautical Portion	36.57	60.09	559.84	491.04	170.66	1318.20

True up for capex incurred towards expansion project as per HIAL's submission

HIAL in its submission outlined that the Hyderabad Airport witnessed significant traffic growth during FY16-19 rendering the earlier expansion plan to be revisited in order to meet the growing demand. Accordingly, HIAL revised the capacity expansion plan and initiated capacity expansion to 34 MPPA to cater to the growth in its Third Control Period (FY22-FY26).

Additions to RAB on account of this capitalization have been considered. The summary of expansion capex as per HIAL's submission is as depicted in the table given below:

Table 13: Summary of expansion capex as per HIAL's submission

As per HIAL's submission								
Expansion Capex								
S.no	Particulars		2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	Additional 4-lane Ramp	Aero	0.00	60.76	66.02	18.26	1.28	146.32
2.	Forecourt Expansion	Common	0	2.65	551.95	406.49	743.21	1704.3
3.	Terminal Expansion - East Module 1	Common						
4.	Pier Expansion - East Module 1	Common						
5.	Terminal Expansion - West Modules	Common						

As per HIAL's submission								
Expansion Capex								
S.no	Particulars		2016-17	2017-18	2018-19	2019-20	2020-21	Total
6.	Pier Expansion - East Module 2	Common						
7.	Pier Expansion - West Module	Common						
8.	Apron Development	Aero		67.71	121.48	558.67	96.04	843.9
9.	Road Infrastructure	Aero				9.25	5.22	14.47
10.	Preliminaries, Insurance, PMT and Design	Common		35.75	39.52	51.77	36.23	163.27
11.	Capital Expenditure		0.00	166.87	778.97	1044.45	881.98	2872.27
12.	Capitalized Works			0.00	319.76	385.88	25.62	731.26
13.	Financing Allowance			0.00	9.11	30.67	0.00	39.78
14.	Commissioned assets		0.00	0.00	328.87	416.55	25.62	807.99
15.	<i>Percentage allocation of the commissioned assets</i>	% Aero	0%	0%	100%	100%	100%	
		% Non-Aero	0%	0%	0%	0%	0%	
		% Common	0%	0%	0%	0%	0%	
16.	Aeronautical Portion		0.00	0.00	328.87	416.55	25.62	771.04

True up for capex incurred towards runway re-carpeting as per HIAL's submission

HIAL in its submission has highlighted that in order to ensure minimum operational impact during the implementation of the project, the resurfacing initiative was deferred till the main expansion project is commenced.

Further, HIAL in its submission highlighted that it has also planned to upgrade the existing Airfield Ground Lighting (AGL) System and upgrade the main runway (09R 27L) and associated taxiways/taxi lane to CAT-II AGL system, and upgrade the secondary runway to CAT-I in order to meet operational efficiency and ensure smooth operations.

Table 14: Summary of true up of pavement enhancement and lightning upgrade works as per HIAL's submission

As per HIAL's submission							
S.no	Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	Airfield Pavement Enhancement	0	0	0	0	66.44	66.44
2.	Airfield Ground Lighting Upgrade	0	0	0	0		
3.	Total Capex	0	0	0	0	66.44	66.44
4.	Aeronautical Portion	0	0	0	0	66.44	66.44

True up for general capex as per HIAL's submission

HIAL has submitted that in order to address the growing air traffic and sustaining the service quality and passenger experience, it undertook various interim initiatives during the subject period to cater to annual passenger growth while embarking on the expansion as long term solution. The interim measures included strategies/projects to sweat the assets to the maximum while sustaining the world class service quality and passenger experience such as construction of an Interim International Departure Terminal (IIDT) and Interim Domestic Arrival Terminal (IDAT) that helped in creating additional terminal capacity.

Further, the general capex for the second control period included capex towards all the above projects along with the capex towards the maintenance and upgrade of existing facilities.

Table 15: Summary of capex for solar power plant, IIDT & IDAT as per HIAL's submission

As per HIAL's submission								
Solar Power Plant, IIDT & IDAT								
S.no	Particulars		2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	Solar Power Plant	Aero			22.23		-	22.23
2.	IIDT & IDAT	Aero			104.4	3.6		108.00
3.		% Aero	100%	100%	100%	100%	0%	
4.		% Non-Aero	0%	0%	0%	0%	0%	
5.		% Common	0%	0%	0%	0%	0%	
6.	Aeronautical Portion		-	-	126.63	3.60	-	130.23
7.	Non-Aero Portion		-	-	-	-		0.00
8.	Common Portion		-	-	-	-		0.00

Table 16: Summary of general capex as per HIAL's submission

As per HIAL's submission								
General Capex								
S.no	Particulars		2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	General capex		49.76	67.85	139.26	75.66	87.31	419.84
2.		% Aero	73%	89%	75%	94%	90%	
3.		% Non-Aero	26%	11%	18%	6%	10%	
4.		% Common	0%	0%	0%	0%	0%	
5.	Aeronautical Portion		36.57	60.09	104.34	70.89	78.60	350.49

The true-up of the additions over the second control period as submitted by HIAL are summarised under the relevant categories as given below:

Table 17: Summary of asset additions as per HIAL's submission

	As per HIAL's submission																			
	Asset Additions																			
	2016-17				2017-18				2018-19				2019-20				2020-21			
<i>in Rs Crore</i>	Aero	Non- Aero	Non- Airport	Total	Aero	Non- Aero	Non- Airport	Total	Aero	Non- Aero	Non- Airport	Total	Aero	Non- Aero	Non- Airport	Total	Aero	Non- Aero	Non- Airport	Total
Gross Block Additions	36.56	13.19	0.03	49.78	60.11	7.75	0.00	67.86	559.85	24.97	9.93	594.75	491.04	4.76	0.01	495.81	170.66	8.70	0.00	179.36

Note: Addition to the gross block is excluding the AS 11 assets. The same has been disallowed while assessing the true-up for Second Control Period

7.3 Summary

The asset allocation methodology adopted by HIAL is based on its understanding of the project agreements and has been summarised in section 6.1 of this report.

As part of the MYTP submissions, HIAL has assessed the true up of total investments for the second control period as Rs. 1387.54 crore, out of which aeronautical additions are Rs. 1318.20 crore, non –aero additions are Rs. 59.37 crore and non-airport additions are Rs. 9.97 crore.

8. Assessment of actual capital addition during the second control period

8.1 Revised methodology for asset allocation and reclassification

Drawing upon the AERA guidelines, previous tariff orders and industry practices, CRIS developed an asset allocation criteria for classification of assets into aeronautical, non-aeronautical and common assets.

The key aspects of the asset allocation methodology adopted for asset allocation and classification are as given below:

Aeronautical Assets

- All assets that are exclusively utilised for airport/aeronautical activities as per schedule 3 of the concession agreement are treated as aeronautical assets
- Cargo, Ground handling & Fuel Farm (CGF) assets have been classified as aeronautical in nature. Further, the Common Use Terminal Equipment (CUTE), Common Use Self Service (CUSS), Ground Power Unit (GPU) are classified as aeronautical assets in accordance with the AERA order no. 34/2019-2020 for the Second Control Period dated 27th March 2020
- Capital expenditure incurred to improve the service quality of the airport except areas identified as non - aeronautical, which helps maintain the ASQ rating mandated by the project agreement are classified as aeronautical assets

Non-aeronautical Assets

- All assets that are exclusively utilised for non-airport/non-aeronautical activities, as per schedule 3 of the concession agreement as well as the AERA Act and the Guidelines issued from time to time, are treated as non-aeronautical assets such as Duty Free, Retail, F&B etc.

Common Assets

- Assets for which the benefits can be attributed to both aeronautical or non-aeronautical services are classified as common assets
- Assets primarily used for provision of aeronautical services but are also used for provision of non-aeronautical services are classified as Common Assets. For instance, civil and electrical works for terminal building
- Assets which are used for general corporate purposes including legal, administration, and management affairs are treated as common assets
- Common assets which are situated within the terminal buildings are apportioned to aeronautical activity in the ratio of the space allocated for aeronautical and non-aeronautical services. The percentages for aeronautical and non-aeronautical areas have been taken as 84.6% and 15.4% respectively. Common assets which are situated outside the terminal buildings are apportioned based on an appropriate driver such as the gross asset ratio of aeronautical and non-aeronautical for the relevant year
- Other common assets such as the new office building, site office building and township are apportioned based on specific drivers such as the occupancy levels, critical / non-critical staff ratio among others

Inadmissible Assets

Assets funded out of grant such as the assets funded out of ADFG (Advance Development Fund Grant) should be reduced completely from the RAB and not on proportionate basis. Such assets should be completely disallowed from any consideration towards the RAB.

Terminal Area Ratio

Pursuant to the AERA order no. 34/2019-2020 for the second control period dated 27th March 2020, AERA had considered the terminal area ratio as Aero: 84.6% and Non – Aero: 15.4% respectively. CRIS has also considered the same terminal area ratio for the purpose of the allocation of the relevant assets which is also submitted by HIAL in their submission for second control period. Therefore, CRIS has apportioned the relevant common assets for the provision of aeronautical and non-aeronautical services in the ratio of 84.6% and 15.4% respectively.

Observations on decommissioned stands

As per HIAL's submission, 12 stands had been decommissioned in the years 2018 and 2019. However, deletion of these assets has not been captured in the Fixed Asset Registers. It is suggested that deletions on account of these assets be taken into consideration and therefore an amount of Rs. 14.91 crore be reduced from the aeronautical assets to reflect the deletion of the 12 stands.

As HIAL did not follow an inventory based approach and did not maintain separate costs for the stands, the cost pertaining to these 12 stands was not available. CRIS, based on the normative cost approved by AERA (Rs. 4700 per sqm) vide Order No. 07/2016-17 dated 6th June 2016 and the normative area requirement (3700 sqm per aircraft), calculated the cost for these 12 stands as ~Rs. 21 crore in 2008. This cost was further brought to 2018 and 2019 levels by using the depreciation rate of 3.34% as prescribed by AERA.

It is suggested to remove the cost pertaining to these 12 stands from the assets and therefore an amount equal to Rs. 6.34 crore and Rs. 8.57 crore has been deleted from aeronautical assets for the financial year 2018 and 2019 respectively.

8.2 Asset allocation and reclassification for FY17 to FY21

As per the revised principles for asset allocation detailed in the above section, the summary of classification of the key assets is detailed in the table below -

Table 18: Summary of classification of key assets

S.no	Description	HIAL's classification	Proposed Classification
1.	Cargo Satellite Building	Non-Airport	Aero
2.	Cargo Terminal Building	Non-Aero	Aero
3.	Fuel Farm	Non-Aero	Aero
4.	Ground Power Unit	Non-Aero	Aero
5.	New Office Building(NOB)	Common	40% Non-Aero, 60% Common
6.	Site Office Building	Common	Common (87%-88%) ; Non Aero-(13%-12%) depending upon the leased out area for the year
7.	Township	Aero	75% - 80% Aero for individual year (based on critical/ non-critical staff occupancy)

S.no	Description	HAL's classification	Proposed Classification
8.	Passenger Terminal Building (Plant & machinery used for both aeronautical and non-aeronautical services)	Aero	Common
9.	Passenger Terminal Building – IT (IT systems used explicitly for non-aeronautical services)	Aero	Non-Aero
10.	Passenger Terminal Building – IT (IT systems used for both aeronautical and non-aeronautical services)	Aero	Common
11.	Passenger Terminal Building – Lightning	Aero	Common
12.	Interim Domestic Arrival Terminal (IDAT) - Buildings	Aero	Common
13.	Interim International Departure Terminal (IIDT) – Buildings, plant & machinery, Office equipment, electric installations etc.	Aero	Common
14.	Landscaping	Aero	Common

Based on the above assumptions and allocation as per the tariff guidelines, the assets have been adjusted and reclassified for FY17 to FY21.

Fixed asset adjustment for FY17 undertaken as per the methodology illustrated above is summarised in the table given below:

Table 19: Summary of proposed adjustments to additions to RAB for FY17

Fixed asset adjustment for FY17					
	Fixed Asset Adjustment				Rs Crore
1.	Total Investment in Fixed Assets for the year (as per FAR of HIAL)				49.77
i.	Aeronautical Assets (100% Aero + Apportioned from Common assets)				36.56
ii.	Non- Aeronautical Assets (100% Non - Aero + Apportioned from Common assets)				13.19
iii.	Non-Airport Assets				0.03
2.	Investments in RAB for the year (as per classification by HIAL)				36.56
Proposed Adjustments to RAB					
3.	Asset Category	Description	HIAL's classification	Proposed Classification	Impact on RAB addition
i.	Plant & Machinery	Cargo satellite Building	Non - Airport	Aero	0.03
ii.	Buildings, IT systems & Software	Cargo Terminal Building	Non - Aero	Aero	0.05
iii.	Buildings, IT systems & Software	Fuel Farm	Non - Aero	Aero	10.54
iv.	Plant & Machinery	Ground Power Unit	Non - Aero	Aero	0.11

Fixed asset adjustment for FY17					
	Fixed Asset Adjustment				Rs Crore
v.	IT system, Electrical Installation, Office Equipment, Furniture & Fixtures	New Office Building(NOB)	Common	Non-Aero - 40%, Common-60%	(0.18)
vi.	Depending upon the location of the asset the classification has been modified across all asset categories	Others	NA	NA	(0.09)
vii.	Depending upon the usage of the asset the classification has been modified across all asset categories	Passenger Terminal Building	NA	NA	(0.07)
viii.	Depending upon the usage of the asset the classification has been modified across all asset categories	Passenger Terminal Building – IT	NA	NA	(0.02)
ix.	Electrical Installations	Passenger Terminal Building – Lightning	Aero	Common	(0.34)
x.	Office Equipment	Site Office Building	Common	Common - 88% Non-Aero - 12%	0.00
xi.	Plant & machinery	Tow nship	Aero	Aero - 75% , Non Aero- 25%	(0.00)
4.	Total Proposed Adjustments to RAB (Sum of 3 (i) - 3 (xi))				10.03
5.	Adjusted Investment in RAB during the year ((2)+(4))				46.58

Fixed asset adjustment for FY18 undertaken as per the methodology illustrated above is summarised in the table given below::

Table 20: Summary of proposed adjustments to additions to RAB for FY18

Fixed asset adjustment for FY18					
	Fixed Asset Adjustment				Rs Crore
1.	Total Investment in Fixed Assets for the year (as per FAR of HIAL)				67.86
i.	Aeronautical Assets (100% Aero + Apportioned from Common assets)				60.11
ii.	Non- Aeronautical Assets (100% Non - Aero + Apportioned from Common assets)				7.75
iii.	Non-Airport Assets				0.00
2.	Investments in RAB for the year (as per classification by HIAL)				60.11
Proposed Adjustments to RAB					
3.	Asset Category	Description	HIAL's classification	Proposed Classification	Impact on RAB addition
i.	Plant Machinery, IT Systems	Fuel Farm	Non - Aero	Aero	3.003
ii.	Buildings	Ground Handling	Non - Aero	Aero	0.003
iii.	Buildings	Ground Power Unit	Non - Aero	Aero	0.083

Fixed asset adjustment for FY18					
	Fixed Asset Adjustment				Rs Crore
iv.	Depending upon the location of the asset the classification has been modified across all asset categories	Hardware	NA	NA	(0.008)
v.	Depending upon the location of the asset the classification has been modified across all asset categories	Others	NA	NA	(0.321)
vi.	Plant Machinery, IT Systems, Furniture & Fixtures, Electrical Installation	New Office Building (NOB)	Common	Non Aero 40% Common 60%	(2.411)
vii.	Office Equipment	Site Office Building	Common	Common - 88% Non-Aero - 12%	(0.000)
viii.	Plant Machinery/Office Equipment	Township	Aero	Aero - 80% , Non Aero- 20%	(0.047)
ix.	Reconciliation due to adjustments in FAR				0.02
4.	Total Proposed Adjustments to RAB (Sum of 3 (i)- 3 (ix))				0.32
5.	Adjusted Investment in RAB during the year ((2)+(4))				60.43

Fixed asset adjustment for FY19 undertaken as per the methodology illustrated above is summarised in the table given below::

Table 21: Summary of proposed adjustments to additions to RAB for FY19

Fixed asset adjustment for FY19					
	Fixed Asset Adjustment				Rs Crore
1.	Total Investment in Fixed Assets for the year (as per FAR of HIAL)				594.76
i.	Aeronautical Assets (100% Aero + Apportioned from Common assets)				559.85
ii.	Non- Aeronautical Assets (100% Non - Aero + Apportioned from Common assets)				24.97
iii.	Non-Airport Assets				9.93
2.	Investments in RAB for the year (as per classification by HIAL)				559.85
Proposed Adjustments to RAB					
3.	Asset Category	Description	HIAL's classification	Proposed Classification	Impact on RAB addition
i.	Building, Plant & Machinery, Electrical Installation, IT System	Cargo Satellite Building	Non-Airport	Aero	9.93
ii.	Plant & machinery, Office Equipment	Fuel Farm	Non Aero	Aero	17.99
iii.	Buildings	IDAT	Aero	Common	(3.11)

Fixed asset adjustment for FY19					
	Fixed Asset Adjustment				Rs Crore
iv.	Buildings, Plant & Machinery, Furniture & Fixtures, Electric Installation, Office Equipment	IIDT	Aero	Common	(6.00)
v.	Plant & machinery, Office Equipment	Landscaping	Aero	Common	(0.18)
vi.	Building, IT system, Office Equipment, Furniture and Fixtures, Vehicles	New Office Building(NOB)	Common	Non-Aero - 40%, Common-60%	(0.59)
vii.	IT System	Passenger Terminal Building – IT	Aero	Common	(0.02)
viii.	Plant & machinery, IT system, software, office equipment, electrical installation	Site Office Building	Common	Common - 87% Non Aero - 13%	0.00
ix.	Plant & machinery, Office Equipment	Tow nship	Aero	Aero -80% Non Aero - 20%	(0.02)
x.	Depending upon the location of the asset, the classification has been modified across all asset categories	Others	NA	NA	(0.07)
xi.	Depending upon the usage of the asset, the classification has been modified across all asset categories	PTB	NA	NA	0.02
xii.	Assets on land side categorized under Aero	Aero	Aero	Non-Aero	(0.47)
xiii.	On account of change in gross asset ratio	Raxa	NA	NA	0.11
4.	Total Proposed Adjustments to RAB (Sum of 3 (i) - 3 (xi))				17.62
5.	Adjusted Investment in RAB during the year ((2)+(4))				577.47

Fixed asset adjustment for FY20 undertaken as per the methodology illustrated above is summarised in the table given below::

Table 22: Summary of proposed adjustments to additions to RAB for FY20

Fixed asset adjustment for FY20					
	Fixed Asset Adjustment				Rs Crore
1.	Total Investment in Fixed Assets for the year (as per FAR of HIAL)				495.82
i.	Aeronautical Assets (100% Aero + Apportioned from Common assets)				491.04
ii.	Non- Aeronautical Assets (100% Non - Aero + Apportioned from Common assets)				4.76
iii.	Non-Airport Assets				0.01
2.	Investments in RAB for the year (as per classification by HIAL)				491.04
Proposed Adjustments to RAB					

Fixed asset adjustment for FY20					
	Fixed Asset Adjustment				Rs Crore
3.	Asset Category	Description	HAL's classification	Proposed Classification	Impact on RAB addition
i.	Plant & Machinery	Cargo Satellite Building	Non-Airport	Aero	0.01
ii.	Buildings, Plant Machinery, Electrical Installation	Fuel Farm	Non - Aero	Aero	0.28
iii.	Buildings, IT System, Electrical Installation	IIDT	Aero	Common	(0.33)
iv.	IT System	Landscaping	Aero	Common	(0.00)
v.	Plant Machinery, IT Systems, Furniture & Fixtures, Electrical Installation, Software, Office equipment	New Office Building (NOB)	Common	Non Aero 40% Common 60%	(1.61)
vi.	Depending upon the location of the asset, the classification has been modified across all asset categories	Others	NA	NA	0.59
vii.	Electrical Installations	PTB - Aero	Aero	Common	(0.34)
viii.	On account of change in gross asset ratio	Raxa	NA	NA	0.02
ix.	Plant Machinery, IT Systems, Furniture & Fixtures, Electrical Installation, Software, Office equipment	Site Office Building	Common	Common - 87% Non-Aero - 13%	0.00
x.	IT System	Township	Aero	Aero - 80% , Non Aero- 20%	(0.00)
4.	Total Proposed Adjustments to RAB (Sum of 3 (i)- 3 (x))				(1.39)
5.	Adjusted Investment in RAB during the year (2)+(4)				489.65

Fixed asset adjustment for FY21 undertaken as per the methodology illustrated above is summarised in the table given below::

Table 23: Summary of proposed adjustments to additions to RAB for FY21

Fixed asset adjustment for FY21					
	Fixed Asset Adjustment				Rs Crore
1.	Total Investment in Fixed Assets for the year				179.36
i.	Aeronautical Assets (100% Aero + Apportioned from Common assets)				170.66
ii.	Non- Aeronautical Assets (100% Non - Aero + Apportioned from Common assets)				8.70

Fixed asset adjustment for FY21					
	Fixed Asset Adjustment				Rs Crore
iii.	Non-Airport Assets				
2.	Investments in RAB for the year (as per HIAL submission)				
	Proposed Adjustments to RAB				
3.	Asset Category	Description	HIAL's classification	Proposed Classification	Impact on RAB addition
i.	IT System	Ground Handling	Common	Aero	0.00
ii.	Depending upon the location of the asset the classification has been modified across all asset categories	Hardware	NA	NA	0.04
iii.	Buildings	IIDT	Aero	Common	(0.11)
iv.	Plant Machinery, IT Systems, Furniture & Fixture, Building, Office equipment	New Office Building (NOB)	Common	Non Aero 40% Common 60%	0.29
v.	Depending upon the location of the asset the classification has been modified across all asset categories	Others	NA	NA	0.38
vi.	Buildings, Electrical Installations, Plant & Machinery	PTB , PTB Communication	Aero	Common	(0.15)
vii.	Buildings, Plant & Machinery	Reservoir at Hotel	Aero	Non-Aero	(27.47)
viii.	IT Systems	Site Office Building	Common	Common 87% Non-Aero 13%	(0.00)
ix.	Office Equipment	Tow nship	Aero	Aero - 80% , Non Aero- 20%	(0.00)
x.	Buildings	Buildings	Aero	Common	(0.04)
xi.	Buildings, Plant & Machinery	Civil w orks, others	Aero	Common	(0.04)
4.	Total Proposed Adjustments to RAB (Sum of 3 (i)- 3 (xi))				
5.	Adjusted Investment in RAB during the year ((2)+(4))				

8.3 Summary

The summary of year wise additions under the respective categories is summarised in the table given below:

Table 24: Summary of year wise additions over FY17 - FY21

As per proposed allocation																			
Asset Additions (Gross Block Additions) in Rs. crore																			
2016-17				2017-18				2018-19				2019-20				2020-21			
Aero	Non-Aero	Non-Airport	Total	Aero	Non-Aero	Non-Airport	Total	Aero	Non-Aero	Non-Airport	Total	Aero	Non-Aero	Non-Airport	Total	Aero	Non-Aero	Non-Airport	Total
46.59	3.18	0.00	49.77	60.43	7.43	0.00	67.86	577.47	17.28	0.00	594.75	489.65	6.17	0.00	495.82	143.57	35.80	0	179.37

- Post reclassification and other adjustments made to the total investment in aeronautical assets for FY17-FY21 (as detailed in Section 7.1, and 7.2), the re-segregated aeronautical and non – aeronautical assets are as under:
 - Adjusted total investment in aeronautical assets towards RAB as per proposed allocation: Rs. 1317.69 crores.
 - Additions of Non – aeronautical assets : Rs. 69.86 crores
 - Total adjustment to the investment in aeronautical asset additions as per revised allocation : Rs. (0.53) crore

9. Computation of the gross block ratio

9.1 Gross block approved by the Authority as per order no 34/2019-20 for the second control period dated 27th March 2020

Closing gross block for the first control period as per Authority

The gross block ratio (aero: non-aero ratio) for the closing of the first control period (31st March 2016) as per the Authority stood at 90.69%:9.31% (Aero gross block – Rs. 2459.25; Non-Aero gross block – Rs. 252.32). The same gross block (aero and non-aero) were used as the opening gross blocks of the second control period.

Table 25: Summary of gross block for FY16 (closing of the first control period)

As per Authority		
Gross Block		
S.no	Particulars (Rs Crore)	Amount/Ratio
1.	Gross Block (as on 31st March 2016)	2711.57
	Aero	2459.25
	Non-Aero	252.32
2.	Gross Block Ratio (as on 31st March 2016)	
	Aero	90.69%
	Non-Aero	9.31%

9.2 Gross block as per HIAL submission

Gross block for the second control period – HIAL's submission

The summary of the gross block as per HIAL's submission for the second control period is presented in the below given table.

Table 26: Summary of gross block for FY17-FY21 (HIAL's submission)

As per HIAL's submission ²						
Gross Block						
S.no	Particulars (Rs Crore)	2016-17	2017-18	2018-19	2019-20	2020-21
1.	Gross Block	2759	2823	3417	3807	3933
	Aero	2277	2333	2892	3287	3453
	Non-Aero	456	463	488	485	446
	Non-Airport	27	27	37	35	35
2.	Gross Block Ratio					
	Aero	82.51%	82.64%	84.64%	86.36%	87.77%
	Non-Aero	16.52%	16.41%	14.29%	12.73%	11.34%

² Excluding AS 11 assets and ADFG effect

As per HIAL's submission ²						
Gross Block						
S.no	Particulars (Rs Crore)	2016-17	2017-18	2018-19	2019-20	2020-21
	Non-Airport	0.97%	0.95%	1.07%	0.92%	0.89%

9.3 Gross block as per revised allocation

Gross block for the second control period – Revised allocation

Based on the revised allocation of the assets between aeronautical and non-aeronautical assets, the gross block for each of the year (FY17-FY21) was assessed as presented in the below given table. Further, the adjustment pertaining to ADFG assets was also taken into account and the same has been reduced completely from the aeronautical assets in line with the treatment approved in previous orders.

Table 27: Calculations and summary of gross block for FY17-FY21 as per revised allocation

As per proposed allocation						
Gross Block						
S.no	Particulars (Rs Crore)	2016-17	2017-18	2018-19	2019-20	2020-21
1.	Opening Gross Block	2711.57	2759.49	2816.90	3402.07	3791.89
	Aero	2459.25	2504.79	2554.91	3122.96	3515.39
	Non-Aero	252.32	254.69	261.98	279.10	276.48
2.	Additions	49.77	67.86	594.76	495.82	179.36
	Aero	46.59	60.43	577.47	489.65	143.57
	Non-Aero	3.18	7.43	17.28	6.17	35.80
3.	Deletions³	1.86	10.45	9.58	106.00	52.74
	Aero	1.05	10.31	9.42	97.22	51.99
	Non-Aero	0.81	0.14	0.16	8.78	0.75
4.	Closing Gross Block ((1)+(2)-(3))	2759.49	2816.90	3402.07	3791.89	3918.52
	Aero	2504.79	2554.91	3122.96	3515.39	3606.97
	Non-Aero	254.69	261.98	279.10	276.48	311.53
5.	ADFG Adjustment	107.00	107.00	107.00	107.00	107.00
	Aero	107.00	107.00	107.00	107.00	107.00

³ Deletions on account of the 12 stands have been taken into consideration for the respective years – 2018 (Rs. 6.34 crore) & 2019 (Rs. 8.57 crore);

As per proposed allocation						
Gross Block						
S.no	Particulars (Rs Crore)	2016-17	2017-18	2018-19	2019-20	2020-21
	<i>Non-Aero</i>	0.00	0.00	0.00	0.00	0.00
6.	Adjusted Closing Gross Block ((4)-(5))	2652.49	2709.90	3295.07	3684.89	3811.52
	<i>Aero</i>	2397.79	2447.91	3015.96	3408.39	3499.97
	<i>Non-Aero</i>	254.69	261.98	279.10	276.48	311.53
7.	Gross Block Ratio (On Adjusted Gross Block)					
	<i>Aero</i>	90.40%	90.33%	91.53%	92.50%	91.83%
	<i>Non-Aero</i>	9.60%	9.67%	8.47%	7.50%	8.17%
	<i>Aero (Average)</i>	91.32%				
	<i>Non-Aero (Average)</i>	8.68%				

9.4 Summary

- The revised gross block ratio as per the revised allocation of assets is presented in the below given table:

Table 28: Summary of gross block for FY17-FY21 as per revised allocation

As per proposed allocation						
Gross Block						
S.no	Particulars (Rs Crore)	2016-17	2017-18	2018-19	2019-20	2020-21
1.	Gross Block Ratio (On Adjusted Gross Block)					
	Aero	90.40%	90.33%	91.53%	92.50%	91.83%
	Non-Aero	9.60%	9.67%	8.47%	7.50%	8.17%
	Aero (Average)	91.32%				
	Non-Aero (Average)	8.68%				

- As per the revised allocation, the average gross block ratio over the second control period is as follows:
 - Aero – 91.32%
 - Non-aero – 8.68%

10. Key findings and conclusion of the study

- As per the Order No. 34/2019-20, the approved additions by the Authority over the second control period were Rs. 2188.18 crore, out of which the aeronautical additions stood at Rs. 1931.23 crore while the non-aeronautical additions stood at Rs. 256.95 crore.
- HAL has submitted the true up of total investments for the second control period as Rs. 1387.54 crore, out of which aeronautical additions are Rs. 1318.20 crore, non –aero additions are Rs. 59.37 crore and non-airport additions are Rs. 9.97 crore.
- Major investments during second control period were related to projects of additional 4-lane ramp, terminal expansion, pier expansion, apron development, road infrastructure, IIDT & IDAT, general capex etc.
- Common assets within the terminal building have been apportioned into aeronautical and non-aeronautical assets in the ratio of 84.6% and 15.4% respectively.
- As part of the asset allocation exercise, general segregation principles were developed for classification of each asset and applied for apportionment of common assets into aeronautical and non-aeronautical categories (refer Section 7.1 and 7.2).
- Post reclassification of the total investment over FY17-FY21, the total additions for the second control period are proposed as Rs. 1387.54 crore. The bifurcation between the re-segregated aeronautical and non – aeronautical assets are as under:
 - Revised aeronautical additions: Rs. 1317.69 crores.
 - Revised non – aeronautical additions: Rs. 69.86 crores.
 - Total adjustment to aeronautical asset additions as per revised allocation: Rs. (0.53) crores.
- The revised additions to the different asset categories have been presented and detailed in the report under sections 7.1, 7.2 and 7.3. The purpose of this exercise was to compute and evaluate the justified additions to the RAB that would be considered towards tariff determination and in determining the true up of the RAB for the second control period.

A comparative analysis of the aeronautical additions as approved in the order no 34-2019/20 for the second control period dated 27th March 2020, as submitted by HAL and as per the revised allocation and other adjustments is presented below:

Table 29: Summary of comparative analysis of the aeronautical additions

Aeronautical Additions							
S.no	Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	As per Tariff Order 34/2019-20 dated 27th March 2020 – Second Control Period	183.88	108.4	350.72	1082.93	205.3	1,931.23
2.	As per HAL's submission	36.57	60.11	559.84	491.04	170.66	1,318.22
3.	Deviation ((2)-(1))	(147.31)	(48.29)	209.12	(591.89)	(34.64)	(613.01)
4.	As per proposed allocation	46.59	60.43	577.47	489.65	143.57	1,317.69

Aeronautical Additions							
S.no	Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	Total
5.	<i>Deviation ((4)-(2))</i>	<i>10.02</i>	<i>0.32</i>	<i>17.63</i>	<i>(1.39)</i>	<i>(27.09)</i>	<i>(0.53)</i>

- As per the revised allocation, the average gross block ratio over the second control period is as follows:
 - Aero – 91.32%
 - Non-aero – 8.68%
- In the gross block analysis, costs towards the deletion of 12 stands has been adjusted in the gross block ratio calculations for the second control period.
- Based on the information received from HIAL, the re-carpeting works of flexible pavements will lead to significant change in Pavement Classification Number (PCN) value and therefore the same has been considered as capital expenditure.

11. Annexures

11.1 Auditor's certificate (Attached in next page)

**Report in connection with Agreed-upon procedures related to the
Statement of allocation of Property, Plant and Equipment and Intangible
Assets into Aeronautical, Non-Aeronautical and Non Airport assets**

We, M/s K.S. Rao & Co., joint Statutory Auditors of M/s. GMR Hyderabad International Airport Limited (the Company) having its registered office at GMR Aero towers, Rajiv Gandhi International Airport, Shamshabad, Hyderabad - 500108 have performed the procedures agreed with you vide Engagement Letter dated June 16, 2020 with respect to Statement of allocation of Property, Plant and Equipment and Intangible Assets (referred as "Fixed Assets") into Aeronautical, Non-Aeronautical and Non Airport assets for the period from April 01, 2016 to March 31, 2020. Our engagement was undertaken in accordance with the Standard on Related Service (SRS) 4400 on "Engagements to Perform Agreed-upon Procedures regarding Financial Information", issued by the Institute of Chartered Accountants of India. The procedures were performed solely to assist you in evaluating the accuracy of allocation of Fixed Assets into Aeronautical, Non-Aeronautical and Non Airport assets.

The agreed upon procedures to be performed on Statement of allocation of Property, Plant and Equipment and Intangible Assets into Aeronautical, Non-Aeronautical and Non Airport assets for the period from April 01, 2016 to March 31, 2020 are as follows:

- a. Read the Basis of Allocation ("Annexure V") which details the guidelines followed by the company for the allocation of Fixed assets into Aeronautical, Non-Aeronautical and Non Airport assets.
- b. Verify that the items of additions to Fixed Assets from April 01, 2016 to March 31, 2020 on a test check basis and using the concept of Materiality for the allocation into Aeronautical, Non-Aeronautical and Non Airport assets on the basis of guidelines as enumerated in Annexure V;
- c. For common assets, verify the basis of allocation and compare the same with the basis of allocation as enumerated in Annexure V; and
- d. Verify that the summary presented in Annexure-I, II, III, IV with respect to additions, deletions, adjustments, re-classification and depreciation is in agreement with the Statement of Fixed Assets as mentioned in Special Purpose Standalone Financial Statements for the year ended March 31, 2017; March 31, 2018; March 31, 2019; March 31, 2020 which are prepared in accordance with accounting principles generally accepted in India, including the Companies (Accounting Standards) Rules, 2006 as emended and

specified under Section 133 of the Companies Act, 2013 read with Companies (Accounting Standard) Rules 2014 (referred as "IGAAP Financial Statements").

We report our finding below:

- i. With respect to item (b) & (c), we found that the allocation of Fixed Assets is as per concept document.
- ii. With respect to item (d), we found that the summary of Aeronautical and Non-Aeronautical and Non Airport portions Fixed Assets as per Annexure-I, II, III, IV is in agreement with the IGAAP Financial Statements of respective period.

Since the procedures performed do not constitute either an audit or a review made in accordance with the generally accepted auditing standards in India, we do not express any assurance on the allocation of the Fixed Assets between Aeronautical, Non-Aeronautical and Non Airport assets.

Our report is solely issued on the request of the Company for its submission to the Airports Economic Regulatory Authority of India (AERA) and not to be used for any other purpose or to be distributed to any other parties.

For K.S. Rao & Co.,
Chartered Accountants
ICAI Firm Registration no. 003109S

Hitesh Kumar P
Partner
Membership No. 233734
UDIN No.: 20233734AAAAEJ5666

Place: Bengaluru
Date: July 22, 2020

Summary of Additions during the year ended March 31, 2017

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	1.71	10.33	-	12.04
Electrical Installations	3.62	0.18	-	3.80
Furniture and Fixtures	2.94	0.36	-	3.30
Free hold land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	5.45	0.89	-	6.34
Office Equipment	1.11	0.29	-	1.40
Other Roads	-	-	-	-
Plant and Machinery	20.11	0.70	0.03	20.84
Runways	-	-	-	-
Software	1.04	0.39	-	1.43
Vehicles	0.59	0.02	-	0.61
Forex Loss Adjustment as per AS 11	(6.59)	(1.32)	-	(7.91)
Total	29.98	11.84	0.03	41.85

Summary of sale/deletion/Adjustment (Gross Block) during the year ended March 31, 2017:

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	-	-	-	-
Electrical Installations	-	-	-	-
Furniture and Fixtures	-	-	-	-
Free hold land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	0.05	0.34	-	0.39
Office Equipment	0.38	0.07	-	0.45
Other Roads	-	-	-	-
Plant and Machinery	-	1.01	-	1.01
Runways	-	-	-	-
Software	-	-	-	-
Vehicles	-	-	-	-
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	0.43	1.42	-	1.85

Summary of depreciation charged during the year ended March 31, 2017

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	26.76	7.73	0.77	35.26
Electrical Installations	34.07	4.43	-	38.50
Furniture and Fixtures	5.23	1.01	0.10	6.34
FreeHold Land	-	-	-	-
Buildings on Freehold land	1.40	-	-	1.40
Improvements to Leasehold Land	3.82	0.16	-	3.98
IT Systems	3.42	0.58	-	4.00
Office Equipment	0.29	0.08	-	0.37
Other Roads	17.70	11.23	-	28.93
Plant and Machinery	37.39	9.03	0.29	46.71
Runways	12.57	0.48	-	13.05
Software	0.31	0.09	-	0.40
Vehicles	0.65	0.11	-	0.76
Forex Loss Adjustment as per AS 11	19.99	4.12	-	24.11
Total	163.60	39.05	1.16	203.81

Summary of Accumulated Depreciation for sale/deletion/ Adjustment during the year ended March 31, 2017

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	-	-	-	-
Electrical Installations	-	-	-	-
Furniture and Fixtures	-	-	-	-
FreeHold Land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	0.05	0.34	-	0.39
Office Equipment	0.38	0.07	-	0.45
Other Roads	-	-	-	-
Plant and Machinery	-	0.69	-	0.69
Runways	-	-	-	-
Software	-	-	-	-
Vehicles	-	-	-	-
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	0.43	1.10	-	1.53

Summary of Gross Block during the year ended March 31, 2017

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	772.89	232.98	22.75	1,028.62
Electrical Installations	194.42	25.77	-	220.19
Furniture and Fixtures	42.24	7.25	0.80	50.29
Free hold land	16.13	-	-	16.13
Buildings on Freehold land	62.31	-	-	62.31
Improvements to Leasehold Land	102.00	4.22	-	106.22
IT Systems	154.12	8.32	0.11	162.55
Office Equipment	15.09	5.90	0.23	21.22
Other Roads	79.31	51.26	-	130.57
Plant and Machinery	434.19	105.10	2.90	542.19
Runways	377.12	12.10	-	389.22
Software	18.39	1.56	-	19.95
Vehicles	8.65	1.37	-	10.02
Forex Loss Adjustment as per AS 11	233.08	48.09	-	281.17
Total	2,509.94	503.92	26.79	3,040.65

Summary of Additions during the year ended March 31, 2018

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	19.94	1.63	-	21.57
Electrical Installations	4.32	0.29	-	4.61
Furniture and Fixtures	6.92	0.39	-	7.31
Free hold land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	8.22	0.82	-	9.04
Office Equipment	1.82	0.28	-	2.10
Other Roads	-	-	-	-
Plant and Machinery	16.70	3.96	-	20.66
Runways	-	-	-	-
Software	0.07	0.05	-	0.12
Vehicles	2.10	0.34	-	2.44
Forex Loss Adjustment as per AS 11	(32.35)	(6.42)	-	(38.77)
Total	27.74	1.34	-	29.08

Summary of sale/deletion/Adjustment (Gross Block) during the year ended March 31, 2018:

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	-	-	-	-
Electrical Installations	0.28	0.05	-	0.33
Furniture and Fixtures	1.62	-	-	1.62
Free hold land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	1.00	-	-	1.00
Office Equipment	0.13	0.03	-	0.16
Other Roads	-	-	-	-
Plant and Machinery	0.03	-	-	0.03
Runways	-	-	-	-
Software	-	-	-	-
Vehicles	0.89	0.07	-	0.96
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	3.95	0.15	-	4.10

Summary of depreciation during the year ended March 31, 2018

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	27.55	8.05	0.77	36.37
Electrical Installations	32.41	4.32	-	36.73
Furniture and Fixtures	6.06	1.01	0.10	7.17
FreeHold Land	-	-	-	-
Buildings on Freehold land	1.40	-	-	1.40
Improvements to Leasehold Land	3.82	0.16	-	3.98
IT Systems	2.71	0.51	-	3.22
Office Equipment	0.75	0.17	-	0.92
Other Roads	17.29	10.96	-	28.25
Plant and Machinery	38.68	9.03	0.29	48.00
Runways	12.57	0.48	-	13.05
Software	0.38	0.10	-	0.48
Vehicles	0.27	0.03	-	0.30
Forex Loss Adjustment as per AS 11	8.50	1.76	-	10.26
Total	152.39	36.58	1.16	190.13

Summary of Accumulated Depreciation for sale/deletion/ Adjustment during the year ended March 31, 2018

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	-	-	-	-
Electrical Installations	-	-	-	-
Furniture and Fixtures	-	-	-	-
FreeHold Land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	-	-	-	-
Office Equipment	0.13	0.03	-	0.16
Other Roads	-	-	-	-
Plant and Machinery	0.01	-	-	0.01
Runways	-	-	-	-
Software	-	-	-	-
Vehicles	0.89	0.07	-	0.96
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	1.03	0.10	-	1.13

Summary of Gross Block during the year ended March 31, 2018

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	792.83	234.61	22.75	1,050.19
Electrical Installations	198.47	26.01	-	224.48
Furniture and Fixtures	47.55	7.65	0.80	56.00
Free hold land	16.13	-	-	16.13
Buildings on Freehold land	62.31	-	-	62.31
Improvements to Leasehold Land	102.00	4.22	-	106.22
IT Systems	161.34	9.13	0.11	170.58
Office Equipment	16.77	6.15	0.23	23.15
Other Roads	79.31	51.26	-	130.57
Plant and Machinery	450.85	109.07	2.90	562.82
Runways	377.12	12.10	-	389.22
Software	18.46	1.62	-	20.08
Vehicles	9.86	1.63	-	11.49
Forex Loss Adjustment as per AS 11	200.73	41.66	-	242.39
Total	2,533.73	505.11	26.79	3,065.63

Summary of Additions during the year ended March 31, 2019

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	189.85	2.54	7.26	199.65
Electrical Installations	28.76	0.13	0.36	29.25
Furniture and Fixtures	13.80	0.15	-	13.95
Free hold land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	22.34	2.32	0.22	24.88
Office Equipment	4.33	0.58	0.30	5.21
Other Roads	24.26	-	1.26	25.52
Plant and Machinery	117.53	18.79	0.53	136.85
Runways	155.80	-	-	155.80
Software	1.74	0.29	-	2.03
Vehicles	1.43	0.19	-	1.62
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	559.84	24.99	9.93	594.76

Summary of sale/deletion/Adjustment (Gross Block) during the year ended March 31, 2019:

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	-	-	-	-
Electrical Installations	-	-	-	-
Furniture and Fixtures	-	-	-	-
Free hold land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	-	-	-	-
Office Equipment	-	-	-	-
Other Roads	-	-	-	-
Plant and Machinery	-	-	-	-
Runways	-	-	-	-
Software	-	-	-	-
Vehicles	0.84	0.17	-	1.01
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	0.84	0.17	-	1.01

Summary of depreciation during the year ended March 31, 2019

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	45.86	9.35	0.87	56.08
Electrical Installations	4.98	0.62	0.01	5.61
Furniture and Fixtures	5.66	0.49	0.10	6.25
FreeHold Land	-	-	-	-
Buildings on Freehold land	2.73	-	-	2.73
Improvements to Leasehold Land	3.82	0.16	-	3.98
IT Systems	6.88	0.77	0.02	7.67
Office Equipment	1.07	0.17	0.02	1.26
Other Roads	1.58	0.53	0.05	2.16
Plant and Machinery	36.34	8.45	0.29	45.08
Runways	16.07	0.48	-	16.55
Software	0.50	0.13	-	0.63
Vehicles	0.49	0.08	-	0.57
Forex Loss Adjustment as per AS 11	7.54	1.56	-	9.10
Total*	133.52	22.79	1.36	157.67

Summary of Accumulated Depreciation for sale/deletion/ Adjustment during the year ended March 31, 2019

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	-	-	-	-
Electrical Installations	-	-	-	-
Furniture and Fixtures	0.05	-	-	0.05
FreeHold Land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	-	-	-	-
Office Equipment	-	-	-	-
Other Roads	-	-	-	-
Plant and Machinery	(0.05)	-	-	(0.05)
Runways	-	-	-	-
Software	-	-	-	-
Vehicles	0.84	0.17	-	1.01
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	0.84	0.17	-	1.01

Summary of Gross Block during the year ended March 31, 2019

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	982.68	237.15	30.01	1,249.84
Electrical Installations	227.23	26.13	0.36	253.72
Furniture and Fixtures	61.35	7.79	0.80	69.94
Free hold land	16.13	-	-	16.13
Buildings on Freehold land	62.31	-	-	62.31
Improvements to Leasehold Land	102.00	4.22	-	106.22
IT Systems	183.68	11.44	0.33	195.45
Office Equipment	21.10	6.73	0.54	28.37
Other Roads	103.58	51.26	1.26	156.10
Plant and Machinery	568.38	127.87	3.43	699.68
Runways	532.91	12.10	-	545.01
Software	20.20	1.91	-	22.11
Vehicles	10.46	1.65	-	12.11
Forex Loss Adjustment as per AS 11	200.73	41.66	-	242.39
Total	3,092.74	529.91	36.73	3,659.38

*Aera has issued order no. 35/2017-18 on January 12, 2018 which is further amended on April 09, 2018, in the matter of determination of Useful life of Airport Assets, which is effective from April 01, 2018. The Company has revised the useful life and charged the depreciation of Rs.21,10,93,355 related to the assets whose life were expired on March 31, 2018 to opening reserves as at April 1, 2018 which is considered in the above depreciation for the respective assets.

Summary of Additions during the year ended March 31, 2020

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	18.40	1.14	-	19.54
Electrical Installations	39.85	0.79	-	40.64
Furniture and Fixtures	3.03	0.42	-	3.45
Free hold land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	0.32	-	0.32
IT Systems	23.72	0.62	-	24.34
Office Equipment	3.42	0.18	-	3.60
Other Roads	0.20	-	-	0.20
Plant and Machinery	27.11	0.43	-	27.54
Runways	366.32	0.09	-	366.41
Software	5.99	0.49	-	6.48
Vehicles	3.00	0.29	-	3.29
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	491.04	4.77	-	495.81

Summary of sale/deletion/Adjustment (Gross Block) during the year ended March 31, 2020:

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	29.02	4.45	1.46	34.93
Electrical Installations	1.29	0.04	0.06	1.39
Furniture and Fixtures	6.47	0.47	-	6.94
Free hold land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	20.83	0.64	-	21.47
Office Equipment	1.40	1.12	0.04	2.56
Other Roads	2.43	-	0.25	2.68
Plant and Machinery	6.83	1.40	0.05	8.28
Runways	26.18	-	-	26.18
Software	0.05	0.15	-	0.20
Vehicles	1.16	0.22	-	1.38
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	95.66	8.49	1.86	106.01

Summary of depreciation during the year ended March 31, 2020

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	37.55	8.17	0.97	46.69
Electrical Installations	7.80	0.59	0.03	8.42
Furniture and Fixtures	4.64	0.25	0.04	4.93
FreeHold Land	-	-	-	-
Buildings on Freehold land	1.33	-	-	1.33
Improvements to Leasehold Land	3.83	0.16	-	3.99
IT Systems	11.77	0.92	0.05	12.74
Office Equipment	1.82	0.28	0.02	2.12
Other Roads	2.80	0.53	0.10	3.43
Plant and Machinery	38.93	9.35	0.19	48.47
Runways	21.82	0.48	-	22.30
Software	0.96	0.16	-	1.12
Vehicles	0.62	0.08	-	0.70
Forex Loss Adjustment as per AS 11	7.55	1.57	-	9.12
Total	141.42	22.54	1.40	165.36

Summary of Accumulated Depreciation for sale/deletion/ Adjustment during the year ended March 31, 2020

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	0.06	1.52	-	1.58
Electrical Installations	0.03	-	-	0.03
Furniture and Fixtures	6.18	0.43	-	6.61
FreeHold Land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	-	-	-
IT Systems	20.24	0.58	-	20.82
Office Equipment	1.33	1.10	-	2.43
Other Roads	-	-	-	-
Plant and Machinery	3.56	0.99	-	4.55
Runways	-	-	-	-
Software	-	0.14	-	0.14
Vehicles	1.16	0.22	-	1.38
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	32.56	4.98	-	37.54

Summary of Gross Block during the year ended March 31, 2020

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	972.06	233.85	28.55	1,234.46
Electrical Installations	265.79	26.88	0.31	292.98
Furniture and Fixtures	57.91	7.73	0.80	66.44
Free hold land	16.13	-	-	16.13
Buildings on Freehold land	62.31	-	-	62.31
Improvements to Leasehold Land	102.00	4.54	-	106.54
IT Systems	186.58	11.43	0.33	198.34
Office Equipment	23.13	5.79	0.49	29.41
Other Roads	101.35	51.26	1.00	153.61
Plant and Machinery	588.67	126.90	3.38	718.95
Runways	873.05	12.19	-	885.24
Software	26.14	2.26	-	28.40
Vehicles	12.30	1.71	-	14.01
Forex Loss Adjustment as per AS 11	200.73	41.66	-	242.39
Total	3,488.15	526.20	34.86	4,049.21

Concept document provided by the Company**Methodology of Assets Allocation:**

In the allocation exercise the Total Assets of the airport have been classified under the following categories:

- Aeronautical
- Non-Aeronautical and
- Non Airport Asset

The following methodology has been adopted to allocate the assets:

The Aeronautical assets are assumed to be those assets which are necessary or required for providing the below mentioned aeronautical services at the airport and all such assets that the company may procure in accordance with the written directions of GoI for or in relation to provision of any of the Reserved Activities including intangible assets and other assets which are directly related to the aeronautical services.

The following are the identified Aeronautical services

- | | |
|--|--|
| 1. Aerodrome Control Services | 22. Visual docking and Guidance System
Operational vehicle like rubber removal machine, runway |
| 2. Airfield | 23. Sweeper, Golf carts, trolley pulling scooters |
| 3. Airfield lighting and associated works | 24. Airport Operation and Control Centre |
| 4. Runways | 25. Airport Operational database |
| 5. Taxiways | 26. Airport Community Network |
| 6. Apron and aircraft parking area | 27. Airport Management Administrative Network |
| 7. Remote parking stands | 28. Other IT system for airport operation |
| 8. Air traffic Control Building and associated assets | 29. Surface Drainage |
| 9. Special Handling Terminal - HAJ | 30. Plumbing and Sewerage system |
| 10. Airport Seating | 31. Water and Sewerage Treatment Facilities |
| 11. Airside access roads | 32. Signage |
| 12. Connectivity roads | 33. Waste disposal |
| 13. Lifts, escalators and elevators | 34. Information desks |
| 14. Flight information and public address system | 35. Emergency Services |
| 15. Compound wall | 36. General maintenance and upkeep of the Airport |
| 16. Traffic forecourts | 37. Customs and Immigration halls |
| 17. Rescue and Firefighting Service | 38. VVIP and VIP lounges |
| 18. Air field crash fire Service | 39. Public Transport Centre |
| 19. Bird Scaring system | 40. Facilities for the disabled and other special needs people |
| 20. Passenger Boarding Bridges | 41. Any other service and facility deemed to be necessary for the safe and efficient operation of the Airport. |
| 21. Baggage Handling system and Hold baggage In line x-ray screening | |

The **Non-Aeronautical assets** are those assets which are necessary for the performance of below mentioned (indicative list) non aeronautical services at the airport

The following are the identified Non-Aeronautical services

1. Car park, Airline lounges and other commercial lounges
2. General retail facilities
3. Vending machine
4. Vehicle Fueling services
5. Kirby Sheds - Temporary office Space
6. Flight catering services
7. Duty Free
8. Ground Handling Services including Ground Power Unit
9. Cargo Handling Services
10. Fuel Farm Services
11. Porter service
12. Any other service or facility other than aeronautical services

The indicative list of common assets is as follows

1. Passenger Terminal Building
2. Heating Ventilation and Air Conditioning system for PTB
3. Office Building (including Furniture & Fixtures) and associated
4. works
5. Quarters for outside Security Personnel
6. Common Hardware, software and Communication System
7. Central Stores Building

Apportionment of Common assets into Aeronautical and Non Aeronautical

Particulars	Aero	Non Aero
Passenger Terminal Building	84.6 %	15.4 %
Heating ventilation and Airconditioning system	84.6 %	15.4 %

The following items are apportioned on the basis of Aeronautical & Non-Aeronautical assets ratio

1. Site office Building (Including Furniure & Fixtures and associated works)
2. New Office Building (Including Furniure & Fixtures and associated works)
3. Quarters for outside security personnel
4. Common Hardware, Software and Communication system
5. Central Stores Building

The following items are Non Airport Assets

1. Cargo Satellite Building
2. Fuel Station located at Landside
3. Commercial Offices for freight forwarders/consolidators/agents



**Report in connection with Agreed-upon procedures related to the
Statement of allocation of Property, Plant and Equipment and Intangible
Assets into Aeronautical, Non-Aeronautical and Non Airport assets**

We, M/s. K.S. Rao & Co., joint Statutory Auditors of M/s. GMR Hyderabad International Airport Limited (the Company) having its registered office at GMR Aero towers, Rajiv Gandhi International Airport, Shamshabad, Hyderabad - 500108 have performed the procedures agreed with you vide Engagement Letter dated May 12, 2021 with respect to Statement of allocation of Property, Plant and Equipment and Intangible Assets (referred as "Fixed Assets") into Aeronautical, Non-Aeronautical and Non Airport assets for the period from April 01, 2020 to March 31, 2021. Our engagement was undertaken in accordance with the Standard on Related Service (SRS) 4400 on "Engagements to Perform Agreed-upon Procedures regarding Financial Information", issued by the Institute of Chartered Accountants of India. The procedures were performed solely to assist you in evaluating the accuracy of allocation of Fixed Assets into Aeronautical, Non-Aeronautical and Non Airport assets.

The agreed upon procedures to be performed on Statement of allocation of Fixed Assets into Aeronautical, Non-Aeronautical and Non Airport assets for the period from April 01, 2020 to March 31, 2021 are as follows:

- a. Read the Basis of Allocation ("Annexure I") which details the guidelines followed by the company for the allocation of Fixed assets into Aeronautical, Non-Aeronautical and Non Airport assets.
- b. Verify that the items of additions to Fixed Assets from April 01, 2020 to March 31, 2021 on a test check basis and using the concept of Materiality for the allocation into Aeronautical, Non-Aeronautical and Non Airport assets on the basis of guidelines as enumerated in Annexure I;
- c. For common assets, verify the basis of allocation and compare the same with the basis of allocation as enumerated in Annexure I; and
- d. Verify that the summary presented in Annexure - II with respect to additions, deletions, adjustments, re-classification and depreciation is in agreement with the Statement of Fixed Assets as mentioned in Special Purpose Standalone Financial Statements for the year ended March 31, 2021 which are prepared in accordance with accounting principles generally accepted in India, including the Companies (Accounting Standards) Rules, 2006 as amended and specified under Section 133 of the Companies Act, 2013 read with Companies (Accounting Standard) Rules 2014 (referred as "IGAAP Financial Statements").



We report our finding below:

- i. With respect to item (b) & (c), we found that the allocation of Fixed Assets is as per concept document.
- ii. With respect to item (d), we found that the summary of Aeronautical and Non-Aeronautical and Non Airport Fixed Assets as per Annexure II is in agreement with the IGAAP Financial Statements.

Since the procedures performed do not constitute either an audit or a review made in accordance with the generally accepted auditing standards in India, we do not express any assurance on the allocation of the Fixed Assets between Aeronautical, Non-Aeronautical and Non Airport assets.

Our report is solely issued on the request of the Company for its submission to the Airports Economic Regulatory Authority of India (AERA) and not to be used for any other purpose or to be distributed to any other parties.

For K.S. Rao & Co.,
Chartered Accountants
ICAI Firm Registration no. 003109S

Hitesh Kumar P

Hitesh Kumar P
Partner
Membership No. 233734
UDIN No.: 21233734AAAAIK7024

Place: Bengaluru
Date: May 15, 2021



GMR Hyderabad International Airport Limited

Annexure I

Concept document provided by the Company

Methodology of Assets Allocation:

In the allocation exercise the Total Assets of the airport have been classified under the following categories:

- Aeronautical
- Non-Aeronautical and
- Non Airport Asset

The following methodology has been adopted to allocate the assets:

The Aeronautical assets are assumed to be those assets which are necessary or required for providing the below mentioned aeronautical services at the airport and all such assets that the company may procure in accordance with the written directions of GoI for or in relation to provision of any of the Reserved Activities including intangible assets and other assets which are directly related to the aeronautical services.

The following are the identified Aeronautical services

- | | |
|---|---|
| 1. Aerodrome Control Services | 22. Visual docking and Guidance System
Operational vehicle like rubber removal machine, runway |
| 2. Airfield | 23. Sweeper, Golf carts, trolley pulling scooters |
| 3. Airfield lighting and associated works | 24. Airport Operation and Control Centre |
| 4. Runways | 25. Airport Operational database |
| 5. Taxiways | 26. Airport Community Network |
| 6. Apron and aircraft parking area | 27. Airport Management Administrative Network |
| 7. Remote parking stands | 28. Other IT system for airport operation |
| 8. Air traffic Control Building and associated assets | 29. Surface Drainage |
| 9. Special Handling Terminal - HAJ | 30. Plumbing and Sewerage system |
| 10. Airport Seating | 31. Water and Sewerage Treatment Facilities |
| 11. Airside access roads | 32. Signage |
| 12. Connectivity roads | 33. Waste disposal |
| 13. Lifts, escalators and elevators | 34. Information desks |
| 14. Flight information and public address system | 35. Emergency Services |
| 15. Compound wall | 36. General maintenance and upkeep of the Airport |
| 16. Traffic forecourts | 37. Customs and Immigration halls |
| 17. Rescue and Firefighting Service | 38. VVIP and VIP lounges |
| 18. Air field crash fire Service | 39. Public Transport Centre |
| 19. Bird Scaring system | 40. Facilities for the disabled and other special needs people |
| 20. Passenger Boarding Bridges | 41. Any other service and facility deemed to be necessary for the
safe and efficient operation of the Airport. |
| 21. Baggage Handling system and Hold baggage In line
x-ray screening | |

The Non-Aeronautical assets are those assets which are necessary for the performance of below mentioned (indicative list) non aeronautical services at the airport

The following are the identified Non-Aeronautical services

1. Car park, Airline lounges and other commercial lounges
2. General retail facilities
3. Vending machine
4. Vehicle Fueling services
5. Kirby Sheds - Temporary office Space
6. Flight catering services
7. Duty Free
8. Ground Handling Services including Ground Power Unit
9. Cargo Handling Services
10. Fuel Farm Services
11. Porter service
12. Any other service or facility other than aeronautical services



The indicative list of common assets is as follows

1. Passenger Terminal Building
2. Heating Ventilation and Air Conditioning system for PTB
3. Office Building (including Furniture & Fixtures) and associated works
4. Quarters for outside Security Personnel
5. Common Hardware, software and Communication System
6. Central Stores Building

Apportionment of Common assets into Aeronautical and Non Aeronautical

Particulars	Aero	Non Aero
Passenger Terminal Building	84.6%	15.4%
Heating ventilation and Airconditioning system	84.6%	15.4%
Begumpet Office	84.6%	15.4%

The following items are apportioned on the basis of Aeronautical & Non-Aeronautical assets ratio

1. Site office Building (Including Furniure & Fixtures and associated works)
2. New Office Building (Including Furniure & Fixtures and associated works)
3. Quarters for outside security personnel
4. Common Hardware, Software and Communication system
5. Central Stores Building

The following items are Non Airport Assets

1. Cargo Satellite Building
2. Fuel Station located at Landside
3. Commercial Offices for freight forwarders/consolidators/agents



GMR Hyderabad International Airport Limited

Annexure II

(₹ in Crores)

Summary of Additions during the year ended March 31, 2021

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	38.18	4.34	-	42.52
Electrical Installations	15.42	0.25	-	15.67
Furniture & Fixtures	2.29	0.20	-	2.49
Free hold land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	7.93	-	-	7.93
IT Systems	2.53	2.80	-	5.33
Office Equipment	0.97	0.03	-	1.00
Other Roads	20.08	-	-	20.08
Plant & Machinery	14.52	1.08	-	15.60
Runways	66.44	-	-	66.44
Software	0.50	-	-	0.50
Vehicles	1.81	-	-	1.81
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	170.67	8.70	-	179.37

Summary of Adjustment/sale/deletion (Gross Block) during the year ended March 31, 2021

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	(0.21)	(44.34)	-	(44.55)
Electrical Installations	-	-	-	-
Furniture & Fixtures	-	-	-	-
Free hold land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	(0.21)	-	(0.21)
IT Systems	-	-	-	-
Office Equipment	(1.90)	(0.26)	(0.01)	(2.17)
Other Roads	-	-	-	-
Plant & Machinery	(3.16)	(2.30)	-	(5.46)
Runways	-	-	-	-
Software	-	-	-	-
Vehicles	(0.31)	(0.04)	-	(0.35)
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	(5.58)	(47.15)	(0.01)	(52.74)

Note:

The company has sold cargo terminal building along with landscaping, Passenger elevators and HVAC system at book value during the period to its wholly owned subsidiary i.e., GMR Air Cargo and Aerospace Engineering Limited (Cargo division) having gross book value of Rs. 46.82 Crore and accumulated depreciation of Rs.20.02 Crore.



Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	39.87	6.27	0.97	47.10
Electrical Installations	10.61	0.45	0.03	11.09
Furniture & Fixtures	3.00	0.22	0.04	3.26
FreeHold Land	-	-	-	-
Buildings on Freehold land	1.33	-	-	1.33
Improvements to Leasehold Land	3.87	0.16	-	4.03
IT Systems	13.27	1.50	0.05	14.82
Office Equipment	2.16	0.26	0.02	2.44
Other Roads	2.70	0.40	0.10	3.19
Plant & Machinery	40.81	8.61	0.19	49.61
Runways	35.08	0.49	-	35.57
Software	1.53	0.20	-	1.73
Vehicles	1.06	0.09	-	1.15
Forex Loss Adjustment as per AS 11	8.17	0.94	-	9.11
Total	163.45	19.59	1.40	184.43

Summary of Adjustment/sale/deletion (Accumulated Depreciation) during the year ended March 31, 2021

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	-	(18.13)	-	(18.13)
Electrical Installations	-	-	-	-
Furniture & Fixtures	-	-	-	-
FreeHold Land	-	-	-	-
Buildings on Freehold land	-	-	-	-
Improvements to Leasehold Land	-	(0.07)	-	(0.07)
IT Systems	-	-	-	-
Office Equipment	(1.90)	(0.26)	(0.01)	(2.17)
Other Roads	-	-	-	-
Plant & Machinery	(0.73)	(1.82)	-	(2.55)
Runways	-	-	-	-
Software	-	-	-	-
Vehicles	(0.30)	(0.04)	-	(0.34)
Forex Loss Adjustment as per AS 11	-	-	-	-
Total	(2.93)	(20.32)	(0.01)	(23.26)

Note:

The company has sold cargo terminal building along with landscaping, Passenger elevators and HVAC system at book value during the period to its wholly owned subsidiary i.e., GMR Air Cargo and Aerospace Engineering Limited (Cargo division) having gross book value of Rs. 46.82 Crore and accumulated depreciation of Rs.20.02 Crore.

Summary of Gross Block as on March 31, 2021

Particulars	Aeronautical	Non Aeronautical	Non Airport	Total
Buildings	1,010.03	193.85	28.55	1,232.43
Electrical Installations	281.21	27.13	0.31	308.65
Furniture & Fixtures	60.20	7.93	0.80	68.93
Free hold land	16.13	-	-	16.13
Buildings on Freehold land	62.31	-	-	62.31
Improvements to Leasehold Land	109.93	4.33	-	114.26
IT Systems	189.11	14.23	0.33	203.67
Office Equipment	22.20	5.56	0.49	28.25
Other Roads	121.42	51.26	1.00	173.68
Plant & Machinery	600.03	125.68	3.38	729.09
Runways	939.49	12.19	-	951.68
Software	26.62	2.26	-	28.88
Vehicles	13.80	1.67	-	15.47
Forex Loss Adjustment as per AS 11	200.73	41.66	-	242.39
Total	3,653.21	487.75	34.86	4,175.82



About CRISIL Limited

CRISIL is a leading, agile and innovative global analytics company driven by its mission of making markets function better.

It is India's foremost provider of ratings, data, research, analytics and solutions, with a strong track record of growth, culture of innovation and global footprint.

It has delivered independent opinions, actionable insights, and efficient solutions to over 100,000 customers.

It is majority owned by S&P Global Inc, a leading provider of transparent and independent ratings, benchmarks, analytics and data to the capital and commodity markets worldwide.

About Infrastructure Advisory

CRISIL Infrastructure Advisory is a leading advisor to regulators and governments, multilateral agencies, investors, and large public and private sector firms. We help shape public policy and enable infrastructure development. Our services span a wide array of infrastructure development activities. Our work in the areas of policy formulation, regulation, design and implementation of public-private partnership (PPP) frameworks and infrastructure financing mechanisms helps create a vibrant ecosystem for infrastructure development. Our services at the project level include bid process management, valuations and due diligence to enable investment decisions. We are known for our core values of independence and analytical rigour combined with deep domain expertise. Our teams have expertise across the complete range of infrastructure sectors - urban development, energy, transport and logistics, natural resources, education, and healthcare. We have a rich understanding of PPP and financing related issues. We operate in India and 22 other emerging economies in Asia, Africa, and the Middle East. CRISIL Infrastructure Advisory is a division of CRISIL Risk and Infrastructure Solutions Limited, a wholly owned subsidiary of CRISIL Limited.

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Study on Efficient Operation and Maintenance Costs

(RFP no. 01/2020-21)

for

**Hyderabad International Airport Limited
(Second Control Period from 01.04.2017 to 31.03.2021)**



**By - CRISIL Risk and Infrastructure Solutions Limited, India
June 2021**

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Acronym	Definition
AERA	Airports Economic Regulatory Authority
AHU	Air Hauling Unit
AMC	Annual Maintenance Contract
ARR	Aggregate Revenue Requirement
ASQ	Airport Service Quality
ATC	Air Traffic Control
ATM	Air Traffic Movement
BIAL	Bangalore International Airport Limited
CAGR	Compounded Annual Growth Rate
CFL	Customer facilities & logistics
CGF	Cargo, Ground handling and Fuel
CIAL	Cochin International Airport Limited
CISF	Central Industrial Security Force
CMC	Consolidated Maintenance Contract
COO	Chief Operating Officer
CPD	Commercial Property Development
CRIS	CRISIL Risk and Infrastructure Solutions Limited
CSR	Corporate Social Responsibility
CUSS	Common Use Self Service
CUTE	Common Use Terminal Equipment
DIAL	Delhi International Airport Limited
ECB	External Commercial Borrowing
GOT	Government of Telangana
GPU	Ground Power Unit

HAL	Hyderabad International Airport Limited
HVAC	Heating, ventilation, and air conditioning
IATA	International Air Transport Association
IDAT	Integrated Domestic Arrival Terminal
IIAT	Integrated International Arrival Terminal
IIDT	Integrated International Departure Terminal
MAAL	Mumbai International Airport Limited
MYTP	Multi Year Tariff Proposal
NOB	New Office Building
PAC	Precision Air Conditioners
PAX	Passengers
PMT	Project Management Team
PPP	Public Private Partnership
PSF	Passenger Service Fee
PTB	Passenger Terminal Building
RAB	Regulated Asset Base
RFP	Request for Proposal
RGIA	Rajiv Gandhi International Airport
RTL	Rupee Term Loan
SQD	Service Quality Dept.
SSA	State Support Agreement
STP	Sewage Treatment Plant
TDSAT	Telecom Disputes Settlement and Appellate Tribunal
UDF	User Development Fees
WPI	Wholesale Price Index

YPP	Yield per passenger
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1. Statement of Confidentiality

This report has been prepared by M/s. CRISIL Risk and Infrastructure Solutions (CRIS), an Indian Infrastructure Advisory Firm as part of its deliverables under the engagement awarded as per RFP No. RFP No. 01/2020-21 floated by the Airports Economic Regulatory Authority of India. This document is being submitted to AERA for use in connection with the tariff determination of Hyderabad International Airport Limited (HIAL). This report or its contents may not be shared with anyone except with the consent of AERA. CRIS shall not have any liability for the unauthorized use or distribution of this document.

2. Background

2.1 Objective of report

The objective of this study is to conduct an independent study and analyse efficient operation and maintenance costs submitted by the operator and determine the allocation and their reasonableness which is important for effective execution of tariff determination for Aeronautical services. These expenditure tend to increase due to enhanced operations and constant expansion especially when the airport is in growing phase.

It is pertinent for the Authority to assess the Operation and Maintenance cost from time to time and determine their efficiency so as to avoid unnecessary passing of cost to the passengers as well as to ensure that the airport operator is able to recover its aeronautical expenses.

For the purpose of this exercise, the consultant has referred and reviewed the following documents:

1. The Airports Economic Regulatory Authority of India Act, 2008
2. Airports Economic Regulatory Authority of India (Terms and Conditions for Determination of Tariff for Airport Operators) Guidelines, 2011 and amendments and orders issued from time to time
3. Concession agreement signed between Ministry of Civil Aviation, Government of India and Hyderabad International Airport signed on 20th December, 2004
4. Orders of Telecom Disputes Settlement and Appellate Tribunal (TDSAT)
5. Audited Financial statements, documents and records of, and discussions with management of HIAL
6. Clarifications received from HIAL management from time to time

The present report is aimed at presenting the efficient O&M expenses including aeronautical and non-aeronautical activities as submitted by HIAL as well as the revised allocation as proposed by the Consultant basis the general principles and treatments as considered in previous tariff orders and other independent study commissioned by the Authority.

As part of the scope of work, the Consultant prepared this report and carried out the opex allocation study to arrive at the justified O&M building block as per the general principles of tariff determination. The present study has certain limitations which include reliance and dependence on the statutory auditor's certificate, contracts, reliance on the information provided on the department wise costs as submitted by HIAL.

2.2 About Rajiv Gandhi International Airport, Hyderabad

GMR Hyderabad International Airport Limited ("HIAL") is the concessionaire responsible for the design, finance, construction, operation and maintenance of the world-class green-field airport under the name and style of 'Rajiv Gandhi International Airport' ("RGIA") at Shamshabad, Hyderabad in public private partnership mode ("Project"). The concession agreement for the Project was signed between Ministry of Civil Aviation ("MoCA") and HIAL on **December 20, 2004** ("Concession Agreement" or "CA"). The airport commenced operations from 23rd March, 2008.

HIAL is a joint venture company having the following shareholding structure as of June 03, 2020:

Table 1: Summary of shareholding structure of HIAL

Holding Company	Percentage of Stake (%)
GMR Airports Limited	63
Airports Authority of India	13
Government of Telangana	13
Malaysia Airports Holding Berhad (Mauritius)	11
Total	100

Source: HIAL MYTP for third control period

The key agreements governing the functioning of HIAL inter alia include:

- Concession Agreement, executed between Government of India, MoCA and GHIAL, on 20th December 2004.
- Land Lease Agreement executed between the State Government (Lessor) and GHIAL (Lessee) on 30th September 2003.
- State Support Agreement (SSA) executed between the State Government and GHIAL on 30th September 2003.
- CNS / ATM Agreement executed between AAI and GHIAL on 11th August 2005. It defines the scope of services for Pre-Commissioning Phase, Commissioning Phase and Operation Phase.
- Shareholder's Agreement executed between State Government, AAI, GIL, MAHB and GHIAL on 30th September 2003.
- Sponsors' Agreement executed between GIL and MAHB on 30th September 2003. The Sponsors' Agreement defines the roles of GMR group and MAHB in the JV.

RGIA has completed its first control period from April 01, 2011 to March 31, 2016 ("First Control Period") and is currently in the second control period from April 01, 2017 to March 31, 2021 ("Second Control Period"). Therefore, in accordance with Clause 3 of the AERA Act and the Guidelines as issued from time to time, HIAL has submitted an application for the determination of aeronautical tariffs i.e. Multi Year Tariff Proposal ("MYTP") for the third control period (a period from 1st April 2021 to 31st March 2026) ("Third Control Period") to AERA.

2.3 Traffic Profile

RGIA is one of the busiest airports and gateway to the South eastern states of India. RGIA airport has been recently awarded the 'Best Airport by Size and Region' in Asia-Pacific region for 2020, in its category of 15-25 Million Passengers Per Annum (MPPA) in the Air Service quality by Airports Council of India.

RGIA has seen high growth in passenger traffic in last five years before the pandemic caused disruptions in traffic. The table below captures the passenger and Air Traffic movements for RGIA airport in last 5 years:

Table 2 Traffic profile of RGI Airport for second control period

Sr. No.	Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	CAGR (FY17-FY20)
Traffic (Actual)							
1	Domestic Passenger (Mn)	11.73	14.47	17.42	17.73	7.47	14.8%
2	International Passenger (Mn)	3.37	3.69	3.99	3.92	0.57	5.2%
3	Total Passenger (Mn)	15.10	18.16	21.40	21.65	8.04	12.8%
ATM (Actual)							
1	Domestic ('000 nos)	108.45	124.79	153.72	157.69	78.34	13.3%
2	International ('000 Nos)	22.26	24.80	25.89	25.76	7.66	5.0%
3	Total ('000 Nos)	130.71	149.58	179.61	183.45	86.00	12.0%
CARGO (Actual)							
1	Domestic (MT)	52,936	54,964	60,172	61,413	46,756	5.1%
2	International (MT)	68,946	79,177	83,954	82,471	64,033	6.2%
3	Total (MT)	121,882	134,141	144,126	143,884	110,789	5.1%

The RGIA airport has grown at a growth rate of 12.8% for passenger traffic, 12.0% for ATM movements and 5.1% for cargo traffic between FY17 and FY20. The airport currently has a terminal capacity of 12 MPPA. The airport has an ultimate capacity in excess of 80 MPPA as envisaged in the airport master plan. The traffic in FY21 slipped to 8 million due to COVID-19 related restrictions on travel and limited operations.

2.4 Summary

- The concession agreement for the RGI Airport was signed between Ministry of Civil Aviation ("MoCA") and HIAL on **December 20, 2004** ("Concession Agreement" or "CA"). The airport commenced operations from 23rd March, 2008.
- HIAL has submitted an application for the determination of aeronautical tariffs i.e. Multi Year Tariff Proposal ("MYTP") for the third control period (a period from 1st April 2021 to 31st March 2026) ("Third Control Period") to AERA.
- RGIA airport has grown at a growth rate of 12.8% for passenger traffic, 12.0% for ATM movements and 5.1% for cargo traffic between FY17 and FY20

3. Terms of Reference and Our Work Performed

3.1 Extract of Terms of References

AERA has outlined the scope of work for opex segregation between aero and non-aero and study on efficient operations and maintenance expenses in clauses 3.1(v) and 3.1(vi) of schedule 1 of their RFP No. 01/2020-2021 for engagement of consultants to assist AERA in determination of tariffs for aeronautical services at HIAL. The scope of work is as follows:

3.1(v) - Asset / OPEX segregation between Aero and Non Aero.

3.1(vi) - Examine and recommend efficient costs for O&M as part of tariff determination process.

Limitations to this study

- The report is based on analysis of the auditor reports, other relevant documents and auditor's certificates as submitted by HIAL with respect to operating expenditure. The work undertaken also has reliance on the information and clarifications provided by HIAL. Further, a site visit was undertaken to discuss the nature of operating expenditure with HIAL Management and the prime reasons for variation in cost vis a vis approved by the Authority.
- The work procedures conducted for the preparation of this report do not constitute an audit, examination or a review in accordance with generally accepted auditing standards or attestation standard as is expected under section 143 of the Companies Act, 2013.

3.2 Expense Classification

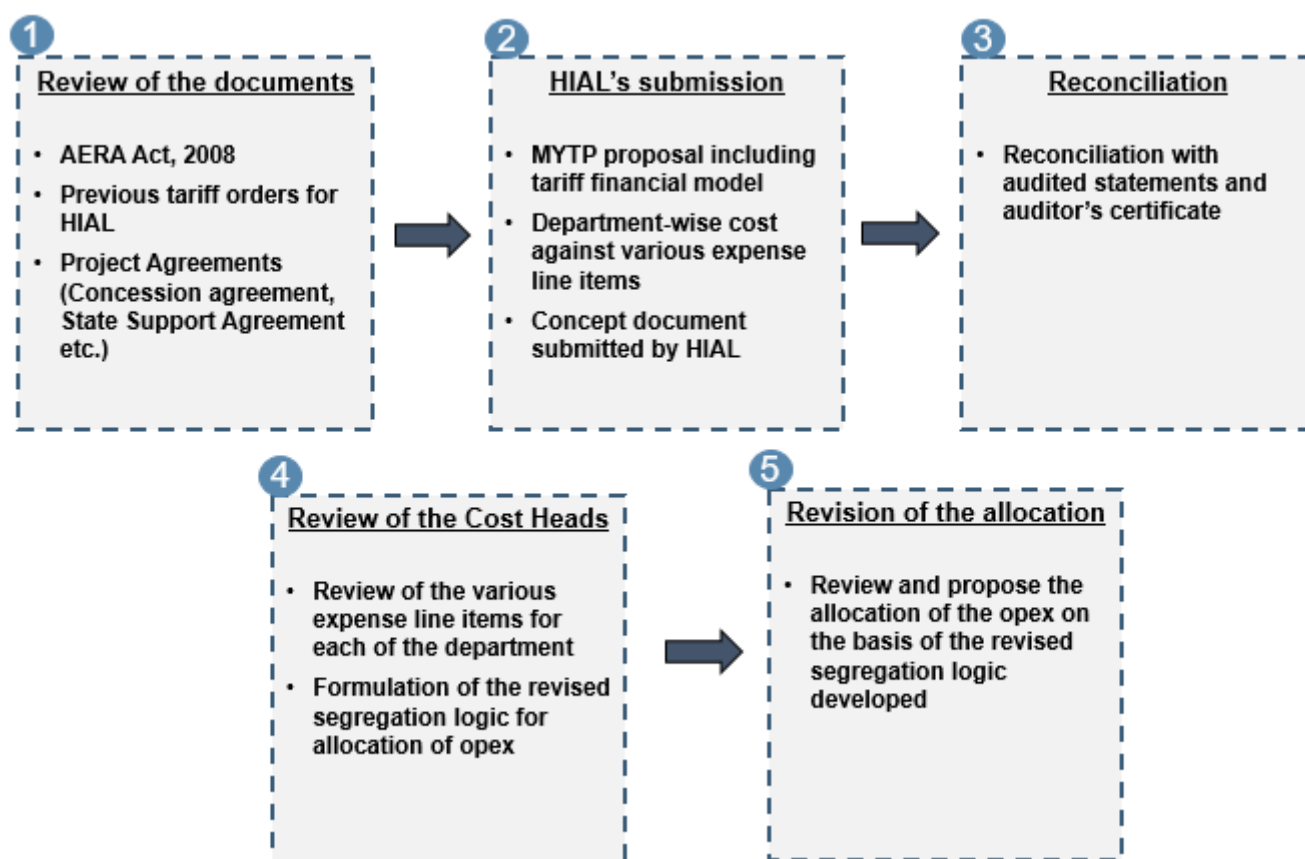
For the purpose of tariff determination and reporting the total operating and maintenance expenses of HIAL have been classified under the following categories:

- Payroll related expenses such as salaries and wages, training and recruitment charges, provident fund expenses, recruitment charges and staff and welfare charges etc.
- Administration and General Expenses such as lease rent, rates and taxes, security charges, advertising and sales promotion, CSR and donations, legal and professional fee, office maintenance, traveling and conveyance, management fee etc.
- Operating expenditure such as utilities, repair and maintenance, stores and spares cost, fuel farm O&M expenses, insurance etc.

3.3 Steps for our work performed

The Consultant followed a detailed and comprehensive methodology to segregate the costs between the aeronautical and non-aeronautical activities. A diagrammatic representation of the same is presented below:

Figure 1: Approach and methodology followed for the segregation of operating expenditure



Source: Consultant

3.4 Basis for Segregation of Costs

The Consultant has studied the various cost heads as well as the department wise allocation of these costs and developed a basis for classification of the operating expenditure into aeronautical and non-aeronautical activities. The Consultant has also determined the appropriate proportion of common operating expenditure that could be allocated to aeronautical activity, in order to determine the aeronautical operating expenditure. Broadly, the principles for segregation of assets are as follows:

Aeronautical Operating Expenditure

- All operating expenditure that are exclusively utilised for airport/aeronautical activities as per schedule 3 of the concession agreement are treated as aeronautical operating expenditure
- Cargo, Ground handling & Fuel Farm (CGF) related operating expenditure has been classified as aeronautical in nature. Further, the Common Use Terminal Equipment (CUTE), Common Use Self Service (CUSS), Ground Power Unit (GPU) are classified as aeronautical assets in accordance with the AERA order no. 34/2019-2020 for the second control period dated 27th March 2020, and hence costs related to them (if any) are also considered as aeronautical in nature
- Operating expenditure incurred to improve the service quality of the Airport except costs identified as non - aeronautical, which helps maintain the ASQ rating mandated by the project agreement are classified as Aeronautical operating expenditure

Non-aeronautical Operating Expenditure

- All costs that are exclusively utilised for non-aeronautical activities as per as per schedule 3 of the concession agreement as well as the AERA Act, 2008 are treated as non-aeronautical operating expenditure. Example are Commercial, Retail etc.

Common Operating Expenditure

- Operating expenditure for which the benefits can be attributed to both aeronautical and non-aeronautical services are classified as common operating expenditure
- Operating expenditure incurred for provision of aeronautical services but are also used for provision of non-aeronautical services are classified as Common Assets. For instance, expenses related to project management team, transportation etc.
- Costs which are used for general corporate purposes including legal, administration, and management affairs are treated as common costs.
- Common costs which are situated within the terminal buildings are apportioned to aeronautical activity in the ratio of the space allocated for aeronautical and non-aeronautical services. The percentages for aeronautical and non-aeronautical areas have been taken as 84.6% and 15.4% respectively. Example are customer facilities and logistics
- Common costs which are situated outside the terminal buildings are apportioned based on an appropriate driver such as the gross asset ratio or the expense ratio of aeronautical and non-aeronautical for the relevant year
- Other common costs such as the costs related to township are apportioned based on specific drivers such as the critical / non-critical staff ratio among others

Inadmissible Costs

Costs related to subsidiary/joint venture are disallowed. For example, the costs related to aviation academy are disallowed. Similarly, certain items which are notional in nature such as provisions for bad debts are also disallowed since they do not reflect true cash outflow.

4. Executive Summary

Objective

AERA is in the process of the tariff determination for RGI Airport, operated by HIAL for the 3rd control period (FY 2022 to FY2026). As a part of this exercise, reviewing and examining the O&M costs incurred by the airport (HIAL) for the previous control period (2nd control period – FY 2017 to FY2021) is one of the critical activity which has been undertaken by the consultant. HIAL has submitted the actual numbers the period FY17-FY21 based on its audited financial statements which have been used for this exercise.

The objective of this report is to allocate the operational expenditure incurred by HIAL into aeronautical and non-aeronautical components using the Authority's guidelines as well as to analyse the efficiency of the operational expenditure for the second control period before considering operating expenditure as a building block for the tariff determination process for HIAL.

The consultant has referred and analysed the following documents:

- The Airports Economic Regulatory Authority of India Act, 2008
- Airports Economic Regulatory Authority of India (Terms and Conditions for Determination of Tariff for Airport Operators) Guidelines, 2011 and amendments and orders issued from time to time
- Concession agreement signed between Ministry of Civil Aviation, Government of India and Hyderabad International Airport signed on 20th December, 2004
- Orders of Telecom Disputes Settlement and Appellate Tribunal (TDSAT)
- Audited Financial statements, documents and records of, and discussions with management of HIAL
- Clarifications received from HIAL management from time to time

Report Summary

Table 3 Summary of the Study

Particulars (In Rs. Crores)	FY2017	FY2018	FY2019	FY2020	FY2021	Total
Total operating expenses – As per MYTP submission of HIAL (refer Table 38)	349.43	679.93	456.19	550.07	399.35	2434.98
Total operating expenses – As per the study (refer Table 38)	313.43	495.51	458.88	550.20	396.15	2214.17
Aero operating expenses – As approved by AERA in 2 nd control period (Refer to table 40)	295.50	305.68	327.38	388.83	450.88	1768.27

Aero operating expenses – As per MYTP submission of HIAL (refer Table 38)	275.39	546.39	342.89	418.49	321.09	1904.25
Aero operating expenses – As per the study (Refer to table 38)	265.44	422.90	360.85	465.66	338.46	1853.32

Methodology

The operational expenditure allocation ratio submitted by HIAL as part of its MYTP submission is 78.20% on an aggregate basis. The detailed allocation methodology adopted by HIAL to allocate total operational expenditure between aeronautical and non-aeronautical operating expenditure is given in section 5.1. The consultant has used the total operational expenditure based on the audited financial statements as per section 5.3 for allocation between aeronautical and non-aeronautical components as given in Table 11. The consultant has reviewed the submissions by HIAL and allocation of the operation and maintenance costs based on its own methodology. The consultant has determined the revised approach for allocation of the operations and maintenance costs as detailed in section 5.3 of this report.

The consultant has allocated the operations and maintenance costs into aeronautical, non-aeronautical and common cost as per the guidelines issued by Authority from time to time as well as nature of expense. The allocation of the key departments into Aero, Non-Aero and Common is undertaken as explained in Table no.13. Post the reclassification of the departments, the Consultant segregated the costs directly attributable to aero and non-aero heads as well as the costs classified as common costs. The common costs were further allocated between aero and non-aero heads on the basis of relevant ratios such as the gross fixed asset ratio, aero-non-aero expense ratio as well as the terminal area ratio. Further, all the costs related to township were classified as common costs and were apportioned on the basis of the critical/non-critical ratio for the year. The table below summarises critical aspects of the revisions discussed and allocation methodology considered towards segregating the operating expense for HIAL for second control period.

Table 4: Summary of the key revisions for re-allocation of operating expenditure

S.no	Particular	Description
1.	Expenses related to Township	Apportioned on the basis of critical & non-critical staff ratio
2.	Expenses related to provisions on account of bad debt	Disallowed
3.	Expenses related to aviation academy	Disallowed
4.	Expenses related to donations	Disallowed
5.	Lease rent paid to GoT	Aero- 72.69%; Non-Aero 27.31% (1500 acres considered as non-aero)
6.	Expenses related to Landscaping, IT & guest relations departments	Common
7.	Expenses related to commercial property development	Non-Aero

8.	Expenses related to Cargo, Ground Handling & Fuel Farm	Aero
9.	Expenses related to Ground power unit & Cargo Satellite Building	Aero
10.	Collection charges (IATA, PSF & UDF)	Aero

The segregation of remaining expenses is undertaken as follows:

- Concession fees – the concession fees is calculated as 4% of the total aeronautical revenue. The total aeronautical revenue includes reclassification of CGF as aeronautical service.
- CSR Expense – CSR expense has been calculated based on computation of PBT of aeronautical P&L and taking 2% of average net profit of preceding 3 years.
- Forex Losses – Forex losses have been computed based on the maximum allowed RTL rate such that extent that the effective cost of borrowing in foreign currency net of forex gains, is not higher than the cost of RTL

Results of the study

The operational expenditure allocation ratio based on the revised segregation methodology is summarised in the table below:

Table 5 Aero as % of the operating expenditure as per revised segregation logic as per the study

Particulars	FY17	FY18	FY19	FY20	FY21
Employee Cost	88.94%	89.18%	88.32%	88.81%	90.88%
General Admin Cost	78.64%	80.37%	78.58%	74.88%	76.30%
Lease Rent to GoT	72.69%	72.69%	72.69%	72.69%	72.69%
Rates & Taxes	90.40%	90.33%	91.53%	92.50%	91.78%
Community Development	0.00%	0.00%	9.64%	100.00%	60.52%
Security Cost	88.06%	83.47%	87.96%	90.85%	91.54%
Bad Debts Written Off	0.00%	0.00%	0.00%	0.10%	98.64%
Bank Charges	90.40%	90.33%	91.53%	92.50%	91.83%
Utility Cost	100.00%	100.00%	100.00%	100.00%	100.00%
Total Repair & Maintenance Cost	93.02%	92.92%	92.48%	92.42%	93.93%
Stores & Repairs Cost	96.04%	97.17%	94.84%	96.00%	93.74%
Insurance cost	90.40%	90.33%	91.53%	92.50%	91.83%
Technical Services Cost	90.57%	91.47%	89.86%	90.79%	94.99%
Housekeeping Cost	85.48%	82.57%	84.01%	86.11%	85.87%
Fuel Farm Expenses	100.00%	100.00%	100.00%	100.00%	100.00%
Other Operating Cost	65.09%	65.14%	67.68%	59.19%	62.06%
Forex Losses	90.40%	90.33%	0.00%	0.00%	0.00%
Concession fees	70.42%	71.35%	71.22%	69.77%	47.69%
Total Operating Expenditure - Study	84.69%	85.35%	78.64%	84.63%	85.44%
Total Operating Expenditure - HIAL	78.81%	80.36%	75.16%	76.08%	80.40%

The change in the operational expenditure ratio for aero allocation (Ratio as per Study – Ratio as per HIAL's submission) based on the study is given below:

Table 6 Change in the operational expenditure allocation ratio based on this study vis-a-vis those proposed by HIAL for the second control period

Particulars	FY17	FY18	FY19	FY20	FY21
Employee Cost	8.18%	8.64%	10.98%	11.19%	8.85%
General Admin Cost	-4.12%	-0.51%	3.36%	-1.95%	-5.38%
Lease Rent to GoT	0.35%	-0.04%	-0.01%	0.53%	0.00%
Rates & Taxes	7.08%	6.90%	5.97%	5.34%	2.93%
Community Development	-82.37%	-81.43%	-68.39%	21.22%	-22.11%
Security Cost	7.27%	7.86%	12.18%	13.05%	8.29%
Bad Debts Written Off	-100.00%	-81.67%	0.00%	0.00%	0.00%
Bank Charges	7.08%	6.90%	5.97%	5.34%	3.27%
Utility Cost	5.09%	3.94%	1.86%	1.66%	1.18%
Total Repair & Maintenance Cost	-0.24%	-0.77%	0.07%	-0.08%	0.08%
Stores & Repairs Cost	2.37%	6.74%	3.70%	2.38%	2.32%
Insurance cost	7.08%	6.90%	5.97%	5.34%	3.27%
Technical Services Cost	-2.62%	-4.10%	-2.24%	-0.55%	-1.65%
Housekeeping Cost	2.01%	2.01%	2.49%	3.18%	3.34%
Fuel Farm Expenses	100.00%	100.00%	100.00%	100.00%	100.00%
Other Operating Cost	31.51%	36.70%	40.25%	32.81%	6.64%
Forex Losses	7.08%	6.90%	0.00%	0.00%	0.00%
Concession fees	10.90%	10.48%	12.15%	12.94%	6.87%
Total operational expenditure	5.88%	4.99%	3.47%	8.55%	5.04%

Note: The reclassification of CGF expenses into aeronautical expense, increase in gross fixed asset ratio and aero-non-aero opex ratio, addition of collection charges for UDF and PSF to aeronautical expenses are some of the key reasons for increase in aeronautical opex ratio.

The revised operational expenditure as per the study is given below:

Table 7 Year wise adjusted operating and maintenance expenses for the second control period as per this study

Particulars(in Rs. Crores)	FY17	FY18	FY19	FY20	FY21	Total
Employee Cost	53.44	64.40	89.68	108.18	101.76	417.46
General Admin Cost	42.44	60.52	65.29	84.23	54.76	307.23
Lease Rent to GoT	2.38	2.48	2.61	2.73	2.88	13.09
Rates & Taxes	5.13	5.35	5.38	6.13	5.01	27.00
Community Development	0.00	0.00	3.17	7.02	7.66	17.85
Security Cost	9.68	14.17	16.15	21.12	15.86	76.98
Bad Debts Written Off	0.00	0.00	0.00	0.00	0.20	0.20
Bank Charges	3.55	116.23	0.72	30.23	7.48	158.21
Utility Cost	17.49	16.33	19.35	18.71	11.10	82.97
Total Repair & Maintenance Cost	34.36	39.72	43.35	52.01	49.81	219.24
Stores & Repairs Cost	11.02	5.70	5.49	6.87	3.60	32.68
Insurance cost	1.67	2.20	2.09	2.57	4.44	12.97
Technical Services Cost	20.64	25.57	28.60	39.70	35.65	150.16

Housekeeping Cost	9.72	10.28	11.77	15.06	10.34	57.17
Fuel Farm Expenses	11.36	12.67	15.01	18.29	12.62	69.96
Other Operating Cost	4.85	5.50	8.06	7.92	4.96	31.28
Forex Losses	4.02	3.77	0.00	0.00	0.00	7.79
Concession fees	33.69	38.00	44.15	44.88	10.34	171.06
Total Operating Expenditure – Aero as per the study	265.44	422.90	360.85	465.66	338.46	1853.32
Total Operating Expenditure – Aero as per HIAL	275.39	546.39	342.89	418.49	321.09	1904.25

The impact of the revised segregation methodology (difference between aeronautical operational expenditure as per study and aeronautical operational expenditure as per HIAL's submission) is summarised in the table below:

Table 8 Impact of the segregation methodology on operational expenditure incurred by HIAL as per this study vis-a-vis those proposed by HIAL for second control period

Particulars (in Rs. Crores)	FY17	FY18	FY19	FY20	FY21	Total
Employee Cost	4.91	6.25	11.14	15.70	10.42	48.42
General Admin Cost	-2.43	-4.59	-0.69	-5.53	-4.45	-17.69
Lease Rent to GoT	0.00	0.00	0.00	0.06	0.00	0.07
Rates & Taxes	0.40	0.40	0.35	0.35	0.16	1.67
Community Development	-2.03	-5.44	-23.26	-1.33	-5.55	-37.61
Security Cost	0.80	1.34	2.23	3.03	1.44	8.84
Bad Debts Written Off	-0.04	-0.33	0.00	0.00	0.00	-0.37
Bank Charges	-2.22	7.60	-1.59	1.75	0.27	5.81
Utility Cost	0.89	0.64	0.36	0.32	0.13	2.34
Total Repair & Maintenance Cost	-0.09	-0.33	0.03	-0.04	0.04	-0.38
Stores & Repairs Cost	0.28	0.40	0.22	0.17	0.09	1.15
Insurance cost	0.13	0.17	0.14	0.15	0.16	0.74
Technical Services Cost	-0.60	-1.14	-0.72	-0.24	-0.62	-3.33
Housekeeping Cost	0.23	0.24	0.35	0.56	0.40	1.77
Fuel Farm Expenses	11.36	12.67	15.01	18.29	12.62	69.96
Other Operating Cost	3.53	4.32	6.59	5.96	1.13	21.52
Forex Losses	-31.26	-151.45	0.00	0.00	0.00	-182.71
Concession fees	6.19	5.77	7.80	7.97	1.14	28.87
Total Operating Expenditure - Aero	-9.95	-123.48	17.97	47.16	17.37	-50.93

The airport operator, i.e. HIAL has submitted the true up of total operating expenditure for the second control period as Rs. 2434.98 crore, out of which aeronautical operating expenditure are Rs. 1904.25 crore, non –aero operating expenditure are Rs. 496.70 crore and non-airport operating expenditure are Rs. 34.04 crore.

Based on the study, the total operational expenditure is Rs. 2214.71 crores (based on audited financial statements and revised allocation), and proposed aeronautical expenditure is Rs. 1853.32 crores resulting in total reduction of Rs. 50.93 crores for the second control period. The opex allocation ratio submitted by HIAL was 78.20% and revised opex allocation ratio is 83.70%.

Efficiency and trend analysis of O&M Expenses

The consultant has analysed the operational expenditure approved by AERA in the second control period order of HIAL and the actual expenditure incurred by HIAL for the second control period as given in section 6.1. It is observed that actual operational expenditure is more than the forecasted operational expenditure. Some of the key findings of this analysis are as given below:

- The increase in operational expenditure is due to significant growth in traffic which led to increased operations. Due to this momentum in traffic, the airport crossed the 20 million mark in FY19 itself which was the design capacity as per the previous expansion plans. Hence, HIAL reworked on their expansion plans and based on the expected traffic at the end of the third control period commenced their expansion for 34 million passengers.
- However, in order to cater to the rising traffic, HIAL commissioned two interim terminals to ensure seamless passenger experience. This led to increase in manpower and administrative costs.
- Further, HIAL also raised finances for the expansion project as well refinanced the existing debt which was previously approved by the Authority as one time time expenditure leading to an increase of Rs. 126 crores from the expenses approved by the Authority.
- Additionally, few cost heads such as utility cost, stores & spares, housekeeping costs etc. have decreased as compared to what was approved by the Authority indicating cost efficiency measures adopted by HIAL as detailed in section 6.2.

The consultant also performed trend analysis of various components of the inflation adjusted operational expenditure for the period FY2017 to FY2021 in comparison to the increase in the passenger traffic as given in section 8. The CAGR for these components is for the period FY2017-2020 as the consultant understands that the operational expenditure of FY2021 cannot be directly compared with the previous years as the utilisation of the asset has fallen substantially and the airport took some time to adjust to the existing conditions.

As per the analysis of the key components of O&M costs, the consultant has concluded that while the absolute cost has increased over the duration of the Second Control Period due to increased passenger traffic and ramping up of IIAT and IIDT operations, HIAL has been able to improve the efficiency of its operations, as evidenced by a lower growth or even decrease in costs on a per passenger basis on most of its key cost heads.

Internal and External Benchmarking

- The consultant has also analysed HIAL's O&M costs with respect to its performance (internal benchmarking) and observed that for the period FY12-FY21, the inflation adjusted costs per pax at HIAL has decreased for major heads due to the increase in utilisation at the airport. The passenger mix at HIAL is predominantly domestic as it accounts for about 80% of the total traffic at HIAL.
- The consultant undertook a study of HIAL's O&M costs with respect to the performance of its competition (External benchmarking) for FY2018. Similar private airports finalised for the aforementioned study are BIAL, CIAL, DIAL, and MIAL. The consultant understands that these airports may be different in terms to traffic profile, terminal capacity, airside infrastructure, expansion phases, operational strategy etc. and these factors will have an impact on the O&M cost of the airport.
- The findings of the study suggests that the increase in total costs has been higher than the growth in passenger traffic and Air Traffic Movements, however, the per pax cost and per ATM cost for most cost heads has been lower than the passenger growth rate over the same period.

Based on the analysis carried out in this report, it is concluded that O&M expenses submitted by HIAL are reasonable and HIAL has adopted measures to achieved further efficiency in operating cost. Additionally, the benchmarking of HIAL with other PPP airports suggests that HIAL ranks lower in most of the cost parameters which suggests that HIAL has managed its cost efficiently and adopted measures to keep the same within limits.

The consultant has relied on the auditor's certificate submitted by HIAL, audited financial statements of HIAL from FY2017 to FY2020, capex and opex submission for FY2021 based on auditors' certificate and the information available in the department wise breakup of operational expenses to verify the expenses incurred during the second control period and to understand the nature of the expenses. The consultant has not audited the operational expenses or any other underlying data submitted by HIAL and relied on auditor's certificate for the same.

5. Segregation of costs for second control period

This section discusses the segregation methodology and principles adopted by HIAL for purpose of true up of second control period in their tariff filing for third control period. Additionally, the section covers the revised methodology adopted by the consultant based on Authority's guidelines and previous tariff orders (1st and 2nd control period). The outcome of this section gives the difference in O&M cost as submitted by HIAL and post revised allocation by the consultant for evaluation of tariff for HIAL.

5.1 Allocation logics adopted by HIAL for the second control period

As part of its submission, HIAL has detailed the allocation methodology in Annexure 9 of the MYTP. The key points from HIAL's submission are presented below:

Aeronautical Operating Expenditure

The aeronautical operating expenditure are those expenses which are necessary or required for the performance of the aeronautical services at the airport and all other expenditure that the company may incur in accordance with the written direction of Government of India for or in relation to provision of any of the reserved activities.

Non - Aeronautical Operating Expenditure

The non-aeronautical expenditure has been assumed to include all the operating expenditure required or necessary for the performance of the non-aeronautical services at the airport.

Common Operating Expenditure

The common expenditure has been assumed to include all the operating expenditure that are not directly identifiable and used commonly for providing both aeronautical and non-aeronautical services.

Non-Airport Operating Expenditure

The non-airport expenditure has been assumed to include all the operating expenditure incurred towards development of non-airport activities carried out on 'landside' i.e. outside the airport and enlisted in Part 2 of Schedule 3 of the concession agreement.

Cost centres and allocation: The above allocation by HIAL is based on the below cost centres as per the books of HIAL

Table 9: Summary of cost centres and allocation as per HIAL's submission

S.no	Cost Centres	Allocation
1.	Aeronautical Cost Centres	Below cost centres providing only aeronautical services: • Airside Operations • Terminal Operations • AOCC • ARFF • COO Office • Terminal Operations • Airline Marketing & Business Development • Protocol • Safety Environment & Compliances

S.no	Cost Centres	Allocation									
		• Airport Service Quality • Technical Services • IT • Landscaping • Employee Township									
2.	Non-Aeronautical Cost Centres	Below cost centres providing only non-aeronautical services: • Commercial • Cargo • Aero Related (Fuel Farm and Ground Handling) • Travel Services • Retail • Chief Commercial Office									
3.	Common Cost Centres	Cost centres pertaining to support functions: • Admin, Facility Management • CFL (Customer facilities & logistics) • HR • Finance • Strategic Planning • Legal • Security • Transportation • Project Management • Knowledge Management • Corporate Communication • CEO's office, MD's office, Non-Exe Dir Office • Contract & Procurement • Corporate Relations • CSR Apportionment of common expenses <table> <tr> <td>A.</td><td>Allocated in the Asset Allocation Ratio</td><td>Rates & Taxes, Insurance, repairs & maintenance, stores & spares, bank charges</td></tr> <tr> <td>B.</td><td>In the ratio of terminal area used for aeronautical and non-aeronautical (i.e. 84.6% and 15.4% respectively)</td><td>Housekeeping cost pertaining to terminal building</td></tr> <tr> <td>C.</td><td>In the ratio of airport and non-airport land as per master plan</td><td>Land Lease Rents payable to Govt. of Telangana</td></tr> </table>	A.	Allocated in the Asset Allocation Ratio	Rates & Taxes, Insurance, repairs & maintenance, stores & spares, bank charges	B.	In the ratio of terminal area used for aeronautical and non-aeronautical (i.e. 84.6% and 15.4% respectively)	Housekeeping cost pertaining to terminal building	C.	In the ratio of airport and non-airport land as per master plan	Land Lease Rents payable to Govt. of Telangana
A.	Allocated in the Asset Allocation Ratio	Rates & Taxes, Insurance, repairs & maintenance, stores & spares, bank charges									
B.	In the ratio of terminal area used for aeronautical and non-aeronautical (i.e. 84.6% and 15.4% respectively)	Housekeeping cost pertaining to terminal building									
C.	In the ratio of airport and non-airport land as per master plan	Land Lease Rents payable to Govt. of Telangana									

S.no	Cost Centres	Allocation	
			As per the master plan, out of the total leased area of 5500 acres, 4000 acres has been identified for Airport purpose and balance 1500 acres has been allocated for non-airport activities.
		D. Allocated in the Aero-Non Aero Opex Ratio	All other common expenses (excluding the ones specified in A, B and C above)
4.	Non-Airport Cost Centres	Cost Centres providing only non-airport services: • CPD • Bidar	

Operating Expenditure as submitted by HIAL

HIAL in its MYTP for the third control period has submitted the true up of the operating expenditure for the second control period.

HIAL, in its submission, highlighted that the Authority in Order No 34/2019-20 dated 27th March 2020 had proposed to true up all the operating expenses (except true-up of interest on working capital loan which is subject to a pre-defined cap) based on actual expenses in the 2nd control period.

Accordingly, the true up for operating expenses had been calculated by HIAL considering the actual operating cost for FY17-FY21.

Further, the true up of operating expenses. As per HIAL's submission, factored the following:

- Community development expenses as per actuals till FY21
- Incidental Income from NOB, SO and Township has been netted off from operating expenses
- Allowance of forex losses not recognised by the Authority in CP2 tariff order

Table 10: Summary of the forex loss not allowed by the Authority as per HIAL's submission

As per HIAL's submission							
S.no	Particulars (in Rs Crore)	2016-17	2017-18	2018-19	2019-20	2020-21	Total
1.	Forex loss	42.70	186.62	-	-	-	229.32
2.	Forex gain	0.36	0.56	-	-	-	0.92
3.	Net Loss to Be allowed (as per CP2 Order)	42.34	186.06	-	-	-	228.40
4.	Aero	35.28	155.23	-	-	-	190.51
5.	Non-Aero	7.06	30.83	-	-	-	37.89

- True Up for allowance of refinancing cost (Break cost of IRS, Upfront Fee on refinanced loan charged to P&L and Bond Issue Cost in FY2018)

HIAL, in its submission, highlighted that it has incurred the below one time cost towards refinancing of ECB and RTL in October 2018;

Table 11: Summary of the one-time cost towards refinancing of ECB and RTL as per HIAL's submission

As per HIAL's submission				
S.no	Particulars (in Rs Crore)	2016-17	April 1,2017 to October 31,2017	Total
1.	Upfront Fee on RTL charged to statement of Profit and Loss	8.33	10.69	19.02
2.	Unwinding Cost of Interest Rate Swap	-	55.32	55.32
3.	Break Cost of External Commercial Borrowing	-	2.18	2.18
4.	Bond issuance Cost	-	49.00	49.00
5.	Total	8.33	117.19	125.52

Other consideration and submission by HIAL

- HIAL considered IT department, Landscaping and Township as aeronautical cost centres
- HIAL considered Cargo, Ground Handling and Fuel farm as non-aeronautical cost centres
- HIAL considered operating expenditure related to Cargo Satellite Building outside the regulatory purview
- HIAL considered operating expenditure related to commercial property development as non-airport (outside regulatory purview)
- HIAL netted off the incidental income from the O&M expenses and did not consider these incidental income towards non-aeronautical revenues
- HIAL considered collection charges pertaining to IATA as pass through in the O&M building block while netting off the other collection charges (PSF & UDF collection charges) from the revenues
- HIAL considered lease rent paid to Government of Telangana for 1500 acres as non-airport in nature (outside the regulatory purview)
- HIAL considered both donations and CSR expenses as pass through expenses
- HIAL considered aviation academy as a non-aeronautical cost centre

5.2 Reconciliation of total costs with audited financials

The table below provides a reconciliation of the expense items as submitted by HIAL as per the audited financials.

Table 12 O&M Aggregate Cost (FY17 to FY21) for the 2nd Control Period Submitted by HIAL

S.no	Particulars	Total (in INR crores)
1.	Payroll Related Expenses	458.99
a)	Contribution to Provident fund and other funds	35.51
b)	Salaries and Wages	400.13
c)	Staff welfare expenses	23.35
2.	Administration & General Expenses	714.25
a)	Lease Rent to GoT	18.01
b)	Rates and Taxes	29.57
c)	Security Charges	86.90
d)	General Administrative Expenses	414.22
i.	<i>Rent-Others</i>	14.25
ii.	<i>Advertising and business promotion</i>	28.15
iii.	<i>Legal and professional fees</i>	82.01
iv.	<i>Management fees</i>	141.14
v.	<i>Travelling and conveyance</i>	82.64
vi.	<i>Training & Recruitment charges</i>	8.64
vii.	<i>Communication Expenses</i>	16.47
viii.	<i>Office maintenance</i>	11.46
ix.	<i>Directors' Sitting Fees</i>	1.06
x.	<i>Loss on sale / discarding of assets</i>	0.63
xi.	<i>Payment to auditor</i>	3.35
xii.	<i>Printing and Stationery</i>	2.29
xiv.	<i>Miscellaneous Expenses</i>	15.13
xv.	<i>Provision for Doubtful Advances</i>	1.09
xvi.	<i>Loss on sale of Investment in shares</i>	4.34
xvii.	<i>Loss on exchange fluctuation</i>	0.22
e)	Bad debts written off	4.40
f)	CSR & Donations	69.60
g)	Bank Charges	91.54
3.	Operating Expenditure	696.09
a)	Utilities	82.98
b)	Insurance	14.18
c)	Repairs and Maintenance	235.85
d)	Stores and Spares	34.12
e)	Housekeeping Charges	67.36
f)	Operating & Maintenance Expenses	27.81
i.	<i>Bus Hire Charges</i>	2.88
ii.	<i>Health and safety expenses</i>	2.07
iii.	<i>COVID 19 Expenses</i>	20.15
iv.	<i>Operating and maintenance expenses</i>	14.26
v.	<i>Operator fee</i>	3.18

vi.	Collection Charges	2.75
g)	Manpower Outsourcing	163.83
h)	Fuel Farm O&M Expenses	69.95
4.	Total (1+2+3)	1869.32
5.	Less: Incidental Income	33.27
6.	Total (adjusted for incidental income) (4-5)	1836.05
7.	One time refinancing cost	-89.12
8.	Total (adjusted for incidental income and one time refinancing cost) (6-7)	1925.14
9.	After apportionment of common into aero & non-aero	1925.14
10.	Balance Forex Losses	228.40
11.	Total (9+10)	2153.54
12.	Add : Incidental Income	33.27
13.	Total excluding incidental income (11+12)	2186.81

Notes:

- The training and recruitment charges have been considered under Employee cost for FY17-FY19 and under administrative expenses for FY20-FY21
- Collection charges for IATA have been included under other operating expenses while collection charges for UDF and PSF have been netted off from aeronautical charges.
- Community development expenses include statutory requirement towards CSR together with Donations by HIAL
- The numbers for FY21 were based on projections as submitted by HIAL but were revised based on actual expenditure incurred and auditor certificate submitted by HIAL.

5.3 Revised methodology for operating expenditure allocation as per CRIS analysis

HIAL in its submission has followed the operating expenditure allocation methodology as detailed in Annexure 9 (Concept Document) of the MYTP. The same has also been detailed in the preceding sections. The Consultant has outlined the revised principles for operating expenditure allocation in this section. Basis the principles, the revised allocation logic is summarised in the table below.

Table 13: Summary of classification of key departments

S.no	Description (Department)	HIAL's classification	Revised Classification
1.	Admin	Common	Common
2.	Aero related (FF, GH, Cargo)	Non Aero	Aero
3.	Airline marketing	Aero	Aero
4.	AIRSIDE OPS	Aero	Aero
5.	AOCC	Aero	Aero
6.	ARFF	Aero	Aero
7.	Aviation Academy	Non Aero	Non-Airport
8.	MD Office	Common	Common
9.	Commercial	Non Aero	Non Aero

S.no	Description (Department)	HIAL's classification	Revised Classification
10.	Contracts and Procurement	Common	Common
11.	Chief Commercial Officer's Office	Non Aero	Non Aero
12.	CEO'S office	Common	Common
13.	Customer Facilities and Logistics	Common	Common – Apportioned on the basis of terminal floor space ratio
14.	Chief Operating Officer's office	Aero	Aero
15.	Corp-communications	Common	Common
16.	Corporate Relations	Common	Common
17.	Commercial Property Development	Non Airport	Non Aero
18.	Finance & Accounts	Common	Common
19.	Business Support	Common	Common
20.	Chairman's Office	Common	Common
21.	HR	Common	Common
22.	Infra Planning & Development	Common	Common
23.	IT	Aero	Common
24.	Landscaping	Aero	Common
25.	Legal	Common	Common
26.	Non exe. Dir' office	Common	Common
27.	Project Management Team (PMT)	Common	Common
28.	Guest Relations	Aero	Common
29.	Retail	Non Aero	Non Aero
30.	Safety Environment & Compliances	Aero	Aero
31.	Security	Common	Common
32.	Strategy Planning Group	Common	Common
33.	Service Quality Dept. (SQD)	Aero	Aero
34.	Technical Services	Aero	Aero
35.	Terminal Ops	Aero	Aero
36.	Township	Aero	Common – Apportioned on the basis of critical/non-critical staff ratio
37.	Transportation	Common	Common

Post the reclassification of the departments, the Consultant segregated the costs directly attributable to aero and non-aero heads as well as the costs classified as common costs. The common costs were further allocated between

aero and non-aero heads on the basis of relevant ratios such as the gross fixed asset ratio, aero-non-aero expense ratio as well as the terminal area ratio.

Table 14: Summary of the basis of apportionment of common costs for various expense line items

S.no	Common costs (if any) related to the expense line item	HIAL's basis of apportionment	Revised basis of apportionment
1.	Payroll Related Expenses	As per sub heads	As per sub heads
a)	Contribution to Provident fund and other funds	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
b)	Recruitment charges	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
c)	Salaries and Wages	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
d)	Staff welfare expenses	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
e)	Training charges	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
2.	Administration & General Expenses	As per sub heads	As per sub heads
a)	Lease Rent to GoT	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
b)	Rates and Taxes	Gross Fixed Asset Ratio	Gross Fixed Asset Ratio
c)	Security Charges	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
d)	General Administrative Expenses	As per sub heads	As per sub heads
i.	<i>Rent</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
ii.	<i>Legal and Professional Charges</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
iii.	<i>Management Fees</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
iv.	<i>Advertisement & Business Promotion</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
v.	<i>Provision for Doubtful Advances</i>	Aero-Non Aero Expense Ratio	Inadmissible
vi.	<i>Communication Expenses</i>	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
vii.	<i>Directors' Sitting Fees</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
viii.	<i>Loss on exchange fluctuation</i>	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
ix.	<i>Loss on sale / discarding of assets</i>	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
x.	<i>Miscellaneous Expenses</i>	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
xi.	<i>Office maintenance</i>	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
xii.	<i>Payment to auditor</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
xiii.	<i>Printing and Stationery</i>	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
xiv.	<i>Travelling and conveyance</i>	Aero-Non Aero Expense Ratio	Aero – non aero ratio of 50:50
e)	Bad debts written off	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
f)	CSR & Donations	Aero-Non Aero Expense Ratio	Common - Expense ratio
g)	Bank Charges	Gross Fixed Asset Ratio	Gross Fixed Asset Ratio

S.no	Common costs (if any) related to the expense line item	HIAL's basis of apportionment	Revised basis of apportionment
3.	Operating Expenditure	As per sub heads	As per sub heads
a)	Utilities	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
b)	Insurance	Gross Fixed Asset Ratio	Gross Fixed Asset Ratio
c)	Repairs and Maintenance	Gross Fixed Asset Ratio	Gross Fixed Asset Ratio
d)	Stores and Spares	Gross Fixed Asset Ratio	Gross Fixed Asset Ratio
e)	Housekeeping Expenses	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
f)	Operating & Maintenance Expenses	As per sub heads	As per sub heads
i.	<i>Collection Charges</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
ii.	<i>Bus Hire Charges</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
iii.	<i>Health and safety expenses</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
iv.	<i>Operating and maintenance expenses</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
v.	<i>Operator fee</i>	Aero-Non Aero Expense Ratio	Aero-Non Aero Expense Ratio
g)	Manpower Outsourcing	Aero-Non Aero Expense Ratio	Gross Fixed Asset Ratio
h)	Fuel Farm O&M Expenses	Non-Aero	Aero
i)	Incidental Income	Aero-Non Aero Expense Ratio	Not Applicable – Incidental not be netted off from operating expenditure instead to be added back to revenues

Further, all the costs related to township were classified as common costs and were apportioned on the basis of the critical/non-critical ratio for the relevant year.

The below table summarises some of the above discussed revisions considered towards operating expense allocation.

Table 15: Summary of the key revisions for re-allocation of operating expenditure

S.no	Particular	Description
1.	Expenses related to Township	Apportioned on the basis of critical & non-critical staff ratio
2.	Expenses related to provisions on account of bad debt	Disallowed
3.	Expenses related to aviation academy	Disallowed
4.	Expenses related to donations	Disallowed
5.	Lease rent paid to GoT	Aero- 72.69%; Non-Aero 27.31% (1500 acres considered as non-aero)
6.	Expenses related to Landscaping, IT & guest relations departments	Common

7.	Expenses related to commercial property development	Non-Aero
8.	Expenses related to Cargo, Ground Handling & Fuel Farm	Aero
9.	Expenses related to Ground power unit & Cargo Satellite Building	Aero
10.	Collection charges (IATA, PSF & UDF)	Aero

5.4 Revised Ratio used for segregation of common cost heads

The revised ratio for Gross fixed asset has been calculated from the results of the study on allocation of assets between aeronautical and non-aeronautical assets as part of scope of work under RFP No. 01/2020-21 initiated by the Authority. The Aero-non-aero ratio has been computed based on revised segregation logic developed in this study. The table below gives the ratio used from FY17-FY21.

Table 16: Revised ratio used for segregation of common cost heads

Particulars	FY17	FY18	FY19	FY20	FY21
Gross fixed asset ratio (% aeronautical assets:% non-aeronautical assets)	90.4%:9.6%	90.3%:9.7%	91.5%:8.5%	92.5%:7.5%	91.8%:8.2%
Aero-Non-aero opex ratio (% aeronautical opex:% non-aeronautical opex)	86.9%:13.1%	86.0%:14.0%	84.4%:15.6%	82.3%:17.7%	86.4%:13.6%

Terminal Area Ratio

In the Order no. 34 2019/20, Authority had considered the terminal area ratio as Aero: 84.6% and Non – Aero: 15.4% respectively. HIAL in their submission has submitted the same terminal ratio for consideration for second control period as the airport is in expansion phase. Therefore, the same ratio is considered for segregating relevant common costs associated to terminal into aeronautical and non-aeronautical services. The common costs related to the customer facilities & logistics were apportioned on the basis of the terminal area ratio between aero & non-aero activities.

5.5 Opex cost head wise segregation for 2nd control period

The following section covers each cost head wise segregation logic used by HIAL and revision as per this study:

5.5.1 Employee Cost

Employee cost includes:

- Contribution to Provident fund and other funds
- Recruitment charges
- Salaries and Wages
- Staff welfare expenses

- Training charges

HIAL has classified the training and recruitment charges under Employee cost from FY17 to FY19 whereas from FY20 to FY21 the same has been considered under administrative costs. Further HIAL has submitted that the increase in payroll expenses is mainly attributable to increase in number of manpower on account of elevated level of operations and a nominal increase because of annual increments. The manpower has increased from 498 in FY16 to 870 in FY20. It is however, observed that the cost/employee has stayed within the same range indicating only an inflationary increase. The airport has seen >12% growth rate before the pandemic and due to commissioning of IITD and IDAT, the increase in manpower is justified. Further the airport is undergoing major expansion and the manpower is bound to increase in a phased manner.

HIAL Segregation Logic:

As detailed in section 5.1 HIAL has segregated the departments as per aeronautical, non aeronautical common cost centers. Further the common cost has been segregated based on aero – non aero opex ratio and total aeronautical expense has been calculated.

Revision as per this study:

On examining submission of HIAL, it was observed that some of the departments were classified as 100% aeronautical (IT, Township, Landscaping) which have been re-classified into common and further segregated based on the logic given in Table no. 14. The cost related to CGF departments have been treated as non-aeronautical by HIAL and the same has been re-classified as aeronautical. On an overall basis, due to reallocation of few departments into aeronautical and upward revision in segregation ratio used to allocate the common expenses (difference of ~7-8% from HIAL's submission in aeronautical part) the aeronautical employee cost has increased post reallocation. The revised aeronautical employee cost as a result of the reallocation exercise is:

Table 17: Revision in segregation logic of employee costs as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total Employee Cost – HIAL (A)	60.10	72.20	101.54	119.15	111.34	464.33
Aeronautical Ratio - HIAL (B)	80.76%	80.54%	77.35%	77.62%	82.04%	
Aeronautical Employee Cost as per HIAL (C= A*B)	48.54	58.15	78.54	92.48	91.34	369.05
Revision as per study						
Total Employee Cost considered as per study (D)	60.09	72.21	101.53	121.82*	111.97*	467.62
Revised Aeronautical Ratio - (E)	88.94%	89.18%	88.32%	88.81%	90.88%	
Aeronautical Employee Cost as per revised Study (F= D*E)	53.44	64.40	89.68	108.18	101.76	417.46
Impact of revision in Allocation Logic (G = F-C)	4.91	6.25	11.14	15.70	10.42	48.42

*Training and recruitment charges were considered by HIAL in Administrative cost in FY20-FY21 which have been adjusted in Employee cost leading to increase in total employee cost as per revised allocation.

(Rs. 2.65 crore in FY20 and Rs. 0.63 crore in FY21)

5.5.2 Administrative Expenses

The administrative expenses and their details together with segregation logic are given in the table below:

Table 18: Revision in segregation logic of Administrative costs as per this study

Sr. No.	Expense Particular	Segregation Logic
1.	Lease Rent to GoT	HIAL Segregation Logic: Based on nature of individual expense and department the cost is apportioned to, it is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non –airport based on ratio of airport and non-airport land (5000 acres – 4000 acres airport + 1500 acres non airport). The airport related land expense is treated as 100% aeronautical Revised Segregation Logic: Based on revised department allocation and nature of individual expense and department cost is apportioned to, it is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non-aeronautical by treating non – airport land as non – aeronautical and revised ratio as Aero- 72.69%; Non-Aero 27.31%
2.	Rates & Taxes	HIAL Segregation Logic: Based on nature of individual expense and department cost is apportioned to, it is classified as aeronautical, non-aeronautical and common. Common expense under rates and taxes is classified into aeronautical and non –aeronautical based on ratio of gross block asset. Revised Segregation Logic: Since rates and taxes include property tax and other statutory taxes the amount submitted has been retained. Based on revised department allocation and nature of individual expense and department, cost is apportioned to it is classified as aeronautical, non-aeronautical and common. Common expenses have been classified based on ratio of gross fixed asset. Additionally the common rates and taxes classified under township are allocated in on the basis of critical & non-critical staff ratio.
3.	Security Charges	As per HIAL, - Security cost has increased due to increase in security manpower deployed at the airport on account of increase passenger flow at the airport and need for more deployment at landside. There was also a change in minimum wages effective from Jan 1, 2017 which lead to increase in security expenses for subsequent period. - The security cost at HIAL is pertaining to the personnel deployed for baggage screening, AEP, SOCC and overall supervision of airport security. - Airport frontage, forecourt management, administrative offices, access roads security and vehicular movement are taken care of by outsourced security agency.

		HIAL Segregation Logic: Based on nature of individual expense and department it is apportioned to, cost is classified as aeronautical, non-aeronautical and common. Common security expense is classified into aeronautical and non –aeronautical based on ratio of aero-non aero opex ratio On examination of details pertaining to the security charges, the increase in security charges on account of increase in wages effective Jan 2017 coupled with inflationary increase on yearly basis falls well within the limits. Additionally, the security headcount has increased in order to debottleneck and to reduce congestion at the main terminal HIAL has constructed two new terminals by name Interim Intl Departure Terminal (IIDT) and Interim Domestic Arrival Terminal (IDAT) resulting into increased area demanding deployment of additional security personnel. Revised Segregation Logic: Based on Revised department allocation and nature of individual expense and department cost is apportioned to, it is classified as aeronautical, non-aeronautical and common. Security charges are function of assets, the common expense under security charges have been segregated into aeronautical and non-aeronautical based on gross fixed asset ratio
4.	General Administrative Expenses	The general administrative expenses are segregated based on individual cost heads and their functions
a.	Rent - Others	HIAL Segregation Logic: Based on nature of individual expense and department it is apportioned to it is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non –aeronautical based on ratio of aero-non-aero opex ratio Revised Segregation Logic: Based on Revised department allocation and nature of individual expense and department it is apportioned to it is classified as aeronautical, non-aeronautical and common. The segregation logic is retained and Common expense is classified into aeronautical and non –aeronautical based on ratio of aero-non-aero opex ratio.
b.	Advertisement & Business Promotion	As per HIAL, there has been an marginal increase due to decennial event which was not forecasted as part of projections for the 2nd control period HIAL Segregation Logic: Based on nature of individual expense and department it is apportioned to it is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non –aeronautical based on ratio of aero-non-aero opex ratio On examining the details submitted for advertisement and business promotion, it is observed that expenses related to event sponsorship, IPL tickets and decennial events are not mandatory expenses and cannot be passed on to the passengers. Hence these expenses have been deducted from common expense and adjusted as per revised segregation logic

		Revised Segregation Logic: Based on revised department allocation and nature of individual expense and department cost is apportioned to, it is classified as aeronautical, non-aeronautical and common. Advertisement and business promotions are function of business operations, common expenses have been classified based on ratio of aero-non-aero opex ratio
c.	Legal and Professional Charges	As per HIAL, the increase in Legal, Professional and Consultancy expenses for FY20 can be attributed to engagement of consultants for various airport related activities which are one time in nature. Additionally, engagement of consultants for improving O&M efficiency, business development, support for raising capital etc. led to increase in these expenses on an overall basis HIAL Segregation Logic: Based on nature of individual expense and department cost is apportioned to it is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non –aeronautical based on ratio of aero—non-aero opex ratio On examining the details submitted by HIAL, the increase in Legal and professional charges due to capital arising activity and major expansion plan is justified. Hence the submission is taken into consideration. Revised Segregation Logic: Based on Revised department allocation and nature of individual expense and department it is apportioned to, cost is classified as aeronautical, non-aeronautical and common. Since, common expense under legal and professional charges are function of business operations, same has been retained and common expenses have been classified based on ratio of aero-non-aero opex ratio.
d.	Management Fees	As per HIAL, Management Fee is an outcome of independent allocation study of Head quarter expenses. The study is prepared by Deloitte (Deloitte Study “Framework for Charging Corporate Cost” for GMR Infrastructure Ltd. May 2015 has been the basis of management fee) and these expenses are allocated to all group companies for efficient resource management and sharing of expertise. The cost may vary as it can be a function of department used and its cost driver. HIAL Segregation Logic: Based on nature of individual expense and department it is apportioned to, cost is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non –aeronautical based on ratio of aero—non-aero ratio On examining the details submitted by HIAL, since management fees is dependent on the cost driver of the department of parent company, it is clear that the cost year on year will not follow a specific trend and hence the submission of HIAL is taken into consideration. Revised Segregation Logic: Based on Revised department allocation and nature of individual expense and department it is apportioned to, it is classified as aeronautical, non-aeronautical and common. Since, common expense under management fees are function of business operations, same has been retained and common expenses have been classified based on ratio of aero-non-aero opex ratio.

e.	Assets written off (only in FY20)	The nature of asset written off is aeronautical in nature and hence the same is considered under 100% aeronautical
f.	Communication Expenses, Loss on exchange fluctuation, Loss on sale / discarding of asset, Miscellaneous Expenses, Office Maintenance, Printing and Stationery	HIAL Segregation Logic: Based on nature of individual expense and department it is apportioned to, it is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non – aeronautical based on ratio of aero-non-aero opex ratio Revised Segregation Logic: Based on Revised department allocation and nature of individual expense and department it is apportioned to, it is classified as aeronautical, non-aeronautical and common. Common expenses have been classified based on ratio of gross fixed asset ratio
g.	Director's sitting fees, Payment to auditor.	HIAL Segregation Logic: Based on nature of individual expense and department it is apportioned to, cost is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non –aeronautical based on ratio of aero-non-aero opex ratio Revised Segregation Logic: Based on Revised department allocation and nature of individual expense and department it is apportioned to, it is classified as aeronautical, non-aeronautical and common. Since, common expense under these cost heads are function of business operations, same has been retained and common expenses have been classified based on ratio of aero-non-aero opex ratio.
h.	Provision for bad and doubtful debts	Disallowed
i.	Travelling and conveyance	As per HIAL, Senior management need to undertake travel to/from Hyderabad for business requirements for which Company avails chartering services from aircraft charter service providers. Airtime sharing cost is incurred on account of: • Travelling cost on account of various Meetings and Seminars of Aviation Industry. • Representing RGIA at various forums. • Meeting airlines senior management for new route developments • Meeting senior management of various international brands for retail development at RGIA. • Meeting institutional investors for GHIAL's financing requirements and investors relation. • Visiting various airports for bringing new innovative technologies and industry best practices to RGIA.

		Meeting the Leaders of various industries for business development. HIAL Segregation Logic: Based on nature of individual expense and department it is apportioned to, it is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non – aeronautical based on ratio of aero-non-aero opex ratio Revised Segregation Logic: Based on Revised department allocation and nature of individual expense and department it is apportioned to, it is classified as aeronautical, non-aeronautical and common. Since the purpose of the common travel costs cannot be accurately segregated between aeronautical and non-aeronautical services, it is assumed that the common travel is used in 50:50 proportion for aeronautical and non-aeronautical services.
5.	Bad debts written off (FY17, FY20)	On examination, bad debts written off for FY17 were wrongly classified under aeronautical whereas the expenses were non-aeronautical in nature. Hence this has been revised to non –aeronautical. There are no common expense under this head.
6.	CSR & Donations	Refer to section 5.5.5
7.	Bank Charges	HIAL Segregation Logic: Based on nature of individual expense and department it is apportioned to, cost is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non –aeronautical based on ratio of gross fixed asset ratio Revised Segregation Logic: Since bank charges include finance related charges towards expansion and refinancing activities, TRA account operations, the amount submitted towards these expenses have been retained. However, the amount attributed to interest charges due to delayed payment have been deducted as these cannot be passed on to the passengers. Based on Revised department allocation and nature of individual expense and department it is apportioned to it is classified as aeronautical, non-aeronautical and common. common expenses have been classified based on ratio of gross fixed asset ratio

Based on the above table, the aeronautical portion of administrative costs as estimated by HIAL and as per revised segregation logic is given in the table below:

Table 19: Revision in segregation logic of overall impact on aeronautical administrative costs as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total Administrative Cost – HIAL (A)	83.60	244.11	152.62	194.10	123.58	798.01
Aeronautical Ratio - HIAL (B)	82.18%	81.84%	76.18%	78.89%	82.53%	
Aeronautical Administrative cost Cost as per HIAL (C= A*B)	68.70	199.77	116.26	153.12	101.99	639.85
Revision as per study						
Total Administrative Cost considered as per study (D)	80.34	236.96	148.31	186.24	119.52	771.38

Revised Aeronautical Ratio - (E)	78.65%	83.87%	62.92%	81.33%	78.52%	
Aeronautical Administrative Cost as per revised Study (F= D*E)	63.19	198.75	93.31	151.46	93.85	600.56
Impact of revision in Allocation Logic (G = F-C)	-5.51	-1.02	-22.95	-1.66	-8.14	-39.28

5.5.3 Operating Expenses

The operating expenses submitted by HIAL, consists of the following:

- Utilities
- Insurance
- Repairs and Maintenance
- Stores and Spares
- Housekeeping Charges
- Operating & Maintenance Expenses
- Manpower Outsourcing
- Fuel farm O&M Expenses

5.5.3.1 Utilities cost

As per HIAL, the utilities cost have gone down drastically due to cost saving measures adopted by HIAL. HIAL had commissioned Solar power plants of 5MW and 8 MW capacity in FY16 and FY17 respectively which led to significant cost savings. Utility cost includes water and power charges. Utility cost as per the financials are the net charges after adjusting the utility recoveries from third party concessionaires. Hence, utility cost had been considered as 100% aeronautical for allocation purpose. Further utility cost towards GPU services are considered as Non Aero as they have considered GPU as a non-aero service (akin to Ground handling services)

HIAL Segregation Logic:

HIAL has considered utilities cost as 100% aeronautical.

Revision as per this study:

Since there has been significant cost savings based on actual utilities cost submitted by HIAL and approved by the Authority in Order no. 34 2019/20, the same cost has been considered for opex. The utilities cost in the audited financial are net charges after adjusting the utility recoveries from third party concessionaires. Hence, utility cost is considered as 100% aeronautical for allocation purpose. Additionally the utilities cost considered towards GPU have been reallocated as aeronautical cost as CGF is considered under aeronautical services as per section 5.3

The aeronautical portion of utilities costs as estimated by HIAL and as per revised segregation logic is given in the table below:

Table 20: Revision in segregation logic of utilities costs as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total Utility Cost- HIAL (A)	17.49	16.33	19.35	18.70	11.10	82.97
Aeronautical Ratio - HIAL (B)	94.91%	96.06%	98.14%	98.34%	98.82%	
Aeronautical Utility Cost as per HIAL (C= A*B)	16.60	15.69	18.99	18.39	10.97	80.64
Revision as per study						

Total Utility Cost considered as per study (D)	17.49	16.33	19.35	18.71	11.10	82.97
Revised Aeronautical Ratio - (E)	100%	100%	100%	100%	100%	
Aeronautical Utility Cost as per revised Study (F= D*E)	17.49	16.33	19.35	18.71	11.10	82.97
Impact of revision in Allocation Logic (G = F-C)	0.89	0.64	0.36	0.32	0.13	2.34

5.5.3.2 Repairs and Maintenance

As per HIAL, their in-house technical team over the period have developed the required skill sets for equipment health check-ups in order to decrease the downtime of plant and machinery and HIAL has shifted from AMC to CMC. Further, the CMC with key OEMs also helped them to contain R&M costs despite the elevated level of operations. The intermittent increase in cost in R&M is attributable to operationalization of IIDT and IDAT, asset aging and maintenance of security equipment which was earlier met through PSF funds now shifted to HIAL account.

HIAL Segregation Logic:

Based on nature of individual expense and department it is apportioned to, cost is classified as aeronautical, non-aeronautical and common. Common expense is classified into aeronautical and non –aeronautical based on ratio of gross fixed asset ratio

Revision as per this study:

There has been a marginal increase in R&M expense which is attributed to increased operations . Hence the same cost is taken into consideration. Based on revised department allocation and nature of individual expense and department it is apportioned to, R&M expense is classified as aeronautical, non-aeronautical and common. R&M expense is function of assets, hence, the common expense under R&M have been segregated into aeronautical and non-aeronautical based on gross fixed asset ratio

The aeronautical portion of R&M expenses as estimated by HIAL and as per revised segregation logic is given in the table below:

Table 21: Revision in segregation logic of repair and maintenance cost as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total Repairs and Maintenance- HIAL (A)	36.94	42.74	46.87	56.27	53.02	235.85
Aeronautical Ratio - HIAL (B)	93.26%	93.68%	92.42%	92.49%	93.85%	
Aeronautical Repairs and Maintenance as per HIAL (C= A*B)	34.45	40.04	43.32	52.05	49.76	219.62
Revision as per study						
Total Repairs and Maintenance considered as per study (D)	36.94	42.74	46.88	56.27	53.02	235.85
Revised Aeronautical Ratio - (E)	93.02%	92.92%	92.48%	92.42%	93.93%	
Aeronautical Repairs and Maintenance as per revised Study (F= D*E)	34.36	39.72	43.35	52.01	49.81	219.24
Impact of revision in Allocation Logic (G = F-C)	-0.09	-0.33	0.03	-0.04	0.04	-0.38

5.5.3.3 Stores and spares

As per HIAL, stores and spares are primarily related to the value of inventory (maintenance equipment and related items for routine maintenance works at terminal, airside, ARFF equipment) purchased during the year.

HIAL Segregation Logic:

Based on nature of individual expense and department it is apportioned to, cost is classified as aeronautical, non-aeronautical and common. Common expense is further classified into aeronautical and non –aeronautical based on gross block asset ratio.

Revision as per this study:

There has been a significant reduction in the consumables in the second control period which is mainly due to the Annual Maintenance Contract (AMC) with key OEMs getting converted into Comprehensive Maintenance Contract (CMC) resulting into reduction of stores and spares. Hence the same cost is taken into consideration. Based on revised department allocation and nature of individual expense and department it is apportioned to, Store and spares cost is classified as aeronautical, non-aeronautical and common. Stores and spares cost is function of assets, hence, the common expense under Stores and spares have been segregated into aeronautical and non-aeronautical based on gross fixed asset ratio

The aeronautical portion of Stores and spares cost as estimated by HIAL and as per revised segregation logic is given in the table below:

Table 22: Revision in segregation logic of stores and spares costs as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total Stores & Spares - HIAL (A)	11.47	5.87	5.78	7.16	3.84	34.11
Aeronautical Ratio - HIAL (B)	93.67%	90.43%	91.14%	93.62%	91.41%	
Aeronautical Stores & Spares as per HIAL (C= A*B)	10.74	5.31	5.27	6.70	3.51	31.53
Revision as per study						
Total Stores & Spares considered as per study (D)	11.47	5.87	5.78	7.16	3.84	34.12
Revised Aeronautical Ratio - (E)	96.04%	97.17%	94.84%	96.00%	93.74%	
Aeronautical Stores & Spares as per revised Study (F= D*E)	11.02	5.70	5.49	6.87	3.60	32.68
Impact of revision in Allocation Logic (G = F-C)	0.28	0.40	0.22	0.17	0.09	1.15

5.5.3.4 Housekeeping cost

As per HIAL, the housekeeping cost has increased due to increase in traffic, commissioning of IIDT and IDAT. However, the contract awarded to third parties are consolidated in nature and not specific to particular area of the airport.

HIAL Segregation Logic:

The housekeeping cost pertaining to terminal building has been apportioned into aeronautical and non-aeronautical based on terminal ratio (Aero – 84.6% and Non-aero – 15.4%). The remaining of the cost is segregated based on nature of individual expense and department it is apportioned to, into aeronautical, non-aeronautical and common. Common expense is further classified into aeronautical and non –aeronautical based on aero-non-aero opex ratio.

Revision as per study:

The housekeeping cost has increased in line with the passenger growth rate of 12.3% and hence the same cost is taken into consideration. The housekeeping expenses directly attributable to terminal building are apportioned into aeronautical and non-aeronautical expenses in the terminal ratio (Aero – 84.6% and Non-aero – 15.4%). Based on revised department allocation and nature of individual expense and department it is apportioned to, other housekeeping cost is classified as aeronautical, non-aeronautical and common. Housekeeping cost is function of assets, hence, the common expense under housekeeping have been segregated into aeronautical and non-aeronautical based on gross fixed asset ratio

The aeronautical portion of housekeeping cost as estimated by HIAL and as per revised segregation logic is given in the table below

Table 23: Revision in segregation logic of housekeeping costs as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total Housekeeping Cost- HIAL (A)	11.37	12.46	14.01	17.49	12.04	67.37
Aeronautical Ratio - HIAL (B)	83.47%	80.57%	81.52%	82.93%	82.54%	
Aeronautical Housekeeping Cost as per HIAL (C= A*B)	9.49	10.04	11.42	14.50	9.94	55.40
Revision as per study						
Total Housekeeping Cost considered as per study (D)	11.37	12.45	14.01	17.49	12.04	67.36
Revised Aeronautical Ratio - (E)	85.48%	82.57%	84.01%	86.11%	85.87%	
Aeronautical Housekeeping Cost as per revised Study (F= D*E)	9.72	10.28	11.77	15.06	10.34	57.17
Impact of revision in Allocation Logic (G = F- C)	0.23	0.24	0.35	0.56	0.40	1.77

5.5.3.5 Manpower outsourcing cost

As per HIAL, the manpower outsourcing are primarily linked to cost of outsourced employees providing IT services, technical services, bird scaring, buggy services and others.

HIAL Segregation Logic:

Based on nature of individual expense and department it is apportioned to, it is classified as aeronautical, non-aeronautical and common. Common expense is further classified into aeronautical and non –aeronautical based on aero-non-aero opex ratio

Revision as per this study:

The manpower outsourcing has marginally increased due to increase in operations and hence the same cost is taken into consideration.

Based on revised department allocation and nature of individual expense and department it is apportioned to, manpower outsourcing cost is classified as aeronautical, non-aeronautical and common. Manpower outsourcing cost is function of assets, hence, the common expense under manpower outsourcing cost have been segregated into aeronautical and non-aeronautical based on gross fixed asset ratio

The aeronautical portion of manpower outsourcing cost as estimated by HIAL and as per revised segregation logic is given in the table below

Table 24: Revision in segregation logic of manpower outsourcing costs as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total manpower outsourcing costs (Technical Service Expenses) - HIAL (A)	22.79	27.95	31.84	43.73	37.53	163.84
Aeronautical Ratio - HIAL (B)	93.19%	95.57%	92.10%	91.34%	96.64%	
Aeronautical manpower outsourcing costs (Technical Service Expenses) as per HIAL (C= A*B)	21.24	26.71	29.32	39.94	36.27	153.49
Revision as per study						
Total manpower outsourcing costs (Technical Service Expenses) considered as per study (D)	22.79	27.95	31.83	43.73	37.53	163.83
Revised Aeronautical Ratio - (E)	90.57%	91.47%	89.86%	90.79%	94.99%	
Aeronautical manpower outsourcing costs (Technical Service Expenses) as per revised Study (F= D*E)	20.64	25.57	28.60	39.70	35.65	150.16
Impact of revision in Allocation Logic (G = F- C)	-0.60	-1.14	-0.72	-0.24	-0.62	-3.33

5.5.3.6 Insurance

As per HIAL, insurance cost is towards operations insurance for IAR, fire, special contingency policy, airport operator liability, vehicles, terrorism, and cash insurance.

HIAL Segregation Logic:

Based on nature of individual expense and department it is apportioned to, cost is classified as aeronautical, non-aeronautical and common. Common expense is further classified into aeronautical and non –aeronautical based on gross fixed asset ratio

Revision as per this study:

On examination of details submitted by HIAL, the insurance related cost has increased marginally due to increase in operations and is justified. Hence the same cost is taken into consideration.

Based on revised department allocation and nature of individual expense and department it is apportioned to, insurance cost is classified as aeronautical, non-aeronautical and common. Insurance cost is function of assets, hence, the common expense under insurance cost have been segregated into aeronautical and non-aeronautical based on gross fixed asset ratio

The aeronautical portion of insurance cost as estimated by HIAL and as per revised segregation logic is given in the table below

Table 25: Revision in segregation logic of insurance costs as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total Insurance Cost (A)	1.85	2.44	2.28	2.78	4.83	14.18
Aeronautical Ratio - HIAL (B)	83.32%	83.43%	85.56%	87.16%	88.56%	
Aeronautical Insurance Cost as per HIAL (C= A*B)	1.54	2.04	1.95	2.42	4.28	12.23
Revision as per study						

Total Insurance Cost considered as per study (D)	1.85	2.44	2.28	2.78	4.83	14.18
Revised Aeronautical Ratio - (E)	90.40%	90.33%	91.53%	92.50%	91.83%	
Aeronautical Insurance Cost as per revised Study (F= D*E)	1.67	2.20	2.09	2.57	4.44	12.97
Impact of revision in Allocation Logic (G = F-C)	0.13	0.17	0.14	0.15	0.16	0.74

5.5.3.7 Fuel Farm operating expense

HIAL Segregation Logic:

HIAL in their segregation methodology has treated CGF services as non-aeronautical. Hence the expense towards fuel farm operations have been treated as non-aeronautical expenses.

Revision as per this study:

Based on Authority's previous stand in order no. 34 2019/20 and on scrutinizing the concession agreement schedule 3 which clearly identified CGF as airport activities, the fuel farm operating expense has been treated as 100% aeronautical.

The aeronautical portion of fuel farm operating expense as estimated by HIAL and as per revised segregation logic is given in the table below

Table 26: Revision in segregation logic of fuel farm operating costs as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total Fuel Farm Expenses (A)	11.36	12.67	15.01	18.29	12.62	69.95
Aeronautical Ratio - HIAL (B)	0.0%	0.0%	0.0%	0.0%	0.0%	
Aeronautical Fuel Farm Expenses as per HIAL (C= A*B)	0.00	0.00	0.00	0.00	0.00	0.00
Revision as per study						
Total Fuel Farm Expenses considered as per study (D)	11.36	12.67	15.01	18.29	12.62	69.96
Revised Aeronautical Ratio - (E)	100%	100%	100%	100%	100%	
Aeronautical Fuel Farm Expenses as per revised Study (F= D*E)	11.36	12.67	15.01	18.29	12.62	69.96
Impact of revision in Allocation Logic (G = F-C)	11.36	12.67	15.01	18.29	12.62	69.96

5.5.3.8 Other operating expenses

As per HIAL, Other operating expenses include:

- Bus hire charges - Bus hire charges for staff commutation to office
- Health & safety expenses- Miscellaneous expenses towards health and safety at the site. Includes cost towards noise level monitoring, waste water sampling, portable and rain water sampling, DG Emission checks, Air quality monitoring etc
- Other operating and maintenance expenses- O&M expenses of car park operator
- Operator fees (car park) - Operator fee paid to car park operator, Tenaga
- Collection charges (IATA) - Collection charges paid to IATA
- COVID -19 related expenses (FY21)

HIAL Segregation Logic:

HIAL has considered collection charges from IATA as 100% aeronautical. However, HIAL has netted off other collection charges such as PSF, USF (domestic and international) from aeronautical revenue instead of including it as part of aeronautical opex as per their accounting practice.

Other operating expenses excluding collection charges have been classified based on nature of individual expense and department it is apportioned to as aeronautical, non-aeronautical and common. Common expense is further classified into aeronautical and non –aeronautical based on aero-non-aero opex ratio

Revision as per this study:

Collection charges for IATA as well as UDF and PSF have been considered as part of opex and not netted off from the aeronautical revenue and treated as 100% aeronautical. Further other operating expenses have been segregated based on revised department allocation and nature of individual expense and department it is apportioned to as aeronautical, non-aeronautical and common. The common expense under other operating cost have been segregated into aeronautical and non-aeronautical based on aero-non aero opex ratio.

The aeronautical portion of other operating expenses as estimated by HIAL and as per revised segregation logic is given in the table below:

Table 27: Revision in segregation logic of other operating expenses costs as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total Other Operating Expenses (A)	3.92	4.15	5.36	7.45	6.91	27.79
Aeronautical Ratio - HIAL (B)	33.58%	28.44%	27.43%	26.37%	55.42%	
Aeronautical Other Operating Expenses as per HIAL (C= A*B)	1.32	1.18	1.47	1.96	3.83	9.76
Revision as per study						
Total Other Operating Expenses considered as per study (D)	7.45	8.44	11.91	13.38	7.99	49.17*
Revised Aeronautical Ratio - (E)	65.09%	65.14%	67.68%	59.19%	62.06%	
Aeronautical Other Operating Expenses as per revised Study (F= D*E)	4.85	5.50	8.06	7.92	4.96	31.28
Impact of revision in Allocation Logic (G = F-C)	3.53	4.32	6.59	5.96	1.13	21.52

*Collection charges for IATA as well as UDF and PSF have been considered as part of opex and not netted off from the aeronautical revenue and treated as 100% aeronautical. (Net Impact of Rs. 20.29 crores)

5.5.4 Forex Losses

HIAL Segregation Logic:

As per HIAL, allowance of forex losses not recognised by the Authority in CP2 tariff order has been considered by HIAL as part of opex based on the following calculations:

Table 28: Summary of the forex loss not allowed by the Authority as per HIAL's submission

S.no	Particulars (in Rs Crore)	2016-17	2017-18	Total
1.	Forex loss	42.70	186.62	229.32
2.	Forex gain	0.36	0.56	0.92
3.	Net Loss to Be allowed (as per CP2 Order)	42.34	186.06	228.40
4.	Aero	35.28	155.23	190.51
5.	Non-Aero	7.06	30.83	37.89

Revision as per this study:

On examining the details submitted by HIAL, it is observed that HIAL has submitted forex loss based on actual calculation as part of the opex. However, as per the Order No. 34 2019/20, the Authority has not included the forex losses in the RAB calculation but allowed partially recovery by considering it as operating expenses (to the extent where the effective interest rate on external commercial borrowings = interest rate on rupee term loan). Hence the same treatment is considered for the purpose of this study as given in the table below. Further the overall forex losses have been treated as common and segregated into aeronautical and non-aeronautical based on gross fixed asset ratio.

Table 29: Summary of the forex losses to be allowed as part of O&M

S.no	Particular (in Rs Crore)	FY2017	FY2018
1.	Forex loss	42.70	186.62
2.	Forex gain	0.36	0.56
3.	Net ((1)-(2))	42.34	186.06
4.	Average RTL	10.41%	12.17%
5.	Cost of ECB	9.00%	9.36%
6.	Average ECB	314.87	148.36
7.	Diff in cost -Max allowable loss ((6)*((4)-(5)))	4.45	4.18
8.	To be part of O&M building block (Min (3,7))	4.45	4.18
9.	Aero	4.02	3.77
10.	Non-Aero	0.43	0.40

The aeronautical portion of other operating expenses as estimated by HIAL and as per revised segregation logic is given in the table below:

Table 30: Revision in segregation logic of Forex Losses costs as per this study

Particulars (in Rs Crore)	FY17	FY18	Total
Forex Cost (A)	42.34	186.06	228.40
Aeronautical Ratio - HIAL (B)	0.83	0.83	
Aeronautical Forex Cost as per HIAL (C= A*B)	35.28	155.23	190.51
Revision as per study			

Forex Cost considered as per study (D)	4.45	4.18	8.63
Revised Aeronautical Ratio - (E)	0.90	0.90	
Aeronautical Forex Cost as per revised Study (F= D*E)	4.02	3.77	7.79
Impact of revision in Allocation Logic (G = F-C)	-31.26	-151.45	-182.71

5.5.5 CSR Expenses

As per HIAL, CSR as stipulated by the central government is the mandatory expenses and such expenses have to be considered by the Authority while computing the revenue requirement of the regulated entity, else it may lead to reduction in equity return for the Company. HIAL has further emphasized to include CSR as part of opex in order to ensure that the return to the shareholders after making statutory deduction (in the form of tax or similar deduction like CSR) is protected under all circumstances.

HIAL's segregation Logic:

Out of the total CSR, aeronautical portion of CSR expenses as derived from aeronautical P&L is forming part of the eligible expenses.

Revision as per this study:

On the examining the details submitted by HIAL, it is observed that the CSR expense is categorized under Community development expenses which also include donations made by HIAL.

The Hon'ble TDSAT's judgment dated December 16, 2020 in the matter of Bangalore International Airport Limited v. Airports Economic Regulatory Authority of India was referred to ascertain the eligibility of CSR expense as a pass through in the O&M building block. As per the judgement, there is no difference between CSR expenditure mandated by law and an expenditure in the nature of income tax which is allowed as a cost pass-through. It reasoned that not allowing such cost would amount to indirectly lowering the percentage fixed as a fair return on equity, as the CSR expenditure would be apportioned from the return allowed to equity holders. Hon'ble TDSAT therefore set aside the decision of AERA and directed it to pass relevant orders so that reduction in determined fair return does not cause loss to equity holders due to CSR expenditure.

Hence keeping in view the direction of this judgement, the CSR liability calculated based on aeronautical P&L can be allowed as pass through for the purpose of O&M expense. For the purpose of this study, the table below presents the CSR eligibility submitted by HIAL and the allowable CSR eligibility as per this study.

Table 31: Revision in segregation logic of CSR costs as per this study

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Total Community Development (A)	2.47	6.68	33.87	10.59	16.00	69.61
Aeronautical Ratio - HIAL (B)	82.37%	81.43%	78.02%	78.78%	82.63%	
Aeronautical Community Development as per HIAL (C= A*B)	2.03	5.44	26.43	8.34	13.22	55.46
Revision as per study						
Total Community Development considered as per study (D)	2.46	6.68	32.86	7.02	12.66	61.68
Revised Aeronautical Ratio - (E)	0.00%	0.00%	9.64%	100.00%	60.52%	
Aeronautical Community Development as per revised Study (F= D*E)	0.00	0.00	3.17	7.02	7.66	17.85

Impact of revision in Allocation Logic (G = F-C)	-2.03	-5.44	-23.26	-1.33	-5.55	-37.61

**CSR eligibility has been calculated on aero P&L with revised classification of CGF into aeronautical service and revised aeronautical opex based on this study. The depreciation and interest rates are as per HIAL submission as revised aeronautical P&L is not available as of now. The CSR eligibility is taken as per Companies Act, 2013.*

5.5.6 Concession fees

HIAL signed the Concession Agreement with MoCA (Government of India) on 20th December 2004. As per clause 3.3 of the Concession Agreement, HIAL has to pay a Concession Fee equal to 4% of the gross annual revenue to the Government of India. The concession fee with respect to the first 10 financial years is deferred till the 11th year from COD and is payable in 20 equal half-yearly instalments starting from FY2019.

HIAL's segregation logic:

HIAL has apportioned the concession fee into aero, non-aero and non-aeronautical services in the ratio of the revenues from these services respectively.

The summary of the concession fee as per HIAL's submission is summarized below:

Table 32: Summary of concession fee as per HIAL submission

As per HIAL allocation						
Concession Fee						
<i>in Rs Crore</i>	2016-17	2017-18	2018-19	2019-20	2020-21	Total
Concession Fee	46.20	52.95	61.53	64.95	22.54*	245.33
Aeronautical Concession Fee towards tariff determination	27.50	32.23	36.35	36.91	9.20	141.03
Non - Aeronautical Concession Fee	14.76	17.00	20.46	23.61	12.73	86.96
Non - Airport Concession Fee	3.94	3.71	4.71	4.44	0.60	17.34

**Concession fees taken on actuals in FY21 submitted by HIAL in the auditor's certificate*

Revision as per this study:

On examining the details submitted by HIAL, it is noted that HIAL has submitted concession fees based on proportion of aeronautical and non-aeronautical revenue. However, HIAL has considered the CGF revenue under non-aeronautical revenue stream and CPD and CSB revenue has been considered as non-airport. Pursuant to order no 34/2019-20 for the Second Control Period, it is suggested that the amount of concession fee corresponding to the aeronautical revenues should only be allowed for the purpose of tariff determination. Hence, post reallocation of CGF into aeronautical revenue and revenue from non-airport into aeronautical and non-aeronautical (CPD as non-aeronautical and CSB as aeronautical), the concession fees towards aeronautical revenue at 4% is given in the table below:

Table 33: Summary of concession fee as per revised allocation

As per revised allocation						
Concession Fee						
<i>in Rs Crore</i>	2016-17	2017-18	2018-19	2019-20	2020-21*	Total
Aeronautical Revenue (Revenue from Regulated services + Revenue from CGF) (A)	842.15	950.06	1,103.87	1,122.02	258.44	4276.54
Non-aeronautical Revenue (Revenue from services other than regulated) (B)	353.73	381.45	445.97	486.18	283.53	1950.86
Concession Fee (C)	4%					
Aeronautical Concession Fee towards tariff determination (A*C)	33.69	38.00	44.15	44.88	10.34	171.06
Non - Aeronautical Concession Fee (B*C)	14.15	15.26	17.84	19.45	11.34	78.03
Non - Airport Concession Fee	-	-	-	-	-	-
Total	47.84	53.26	61.99	64.33	21.68	249.10

*FY21 concession fees is provisional as the actual revenue for FY21 has not been finalized by HIAL. (FY21 revenue considered based on actuals for 9MFY21 and projections for Jan – Mar 2021)

5.6 Total Opex as per revised submission

- Based on this study report, we have concluded that the Aeronautical Operation and Maintenance expense of Rs. 1905.24 crores as claimed by HIAL for the Second Control Period (FY17- 21) will be reduced by Rs. 50.93 crores. The table below summarizes the adjustments made

Table 34 Difference in aeronautical opex due to revision as per this study

Particulars (<i>in Rs Crore</i>)	FY17	FY18	FY19	FY20	FY21	Cost Head Wise Aggregate Sum
Employee Cost	4.91	6.25	11.14	15.70	10.42	48.42
Administrative Costs	-5.51	-1.02	-22.95	-1.66	-8.14	-39.28
General Admin Cost	-2.43	-4.59	-0.69	-5.53	-4.45	-17.69
Lease Rent to GoT	0.00	0.00	0.00	0.06	0.00	0.07
Rates & Taxes	0.40	0.40	0.35	0.35	0.16	1.67
Community Development	-2.03	-5.44	-23.26	-1.33	-5.55	-37.61
Security Cost	0.80	1.34	2.23	3.03	1.44	8.84
Bad Debts Written Off	-0.04	-0.33	0.00	0.00	0.00	-0.37
Bank Charges	-2.22	7.60	-1.59	1.75	0.27	5.81
Utility Cost	0.89	0.64	0.36	0.32	0.13	2.34
Total Repair & Maintenance Cost	-0.09	-0.33	0.03	-0.04	0.04	-0.38
Stores & Repairs Cost	0.28	0.40	0.22	0.17	0.09	1.15
Insurance cost	0.13	0.17	0.14	0.15	0.16	0.74
Technical Services Cost	-0.60	-1.14	-0.72	-0.24	-0.62	-3.33
Housekeeping Cost	0.23	0.24	0.35	0.56	0.40	1.77

Fuel Farm Expenses	11.36	12.67	15.01	18.29	12.62	69.96
Other Operating Cost*	3.53	4.32	6.59	5.96	1.13	21.52
Forex Losses	-31.26	-151.45	0.00	0.00	0.00	-182.71
Total excluding concession fees	-16.14	-129.26	10.16	39.19	16.24	-79.80
Concession Fees	6.19	5.77	7.80	7.97	1.14	28.87
Total Opex	-9.95	-123.48	17.97	47.16	17.37	-50.93

*The collection charges for UDF and PSF have been included in opex based on logic explained in section 5.5.3 whereas HIAL has netted off these expenses from aeronautical revenue based on its accounting principles. This differential treatment is creating a difference of Rs. 20.5 crores in revised segregation.

- The concession fees is calculated as per the revised segregation logic in section 5.5.6 in line with Authority's previous treatment in Order No. 34 2019/20 and revised concession fees towards aeronautical opex to be taken into consideration is given table 33.
- The aeronautical expense based on revised segregation logic to be considered for true-up of second control period is given in the table below:

Table 35 Revised aeronautical opex to be considered as part of trueup for second control period

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Cost Head Wise Aggregate Sum
Employee Cost	53.44	64.40	89.68	108.18	101.76	417.46
General Admin Cost	42.44	60.52	65.29	84.23	54.76	307.23
Lease Rent to GoT	2.38	2.48	2.61	2.73	2.88	13.09
Rates & Taxes	5.13	5.35	5.38	6.13	5.01	27.00
Community Development	0.00	0.00	3.17	7.02	7.66	17.85
Security Cost	9.68	14.17	16.15	21.12	15.86	76.98
Bad Debts Written Off	0.00	0.00	0.00	0.00	0.20	0.20
Bank Charges	3.55	116.23	0.72	30.23	7.48	158.21
Utility Cost	17.49	16.33	19.35	18.71	11.10	82.97
Total Repair & Maintenance Cost	34.36	39.72	43.35	52.01	49.81	219.24
Stores & Repairs Cost	11.02	5.70	5.49	6.87	3.60	32.68
Insurance cost	1.67	2.20	2.09	2.57	4.44	12.97
Technical Services Cost	20.64	25.57	28.60	39.70	35.65	150.16
Housekeeping Cost	9.72	10.28	11.77	15.06	10.34	57.17
Fuel Farm Expenses	11.36	12.67	15.01	18.29	12.62	69.96
Other Operating Cost	4.85	5.50	8.06	7.92	4.96	31.28
Forex Losses	4.02	3.77	0.00	0.00	0.00	7.79
Total excluding concession fees	231.75	384.90	316.70	420.77	328.13	1682.25
Concession fees	33.69	38.00	44.15	44.88	10.34	171.06
Total Opex	265.44	422.90	360.85	465.66	338.46	1853.32

- The reclassification of CGF expenses into aeronautical expense, increase in gross fixed asset ratio and aero-non-aero opex ratio, addition of collection charges for UDF and PSF to aeronautical expenses are some of the primary reason for increase in aeronautical opex ratio. However, on an overall basis the aeronautical opex has reduced by Rs. 50.93 crores.

Table 36 Revision in segregation logic of aeronautical opex costs including concession fees as per this study

Particulars (In Rs. Crores)	FY17	FY18	FY19	FY20	FY21	Total
Total Opex submitted by HIAL (A)	303.23	626.98	394.66	485.12	376.81	2186.81
Total Concession fees (B)	46.2	52.95	61.53	64.95	22.54	248.17
Total Opex including concession fees (C= A+B)	349.43	679.93	456.19	550.07	399.35	2434.98
Aeronautical Ratio - HIAL (D)	81.75%	82.00%	77.67%	78.66%	82.77%	
Aeronautical Opex as per HIAL (E= A*D)	247.89	514.16	306.54	381.58	311.89	1762.06
Aeronautical Ratio for concession fees - HIAL (F)	59.52%	60.87%	59.08%	56.83%	40.82%	
Aeronautical Concession fees as per HIAL (G = B*F)	27.5	32.23	36.35	36.91	9.2	142.19
Total Aeronautical opex including concession fees (H=E+G)	275.39	546.39	342.89	418.49	321.09	1904.25
Aeronautical ratio for opex including concession fees (I=H/C)	78.81%	80.36%	75.16%	76.08%	80.40%	78.20%
Revision as per this study						
Total Revised Opex Cost considered as per study (J)	265.59	442.25	396.89	485.87	374.47	1965.07
Total Concession fees (K)	47.84	53.26	61.99	64.33	21.68	249.10
Total Revised Opex including concession fees (L= J+K)	313.43	495.51	458.88	550.20	396.15	2214.17
Revised Aeronautical Ratio - (M)	87.26%	87.03%	79.80%	86.60%	87.62%	
Aeronautical Opex as per revised Study (N= J*M)	231.75	384.90	316.70	420.77	328.13	1682.25
Aeronautical Ratio for concession fees revised (O)	70.42%	71.35%	71.22%	69.77%	47.69%	
Aeronautical Concession fees as per revised (P=O*K)	33.69	38.00	44.15	44.88	10.34	171.06
Total Aeronautical opex including concession fees (Q=N+P)	265.44	422.90	360.85	465.66	338.46	1853.32
Aeronautical ratio for opex including concession fees (R= Q/L)	84.69%	85.35%	78.64%	84.63%	85.44%	83.70%
Impact (S=Q-H)	-9.95	-123.48	17.97	47.16	17.37	-50.93

- The total aeronautical ratio for second control period aeronautical opex including concession fees based on revision as per this study is 83.70%

5.7 Summary

- The concession fees is calculated as per the revised segregation logic in section 5.5.6 in line with Authority's previous treatment in Order No. 34 2019/20 and revised concession fees towards aeronautical opex to be taken into consideration is Rs. 171.06 crores.
- Based on this study report, we have concluded that the Aeronautical Operation and Maintenance expense of Rs. 1905.24 crores as claimed by HIAL for the Second Control Period (FY17- 21) will be reduced by Rs. 50.93 crores.
- The reclassification of CGF expenses into aeronautical expense, increase in gross fixed asset ratio and aero-non-aero opex ratio, addition of collection charges for UDF and PSF to aeronautical expenses are some of the primary reason for increase in aeronautical opex ratio. However, on an overall basis the aeronautical opex has reduced by Rs. 50.93 crores.
- The total aeronautical ratio for second control period aeronautical opex including concession fees based on revision as per this study is 83.70%

6. Efficiency in O&M Expenses during second control period

6.1 Projected opex approved by AERA as per Order No. 34/2019-20 for the second control period vs actual Opex submitted by HIAL for 2nd control period

This section presents projected O&M expenses submitted to AERA in the 2nd tariff order as well as the actual expenses incurred by HIAL in the second control period.

The expenses have been grouped for the purpose of simplicity and to analyse the efficient costs for HIAL.

Table 37: Projected O&M expenses approved by AERA for Second Control Period in order 34 2019/20

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	CAGR
Payroll Cost	64.90	69.45	86.20	106.99	114.48	15.24%
Administrative Cost (general admin, Land Lease rent to GoT, Rates & taxes, CSR)	51.21	50.65	52.66	54.75	56.93	2.68%
Security Cost	8.71	9.05	9.40	9.77	10.15	3.90%
Finance related charges (bad debt written off, Bank charges, exchange fluctuations etc.)	7.95	10.24	10.12	11.77	13.96	15.11%
Utility Cost	20.83	17.83	18.87	29.70	38.28	16.43%
Repair and maintenance	33.30	36.09	38.97	45.33	64.82	18.12%
Stores and Spares	13.90	15.37	16.60	19.31	27.61	18.72%
Housekeeping	10.66	11.08	12.97	18.65	23.17	21.41%
Other operating cost (Insurance, Technical services)	39.07	41.19	46.68	53.36	57.32	10.06%
Concession fees	44.97	44.72	34.91	39.21	44.16	-0.45%
Total Opex	295.50	305.68	327.38	388.83	450.88	11.14%

Source: AERA Order no.34 2019-20

Table 38: Actual O&M expenses submitted by HIAL to AERA for true-up of second control period in the third control period tariff filing

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	CAGR FY17- FY20	CAGR FY17- FY21
Payroll Cost	60.10	72.20	101.54	119.15	111.34	25.62%	16.67%
Administrative Cost (general admin, Land Lease rent to GoT, Rates & taxes, CSR)	65.65	96.52	131.04	137.76	97.90	28.02%	10.50%
Security Cost	10.99	16.98	18.36	23.25	17.32	28.37%	12.04%
Finance related charges (bad debt written off, Bank charges, exchange fluctuations etc.)	6.96	130.61	3.22	33.09	13.26	68.15%	17.49%
Utility Cost	17.49	16.33	19.35	18.70	11.10	2.26%	-10.74%
Repair and maintenance	36.94	42.74	46.87	56.27	53.02	15.07%	9.46%
Stores and Spares	11.47	5.87	5.78	7.16	3.84	-14.53%	-23.93%
Housekeeping	11.37	12.46	14.01	17.49	12.04	15.44%	1.44%
Other operating cost (Insurance, Technical services)	39.92	47.21	54.49	72.25	61.90	21.86%	11.59%
Concession fees	46.20	52.95	61.53	64.95	22.54	-16.42%	46.20
Total	307.09	493.87	456.19	550.07	399.35	6.79%	307.09
Forex Losses	42.34	186.06	0.00	0.00	0.00	42.34	
Grand Total*	349.43	679.93	456.19	550.07	399.35	3.39%	349.43

**Excluding adjustments against incidental income*

Source: HIAL MYTP for third control period and revised submission

Table 39: Difference between projected expenses approved Authority and O&M actual expenses submitted by HIAL for true-up of second control period in the third control period tariff filing

Particulars (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total
Payroll Cost	-4.80	2.75	15.34	12.16	-3.14	22.32
Administrative Cost (general admin, Land Lease rent to GoT, Rates & taxes, CSR)	14.44	45.88	78.38	83.01	40.97	262.67
Security Cost	2.28	7.93	8.96	13.48	7.17	39.84
Finance related charges (bad debt written off, Bank charges, exchange fluctuations etc.)	-0.99	120.36	-6.90	21.32	-0.70	133.09
Utility Cost	-3.34	-1.49	0.48	-11.00	-27.18	-42.53
Repair and maintenance	3.64	6.65	7.90	10.94	-11.80	17.32
Stores and Spares	-2.43	-9.50	-10.82	-12.15	-23.77	-58.68
Housekeeping	0.71	1.38	1.04	-1.16	-11.13	-9.16
Other operating cost (Insurance, Technical services)	0.86	6.01	7.80	18.89	4.58	38.14
Concession fees	1.23	8.23	26.62	25.74	-21.62	40.19
Total	11.58	188.19	128.81	161.24	-51.54	438.29

6.2 Cost measures adopted by HIAL

The key operational efficiency improvement initiatives that HIAL management has declared which has resulted in cost saving during Second Control Period has been tabulated below:

Table 40: Efficient cost measures adopted by HIAL

S/N	Project Description (in Rs Crore)	FY17	FY18	FY19	FY20	FY21	Total cost savings
1	Solar Power Plant	6.00	6.00	6.00	6.00	6.00	30.00
2	LED Conversion	2.31	2.54	4.21	4.24	4.27	17.56
3	Conversion of Split ACs to Inverter Split ACs	0.27	0.48	0.48	0.48	0.48	2.19
4	Replacement of Conventional ceiling fans with Energy Efficient Super fans	0.11	0.22	0.22	0.22	0.22	0.99

5	PTB AHU conventional fan replacement with Electrically Commutated (EC) fans		0.65	0.65	0.65	0.65	2.60
6	Chiller plant manager (New Control System)		0.33	0.33	0.33	0.33	1.32
7	AHU Condensate recovery and reuse			0.83	0.83	0.83	2.49
8	1 KVA UPS removal (56 Nos) and load consolidation with main UPS distribution			0.04	0.04	0.04	0.12
9	Upgrading the domestic water pump to energy efficient pumps -ALS				0.09	0.09	0.18
10	Use Natural Coagulant for enhancement of STP capacity and efficiency				1.30	1.30	2.60
11	Upgrading to energy Efficient Precision Air Conditioners (PAC) - 3 Numbers					0.25	0.25
12	Optimization of Water Conservation			0.05	0.30	0.30	0.66
13	Minimizing BMS DDC Controller Failures and Reduction of Maintenance Cost			0.13	0.13	0.13	0.39
14	Online Tube cleaning system for condenser of Chillers					0.16	0.16
15	R2 Reservoir for storm water storage and reuse					3.66	3.66
16	Miscellaneous Projects*	0.06	0.10	0.15	0.18	0.28	0.77
	Total	8.75	10.32	13.09	14.79	18.99	65.94

Source: HIAL

*The Miscellaneous projects include the following:

- Replacement of Energy Efficient Pumps
- Focus and rectification of Duct leakages to avoid AC Leakage at Check-in Hall
- Replacement of condenser water pipe line at ATC
- VFD for Air Blowers motor replacement in STP
- Replacement of Energy Efficient Pumps
- UPS-3 power Distribution Enhancement
- Enhancing performance of equipment by improving performance in Low Side of HVAC
- Energy efficient chiller installation

PTB HVAC system Cooling Tower upgradation

6.3 Summary

HIAL has adopted cost efficiency measures as detailed in section 6.2 which has resulted in cost savings of Rs. 65.94 crores over the second control period.

7. Trend analysis of Inflation Adjusted expenses

The expenses have inflation adjusted to derive the real amount of these expenses. This eliminates the fluctuations in the general price level as well as gives real increase or decrease in expenses over the period from the base year (FY17).

The wholesale price index is used as the price index against which the expenses are adjusted. The WPI index as given in by the Ministry of Commerce, & Industry is as follows:

Table 41: WPI Index

Particulars	FY17	FY18	FY19	FY20	FY21*
Index growth	-	2.96%	4.26%	1.67%	1.25%
Index for the year	100	102.96	107.35	109.14	110.51

*WPI index for FY21 taken as average of 12 months.

For the purpose of trend analysis the cost which is recurring in nature is only considered

7.1 Review of actual expenses incurred by HIAL for second control period

It is to be noted that the costs for each head is analysed only form FY17 to FY20 as FY21 was an exceptional year in terms of reduced traffic due to ongoing pandemic and analysis from FY17 to FY21 will not represent an accurate trend analysis for HIAL

7.1.1 Payroll Cost

HIAL's Manpower for FY17-FY20 is summarised below:

Table 42 Department Wise Head Counts and CAGR

Particulars	FY17	FY18	FY19	FY20	CAGR
Airport Operations	318	378	467	495	16%
F&A	44	51	56	70	17%
HR	10	12	18	20	26%
Infra Planning and Development	15	24	35	21	12%
Enterprise IT	-	8	35	36	112%*
Corporate Relations	22	28	34	46	28%

Commercial	25	26	24	34	11%
Business Support	6	10	29	30	71%
Others (SPG, Corporate Communication, Legal)	77	83	86	111	13%
Total	517	620	784	863	19%

*CAGR only for the period FY18-20

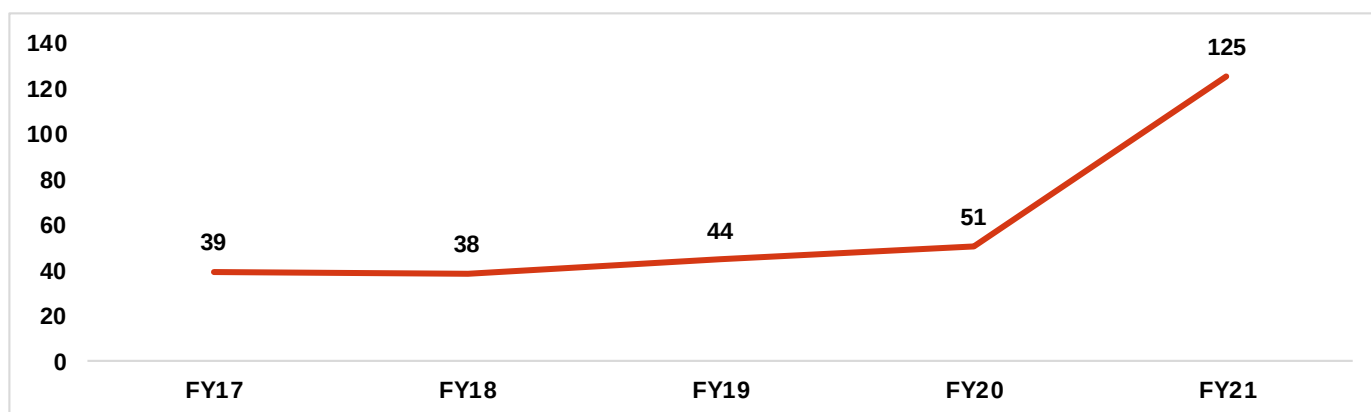
Payroll Cost for FY17-21 is summarised below:

Table 43 Payroll Cost Pattern for HIAL during Second Control Period

Particulars	FY17	FY18	FY19	FY20	FY21	CAGR(FY17-20)
Total Cost (Rs. Crores)	60.10	72.20	101.54	119.15	111.34	19.0%
Total Inflation Adjusted Cost (Rs. Crores)	60.10	70.12	94.59	109.17	100.75	22.01%
Inflation Adjusted cost per PAX (Rs.)	39.44	38.32	44.28	50.58	125.16	8.65%

It can be seen from the above table that the CAGR of manpower count during the period FY17-20 is % whereas inflation adjusted manpower cost shows a CAGR of **22.01%**. We infer that the increase in payroll expenses is mainly attributable to increase in number of manpower on account of elevated level of operations and a nominal increase because of annual increments. The manpower has increased from 498 in FY16 to 863 in FY21.

Figure 2 Inflation Adjusted per PAX Manpower Cost during second control Period (Rs.)



Manpower cost per PAX has a CAGR of 8.65% for the period FY17-20. We observe that the Increase in per PAX manpower is attributable to increase in scale of operations at HIAL during the second control period. Although, manpower cost per PAX was Rs. 125 for FY21 due to significant reduction in traffic due to ongoing pandemic and travel restrictions imposed by the Government.

As the airport is under expansion, the corroborated increase in manpower will be effected a year before the start of the terminal which HIAL has factored in its MYTP projections based on capacity release is considered in phases.

7.1.2 Administrative Cost (general admin, Land Lease rent to GoT, Rates & taxes, CSR)

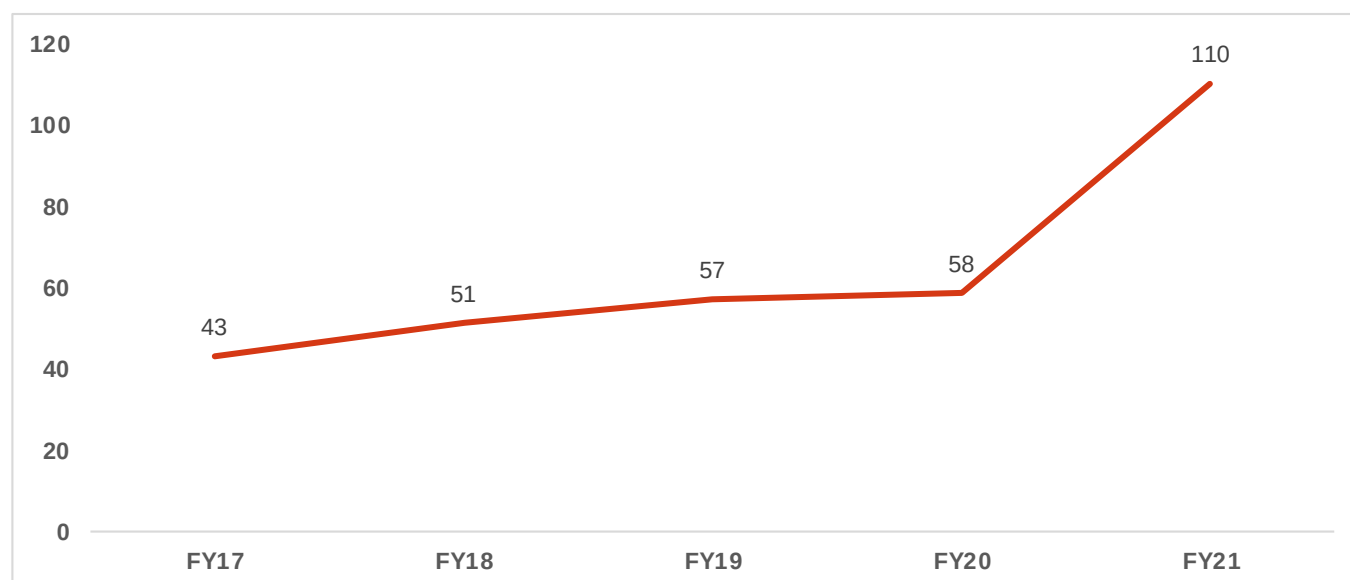
The Administrative cost includes Legal & professional fees, Management fees, travelling & conveyance fees and community development fees. Professional and consultancy expense include expenses towards various consultancy based on requirements arising during a particular year. Legal expenses include cost towards cases pending at various forums and arbitration related expenses.

HIAL's Administrative Cost for FY17-FY21 is summarised below:

Table 44 Administrative Cost Pattern for HIAL during Second Control Period

Particulars	FY17	FY18	FY19	FY20	FY21	CAGR(FY17-20)
Total Cost (Rs. Crores)	65.65	96.52	131.04	137.76	97.90	
Total Inflation Adjusted Cost (Rs. Crores)	65.65	93.75	122.07	126.22	88.59	24.35%
Inflation Adjusted cost per PAX (Rs.)	43.08	51.23	57.14	58.48	110.05	10.73%

Figure 3 Inflation Adjusted per PAX Administrative Cost during second control Period (Rs.)



We understand that these expenses may not follow a particular trend as these are contingent to requirement such as refinancing, stake sale, legal proceeding etc. Administrative cost per PAX has a CAGR of **10.73%** over the period FY17-20, which is lower than CAGR of total Inflation adjusted administrative cost of **24.35%**. We can infer that expansion in operations is the primary reason for an increase in total administrative cost.

Due to significant reduction in traffic due to ongoing pandemic and travel restrictions imposed by the Government administrative cost per PAX for FY21 has increased to Rs. 144 from 58 in FY20.

Management Fee is an outcome of independent allocation study of Head quarter expenses. The increase in travelling & conveyance is attributable to increase in operations, business and technological initiatives and enhanced marketing efforts to aid the growth.

7.1.3 Security Cost

HIAL's Security Cost for FY17-FY21 is summarised below:

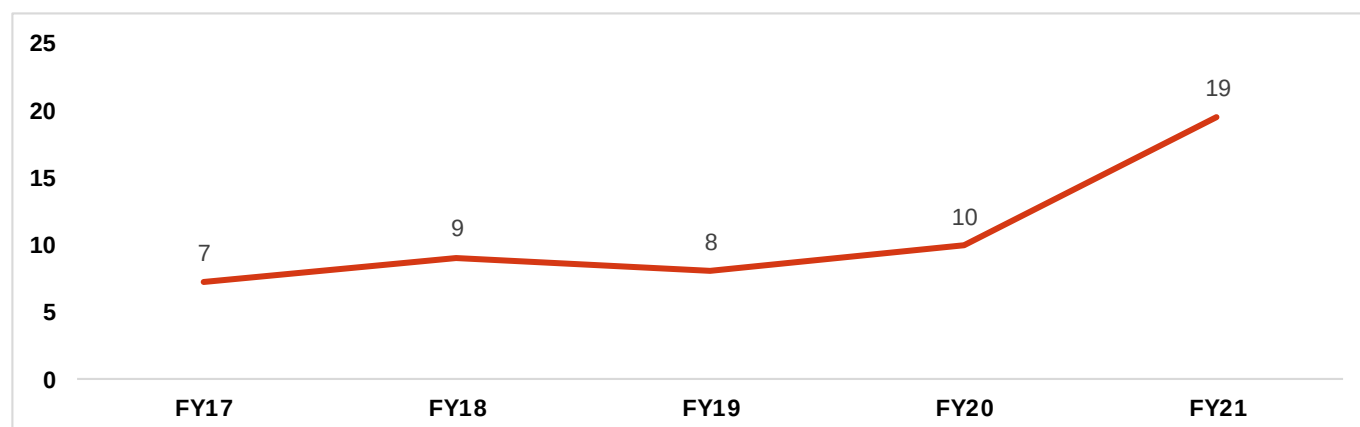
Table 45 Security Cost Pattern for HIAL during Second Control Period

Particulars	FY17	FY18	FY19	FY20	FY21	CAGR (FY17-20)
Total Cost (Rs. Crores)	10.99	16.98	18.36	23.25	17.32	
Total Inflation Adjusted Cost (Rs. Crores)	10.99	16.49	17.10	21.30	15.67	24.68%
Inflation Adjusted cost per PAX (Rs.)	7.21	9.01	8.01	9.87	19.47	11.03%

There is an increase in security cost in FY18, which is mainly due to revision in rates from Aug 2017 and increase in minimum wages. Further, in FY2018 the security measures were increased attributable to increased passenger flow at the airport. Further, in order to debottleneck and to reduce congestion at the main terminal HIAL has constructed two new terminals by name Interim Intl Departure Terminal (IIDT) and Interim Domestic Arrival Terminal (IDAT) resulting into increased area demanding deployment of additional security personnel.

As per discussion with HIAL and basis their clarifications, Broadly the security cost at HIAL is pertaining to the personnel deployed for baggage screening, AEP, SOCC and overall supervision of airport security. Terminal security in terms of passenger processing and airside perimeter are taken care by CISF. Airport frontage, forecourt management, administrative offices, access roads security and vehicular movement are taken care of by outsourced security agency.

Figure 4 Inflation Adjusted per PAX Security Cost during second control Period (Rs.)



We can observe efficiencies of scale as CAGR for the period FY17-20 of inflation adjusted cost per pax **11.03%**, which is lower than CAGR of total inflation adjusted security cost of **24.68%**. The increase in FY21 to Rs.19 is due to reduced traffic as a result of ongoing pandemic and travel restrictions imposed by the Government.

7.1.4 Finance related charges (bad debt written off, Bank charges, exchange fluctuations etc.)

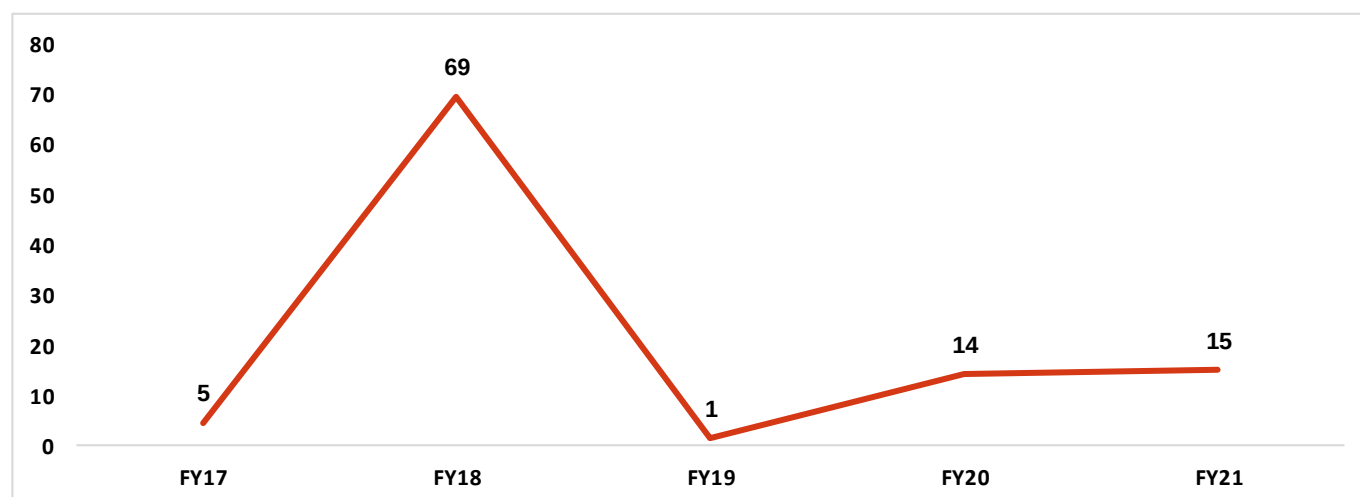
HIAL's Finance related charges for FY17-FY21 are summarised below:

Table 46 Finance Related Cost Pattern for HIAL during Second Control Period

Particulars	FY17	FY18	FY19	FY20	FY21	CAGR(FY17-20)
Total Cost (Rs. Crores)	6.96	130.61	3.22	33.09	13.26	
Total Inflation Adjusted Cost (Rs. Crores)	6.96	126.85	3.00	30.32	12.00	63.62%
Inflation Adjusted cost per PAX (Rs.)	4.57	69.32	1.40	14.05	14.91	45.43%

We observe that an Increase in finance charges FY18 is due to refinancing of term loans through USD Bond. HIAL submitted a request to consider this one time expense for raising of bond as allowable expense along with auditors certificate to the authority. The authority vide its order dated March 27, 2020 (please refer clause 6.63 of the order) agreed to consider such one time cost as there has been a significant reduction in borrowing cost from the then 10.7% per annum for RTL and 16.17% for ECB to 8.9% per annum on account of issuance of USD Bond.

Figure 5 Inflation Adjusted per PAX Finance Cost during second control Period (Rs.)



The finance related charges are not directly related to passenger growth rate and hence the cost per pax shows an abrupt trend with increase in (FY18) due to refinancing costs.

7.1.5 Utility Cost

HIAL's Utility Cost for FY17-FY21 is summarised below:

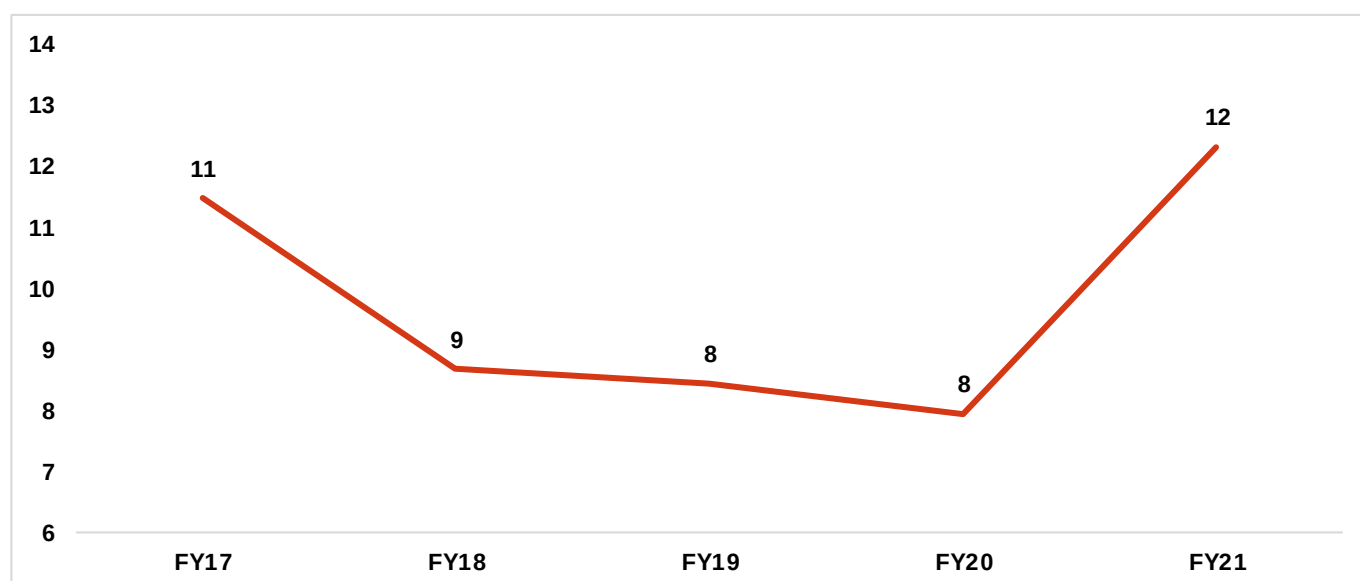
Table 47: Utility Cost Pattern for HIAL during Second Control Period

Particulars	FY17	FY18	FY19	FY20	FY21	CAGR(FY17-20)
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Total Cost (Rs. Crores)	17.49	16.33	19.35	18.70	11.10	
Total Inflation Adjusted Cost (Rs. Crores)	17.49	15.86	18.03	17.13	10.04	(0.68)%
Inflation Adjusted Utility Cost per PAX (Rs.)	11.47	8.67	8.44	7.94	12.48	(11.56)%

We observe that over the period HIAL has adopted several cost optimization initiatives, the details of which are given in section 6.2 above. The initiatives of introducing solar power, migration to LED lamps, adoption of water conservation measures and using technology based control systems for operations of various equipments led to savings in utility costs.

Figure 6 Inflation Adjusted per PAX Utility Cost during second control Period (Rs.)



We conclude that as utility costs are capacity based costs that are more sensitive to capacity related parameters than to passenger movements and therefore inflation adjusted utility cost per PAX decreased at a CAGR of 11.56% due to increase in traffic movement.

7.1.6 Repair and Maintenance Cost

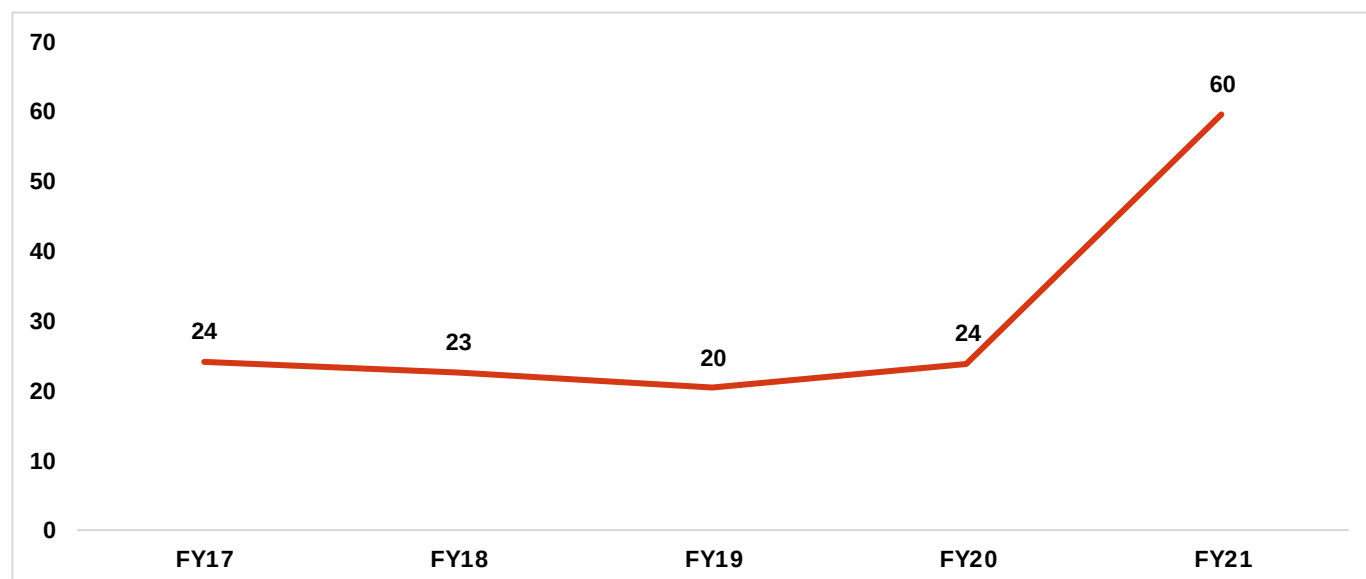
HIAL's Repair and Maintenance Cost for FY17-FY21 is summarised below:

Table 48 Repair and Maintenance Cost Pattern for HIAL during Second Control Period

Particulars	FY17	FY18	FY19	FY20	FY21	CAGR(FY17-20)
Total Cost (Rs. Crores)	36.94	42.74	46.87	56.27	53.02	
Total Inflation Adjusted Cost (Rs. Crores)	36.94	41.51	43.67	51.56	47.98	11.76%
Inflation Adjusted cost per PAX (Rs.)	24.24	22.69	20.44	23.89	59.60	(0.48)%

We understand that HIAL's in-house technical team over the period have developed the required skill sets for equipment health check-ups in order to decrease the downtime of plant and machinery. Further, the CMC with key OEMs also helped them to contain R&M costs despite the elevated level of operations.

Figure 7 Inflation Adjusted per PAX Repair and Maintenance Cost during second control Period (Rs.)



We observe that the increase in cost in R&M is also attributable to operationalization of IIDT and IDAT, asset aging and maintenance of security equipment which was earlier met through PSF funds now shifted to HIAL account.

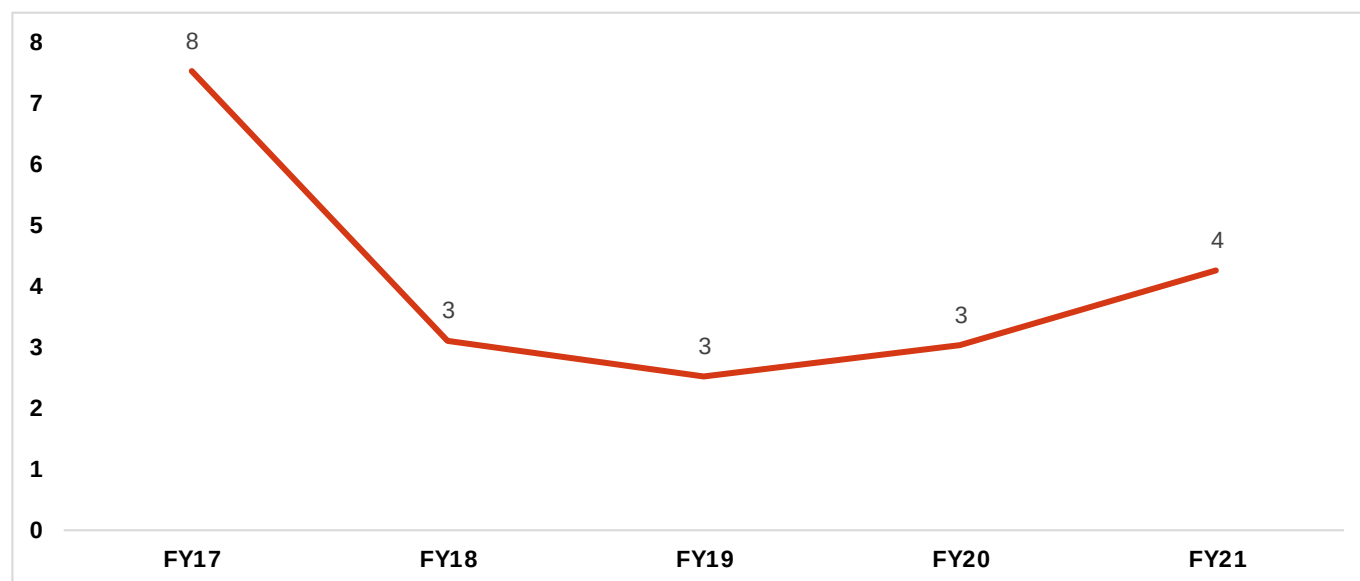
7.1.7 Stores and Spares Cost

HIAL's Stores and Spares Cost for FY17-FY21 is summarised below:

Table 49 Stores and Spares Cost Pattern for HIAL during Second Control Period

Particulars	FY17	FY18	FY19	FY20	FY21	CAGR(FY17-20)
Total Cost (Rs. Crores)	11.47	5.87	5.78	7.16	3.84	
Total Inflation Adjusted Cost (Rs. Crores)	11.47	5.70	5.38	6.56	3.43	(16.99)%
Inflation Adjusted cost per PAX (Rs.)	7.52	3.11	2.52	3.04	4.26	(26.08)%

Figure 8 Inflation Adjusted per PAX Stores and Spares Cost during second control Period (Rs.)



We observe that the Annual Maintenance Contract (AMC) with key OEMs now stands converted into Comprehensive Maintenance Contract (CMC) resulting into reduction of stores and spares.

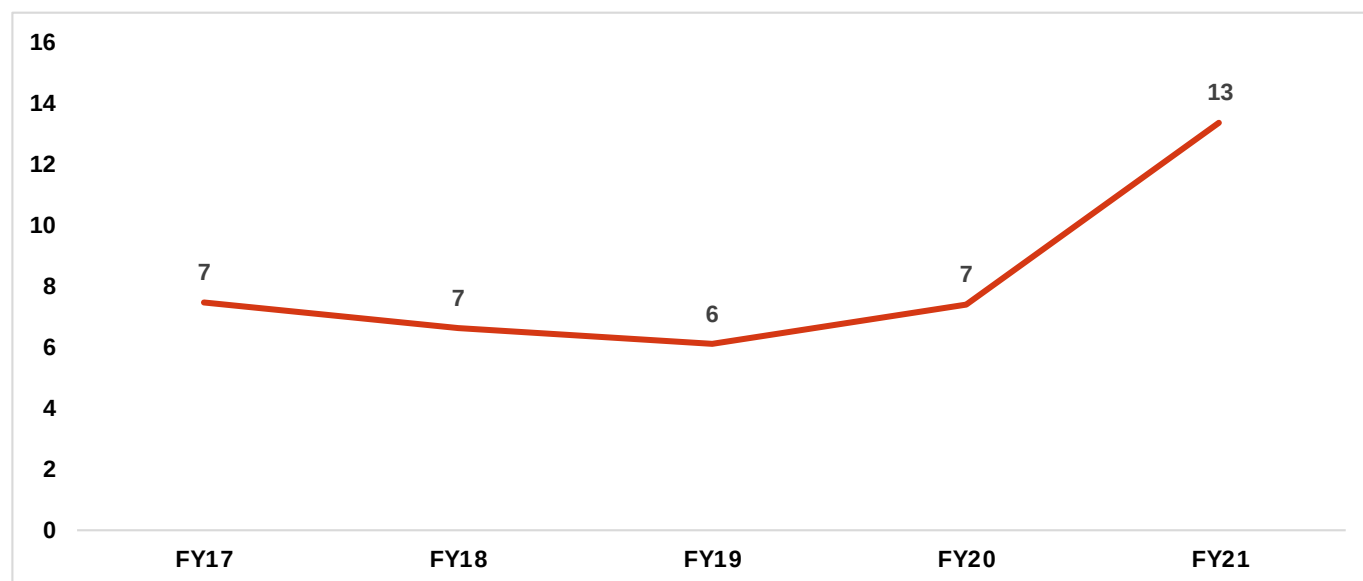
7.1.8 Housekeeping Cost

HIAL's Housekeeping Cost for FY17-FY21 is summarised below:

Table 50 Housekeeping Cost Pattern for HIAL during Second Control Period

Particulars	FY17	FY18	FY19	FY20	FY21	CAGR(FY17-20)
Total Cost (Rs. Crores)	11.37	12.46	14.01	17.49	12.04	
Total Inflation Adjusted Cost (Rs. Crores)	11.37	12.10	13.05	16.03	10.75	12.12%
Inflation Adjusted cost per PAX (Rs.)	7.46	6.61	6.11	7.42	13.35	(0.16)%

Figure 9 Inflation Adjusted per PAX Housekeeping Cost during second control Period (Rs.)



We observe that the housekeeping cost has seen increase due to increase in traffic, commissioning of IIDT and IDAT. However, the increase in housekeeping charges has been in line with the growth in the passenger traffic. The real housekeeping charges have grown by CAGR of 12.12% which is in line with CAGR of pax growth of 12.30% during the period FY17-20.

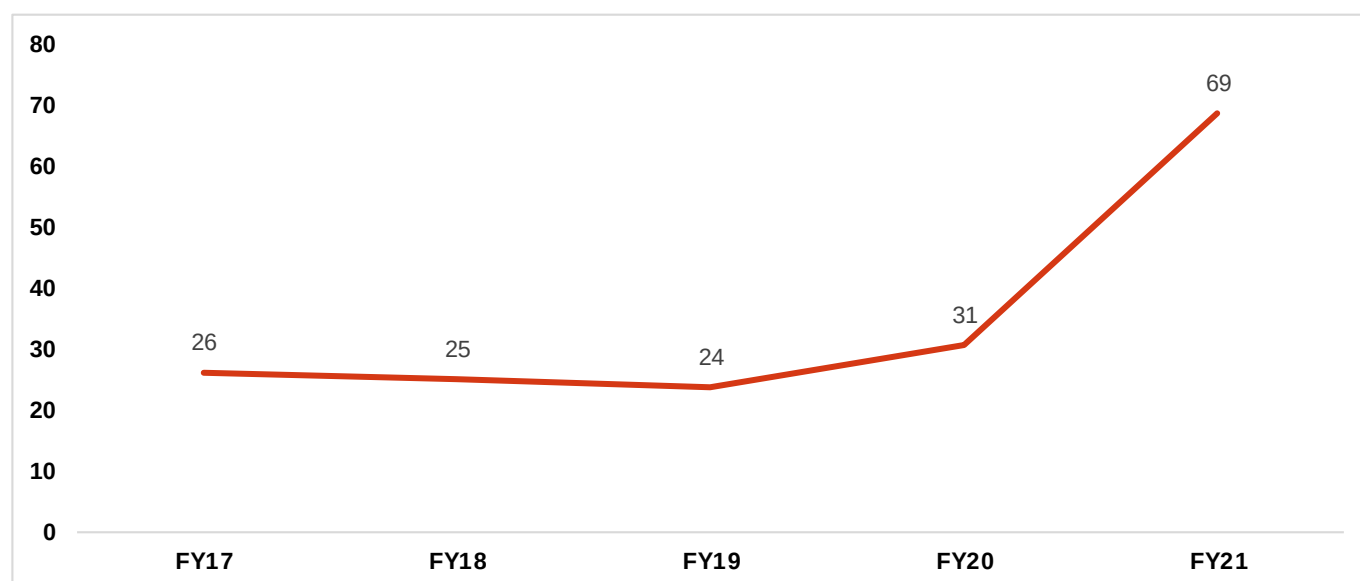
7.1.9 Other Operating Cost (Insurance, Technical Services)

HIAL's Other Operating Cost for FY17-FY21 is summarised below:

Table 51 Other Operating Cost Pattern for HIAL during Second Control Period

Particulars	FY17	FY18	FY19	FY20	FY21	CAGR(FY17-20)
Total Cost (Rs. Crores)	39.92	47.21	54.49	72.25	61.90	
Total Inflation Adjusted Cost (Rs. Crores)	39.92	45.85	50.76	66.20	55.26	18.36%
Inflation Adjusted cost per PAX (Rs.)	26.20	25.06	23.76	30.67	68.65	5.40%

Figure 10 Inflation Adjusted per PAX Other Operating Cost during second control Period (Rs.)



We infer that the increase in other operating expenses is due to the increase in the level of business activity plus an inflationary growth in the expenses. Other operating cost per PAX is high in FY21 due to lower traffic attributable to ongoing pandemic and travel restrictions imposed by the Government.

7.2 Summary

The analysis of the key components of O&M costs shows that while the absolute cost has increased over the duration of the Second Control Period due to increased passenger traffic and ramping up of IIAT and IIDT operations, HIAL has been able to improve the efficiency of its operations, as evidenced by a lower growth or even decrease in costs on a per passenger basis on most of its key cost heads.

- The overall payroll cost has increased, but payroll cost per pax has grown at a rate lower than passenger growth rate.
- The admin cost per pax has increased at a rate lower than passenger growth rate
- The security cost per pax has increased at a rate lower than passenger growth rate.
- The finance related charges due to bad debt is extremely high in the year FY18 due to onetime bond issuance to reduce the cost of borrowing
- The utility cost per pax has gone down which suggests adoption of efficient measures.
- The R&M cost per pax has gone down which suggests adoption of efficient measures or delay in expenses.
- The Stores & Spares cost per pax has gone down which suggests adoption of efficient measures or delay in R&M expenses.
- The housekeeping cost per pax has gone down which suggests adoption of efficient measures.
- The other operating income cost per pax has increased at a rate lower than passenger growth rate due to increase in operations

8. Benchmarking of international and domestic airports

8.1 Internal Benchmarking

In this section, the comparison of various operational and cost parameters is presented. Period under consideration is 2012 to 2021. This will enable us to perform an internal benchmarking analysis.

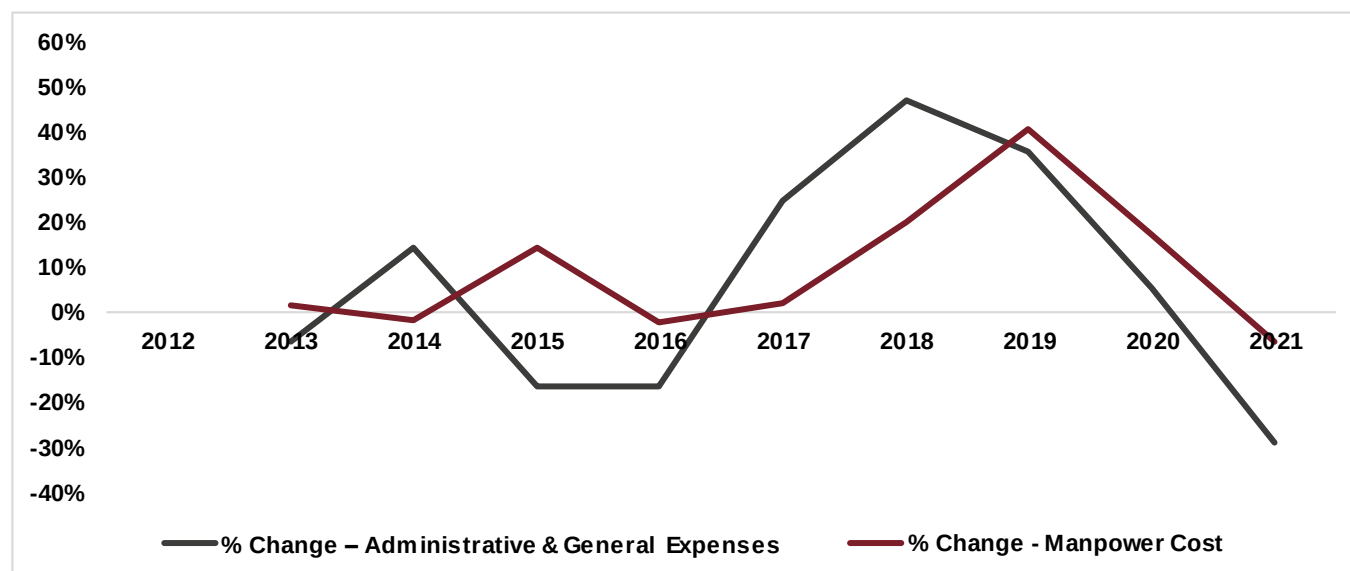
Administrative & General expenses and manpower cost for a period 2012-2021 are summarised below:

Table 52: Cost Movement of Administrative & General and Manpower Expenses at HIAL

Particulars (Rs. Crores)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Administrative & General Expenses	70.38	65.69	75.13	62.82	52.53	65.65	96.52	131.04	137.76	97.90
Manpower Cost	52.91	53.79	52.76	60.25	58.87	60.10	72.20	101.54	119.15	111.34
% Change – Administrative & General Expenses		-7%	14%	-16%	-16%	25%	47%	36%	5%	-29%
% Change - Manpower Cost		2%	-2%	14%	-2%	2%	20%	41%	17%	-7%

Below graph depicts change in Administrative and General and Manpower Expenses for the period 2012-2021:

Figure 11 % change movement in Administrative and General and Manpower Expenses for a period 2012-2021



Passenger traffic and Air traffic movement

Passenger Traffic and Air Traffic Movement for a period 2012-2021 are summarised below:

Table 53 Movement of Passenger and Air Traffic at HIAL

Particulars	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Passenger Traffic (in millions)	8.60	8.38	8.73	10.51	12.49	15.24	18.30	21.36	21.58	8.05
Air Traffic Movement (in thousands)	99.8	90.8	88.2	94.5	106.3	131.3	150.1	180.1	183.5	86.0
CAGR of passenger traffic	1 st Control period – 9.8%					2 nd control period – FY17 – FY20 – 12.4% FY17 – FY21 – (14.8%)				
CAGR of ATM	1 st Control period – 1.6%					2 nd control period – FY17 – FY20 – 11.8% FY17 – FY21 – (10.0%)				

Below graphs depicts Passenger traffic and ATM for the period 2012-2021:

Figure 12 Passenger Traffic for the period 2012-2021 (in million pax)

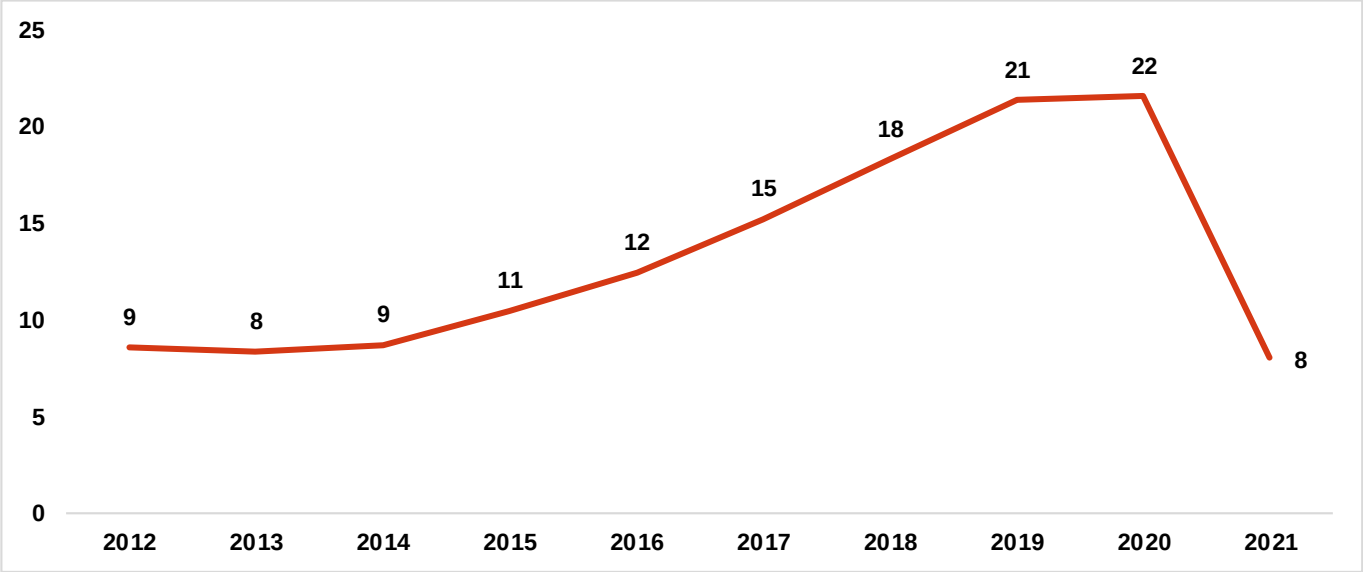
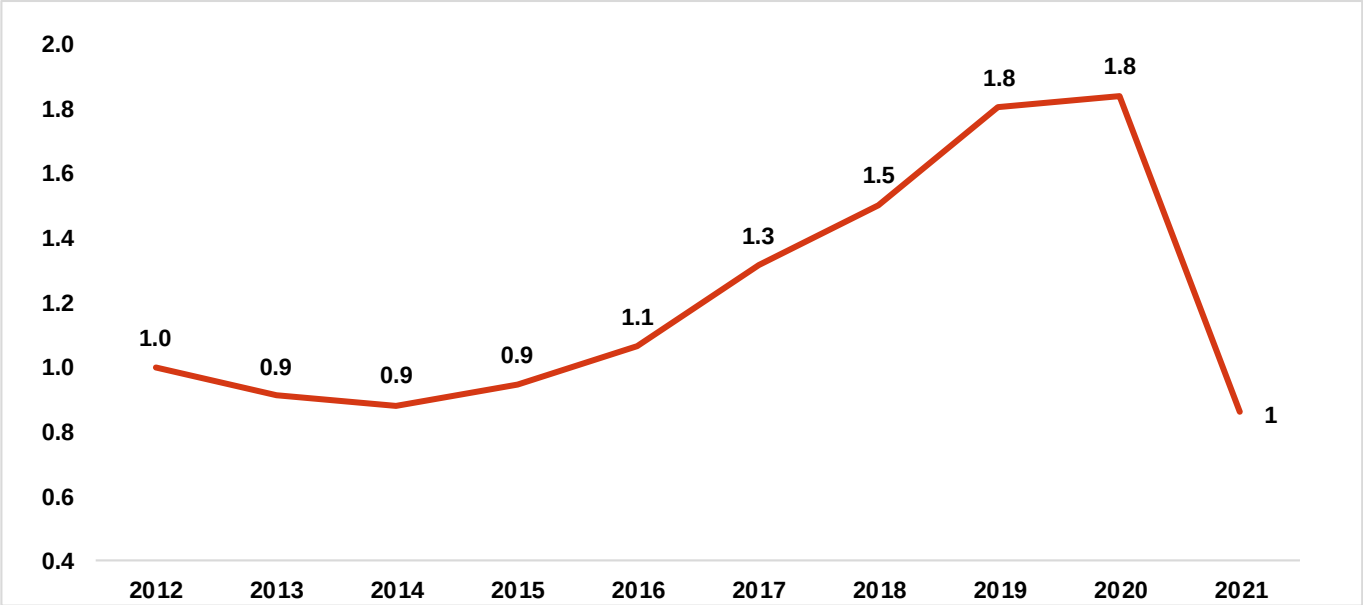


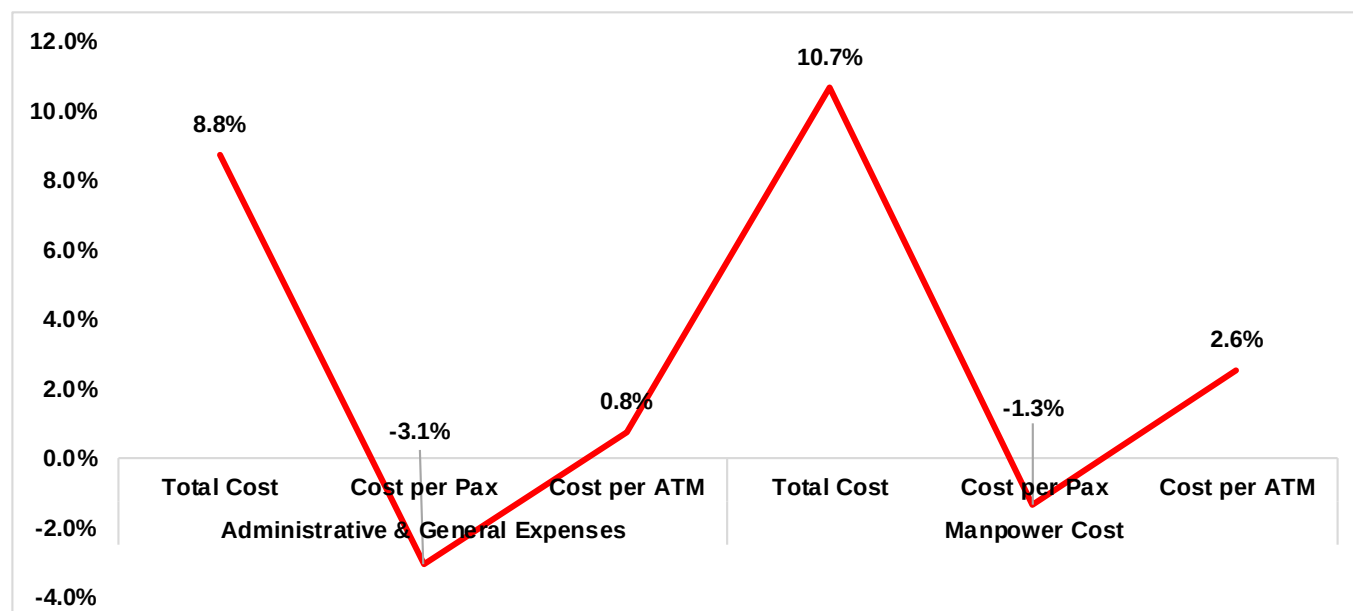
Figure 13 Air Traffic Movement for the period 2012-2021 (in thousand movement)



Passenger Traffic and Air Traffic movement have dipped significantly in FY21 due to Covid19.

The graph below depicts Cost CAGR for a 10 year period (2012-2020):

Figure 14 CAGR of Total Cost to CAGR of Costs per PAX/per ATM

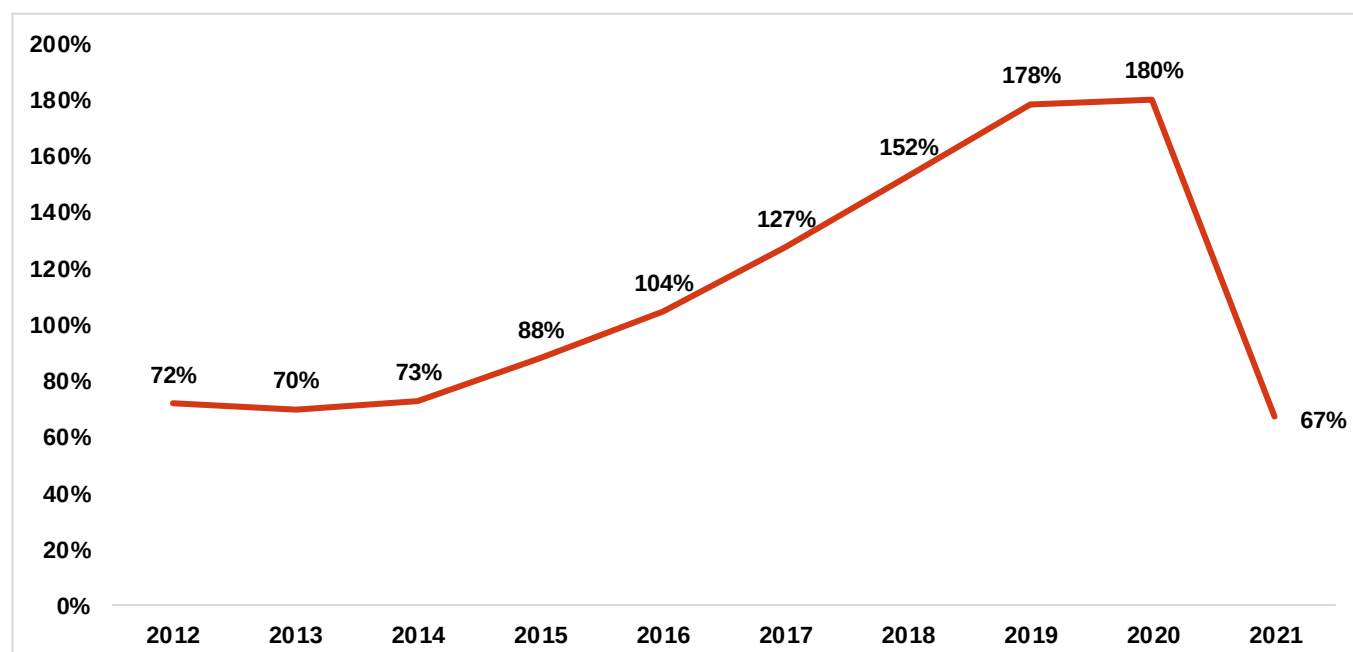


We understand that the growth rates of cost per PAX and ATM were lower when compared with the growth rate of the total costs justifying the impact of expanding operations. We have ignored the data for FY21 to avoid uncharacteristic CAGR numbers as a result of ongoing pandemic and travel restrictions imposed by the Government.

Terminal capacity utilisation

The graph below depicts Passenger Terminal Capacity Utilisation for a 10 year period (2012-2021).

Figure 15 Passenger Terminal Capacity Utilisation (%)



We can observe an exponential increase in capacity utilisation for HIAL in the past decade owing to increased passenger growth rate. Therefore, the augmentation of capacity is needed to maintain/improve service delivery to the passengers at the airport.

Proportion of domestic and international passenger traffic

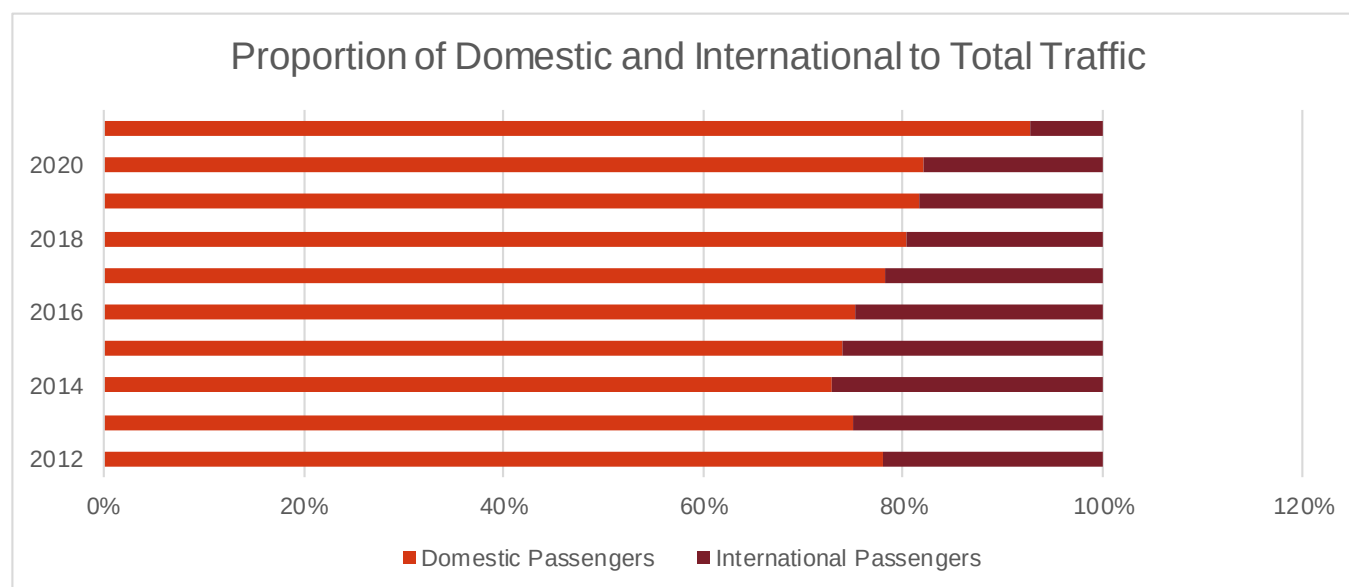
Passenger Mix for HIAL is summarised below:

Table 54 Break up for Passenger Mix for HIAL during 2012-2021

Particulars	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Domestic Passengers	78%	75%	73%	74%	75%	78%	80%	82%	82%	93%
International Passengers	22%	25%	27%	26%	25%	22%	20%	18%	18%	7%

The graph below depicts Passenger Mix for a 10 year period (2012-2021):

Figure 16 Graphical Representation of Passenger Mix for HIAL 2012-2021



We understand that domestic passengers' movement can be managed at a lower cost and higher gate utilisation, whereas international passengers' movement involves high cost of operations. HIAL has managed to keep its operating cost in check due to an increasing share of domestic passengers in the past decade.

8.2 External Benchmarking

To perform an external benchmarking analysis, airports have to be shortlisted. This selection is based on similarity of dynamic variables pertaining to the operations of an airport. Some of the influencing factors include:

- Passenger volume
- Capacity constraints
- Mix of International and domestic traffic
- Type of aircraft handled
- Degree of outsourcing
- Length and breadth of the runways
- Size of the Terminal
- Regulatory factors

We understand that these airports have comparable business models and operate in alike business environments. The airports selected are:

Table 55 Details of Domestic Airports for External Benchmarking

S.No	Airport	Date of Commencement	Type of Airport
1	Bengaluru International Airport Limited (BIAL)	May 2008	Green-Field
2	Cochin International Airport Limited (CIAL)	June 1999	Green-Field
3	Delhi International Airport Limited (DIAL)	April 2006	Brown-Field
4	Mumbai International Airport Limited (MIAL)	April 2006	Brown-Field

We also understand that beyond the core airside operational functions, different airports have little in common and largely vary from each other in many ways. The costs of operation, maintenance and administration are variable to the type of tilt (single, dual, hybrid and whether the airport is required to keep departing and arriving international passengers sterile from each other. Therefore, we conclude that airports are diverse and there is no typical or perfectly comparable airport.

The data for the purpose of benchmarking the above costs for these airports were taken from the AERA Consultation Paper No. 35 / 2020-21 issued for MIAL.

Passenger traffic and Air traffic movement of the airports in comparison for FY18 are summarized below:

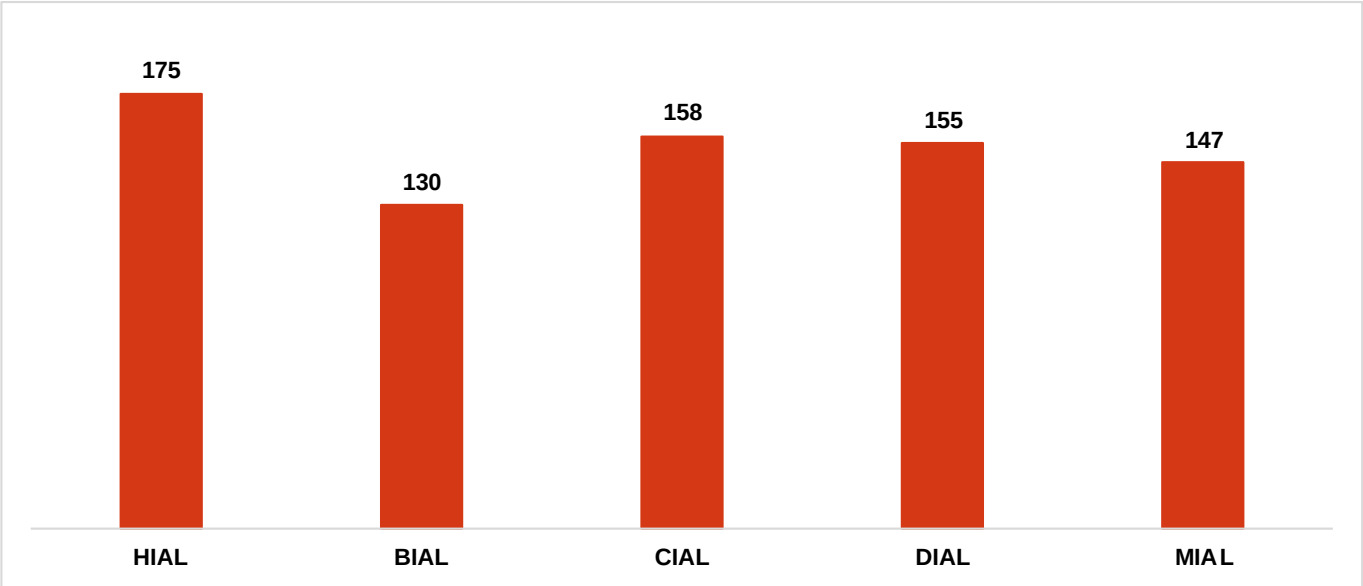
Table 56 Passenger Traffic for Comparable Airports in India in FY18

Particulars	HIAL	BIAL	CIAL	DIAL	MIAL
Passenger traffic (<i>in millions</i>)	18.2	16.9	10.1	65.7	48.5
Air traffic movement (<i>in nos.</i>)	1,49,600	1,96,600	68,800	4,59,243	3,20,689

Operation and Maintenance Costs Comparison

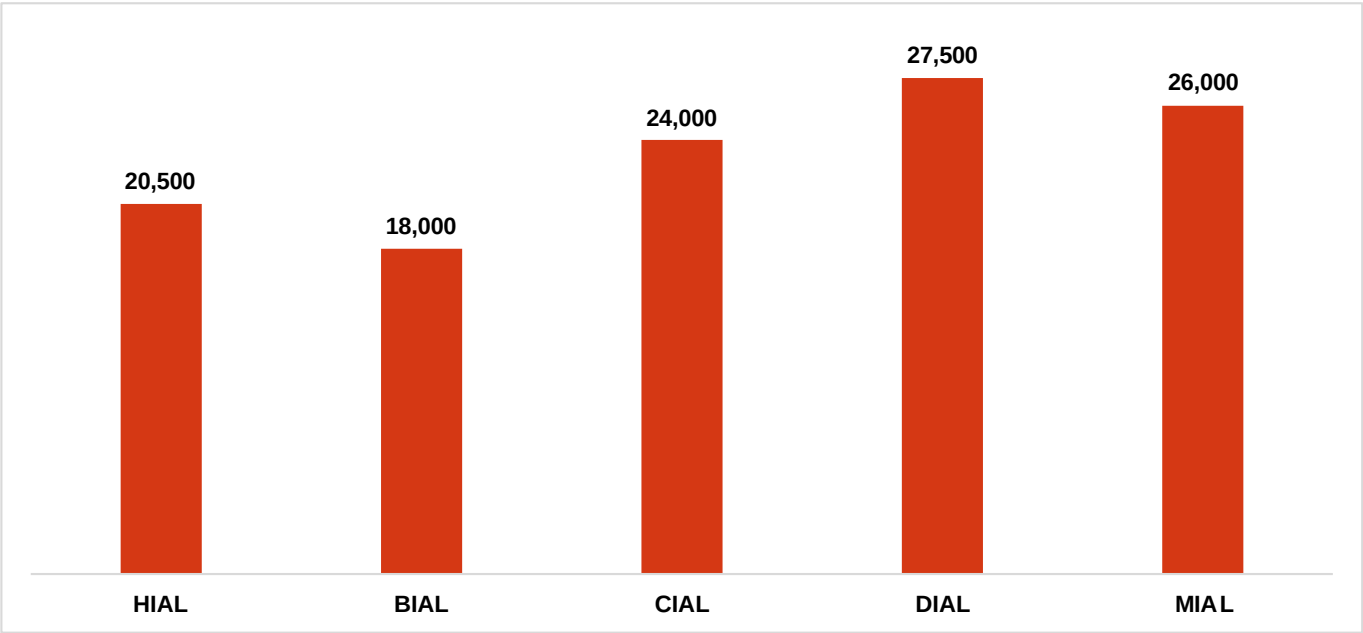
The graph below depicts O&M Cost per PAX in FY18 for comparable airports:

Figure 17 O&M Cost per PAX in FY18 for comparable airports



The graph below depicts O&M Cost per ATM in FY18 for comparable airports:

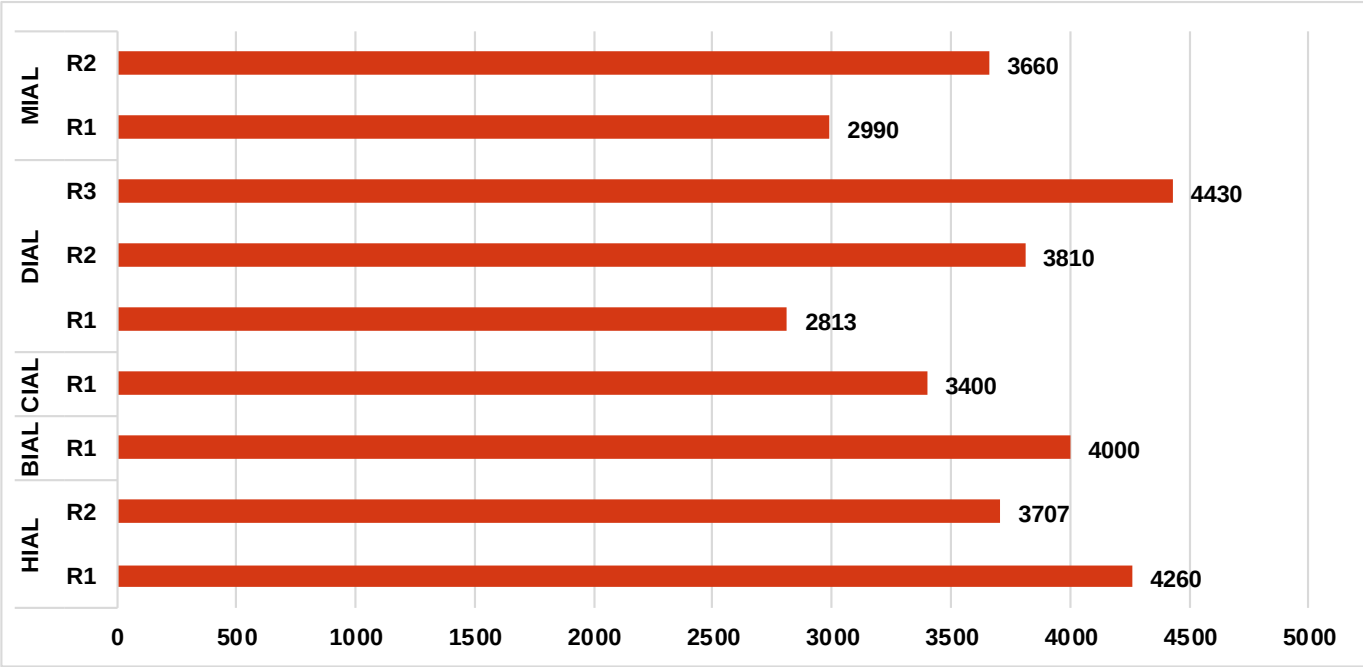
Figure 18 O&M Cost per ATM in FY18 for comparable airports



The O&M cost per pax is higher for HIAL while O&M cost per ATM is lower for HIAL when compared to other airports

Number of Runways and Size of the Runways:
The graph below depicts runway length of comparable airports:

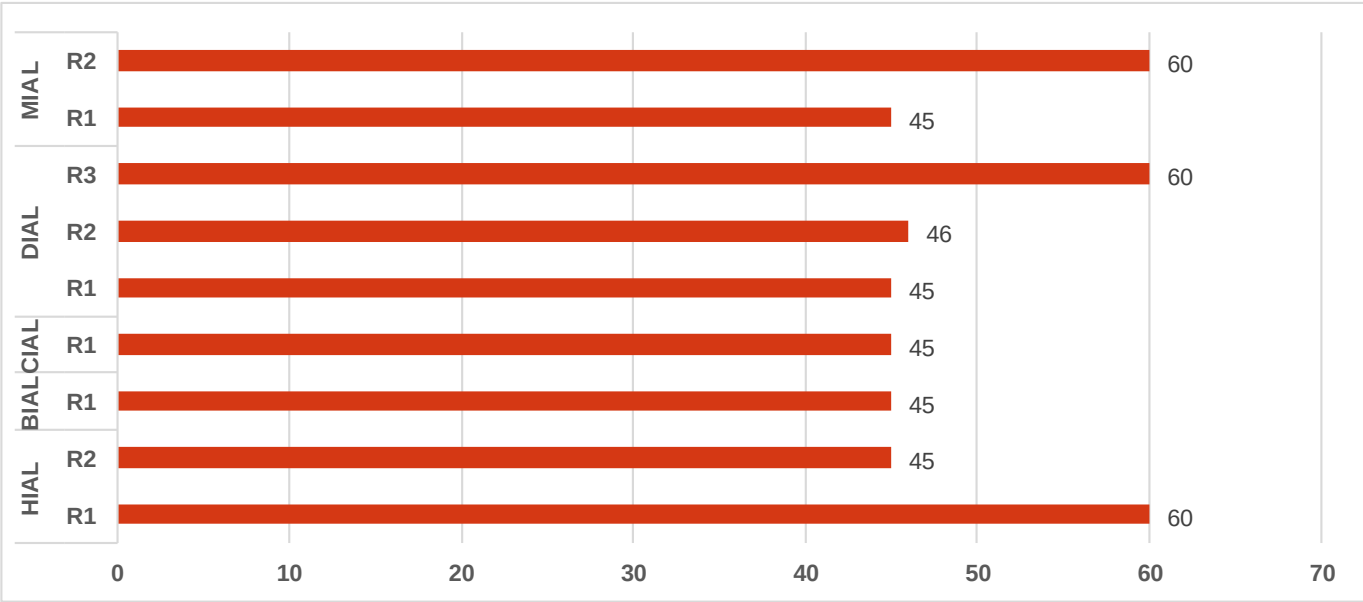
Figure 19 Runway Length of Comparable airports (Sqm)



We observe that Delhi, Mumbai and Hyderabad airports operate with more than one runway and are comparatively lengthier and code F compliant (The width of the runway can support A380 aircraft with wingspan of more than 80 metres).

The graph below depicts runway breadth of comparable airports:

Figure 20 Runway Breadth of Comparable airports (Sqm)

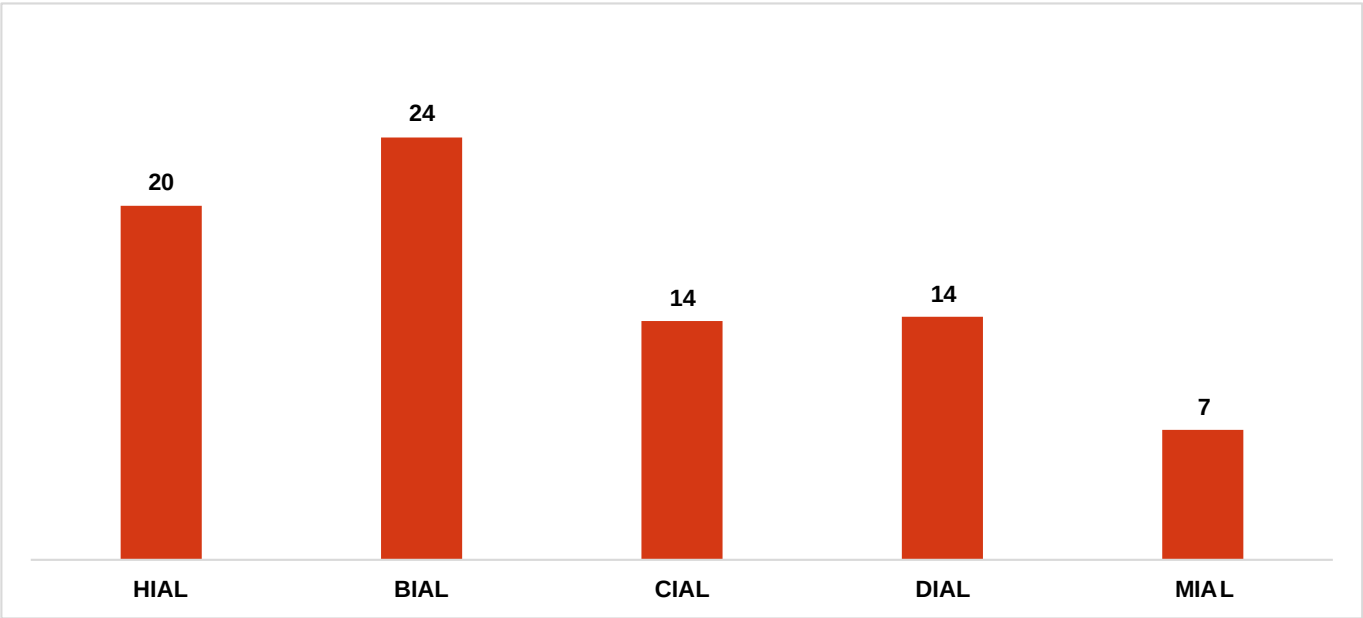


Airport management costs like Airside lighting, cleaning and maintenance costs, ground transportation costs, firefighting, and safety costs are variable to length and breadth of the runway. Therefore, we can infer that costs will be comparatively higher at **HIAL**, MIAL and DIAL.

Passenger Traffic Growth

The graph below depicts traffic growth in FY18 for comparable airports:

Figure 21 Traffic growth in FY18 (%)

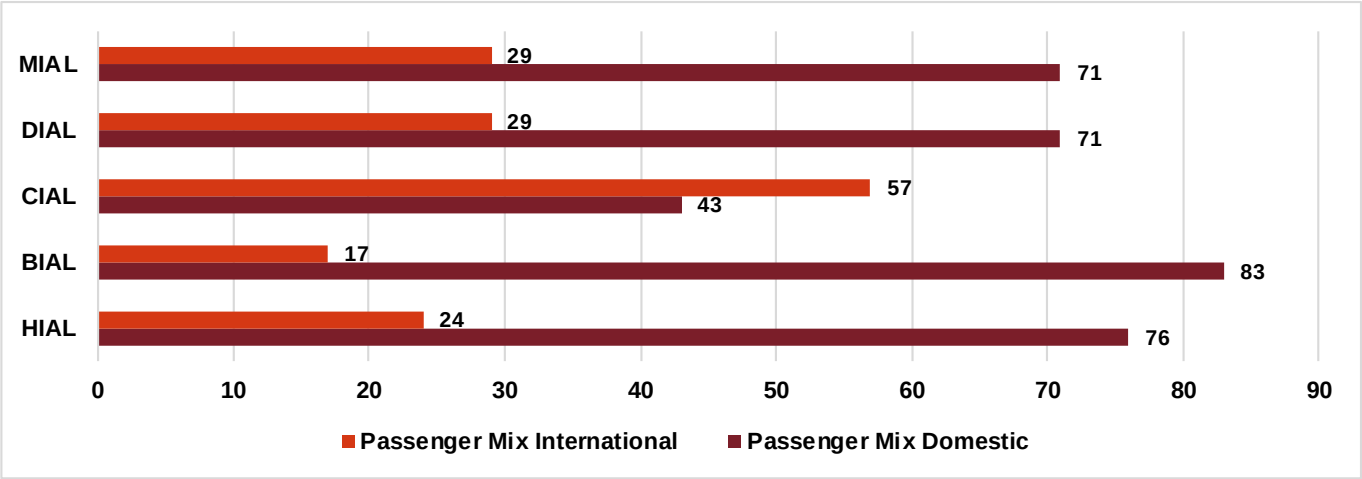


We understand that growing air traffic and passenger traffic movement impact passenger experience and preference for a particular airport. Hence, it is imperative for the airport to maintain both the terminal and airside infrastructure which causes increase in costs.

Passenger Mix

The graph below depicts passenger mix of comparable airports:

Figure 22 Passenger Mix of Comparable airports (%)



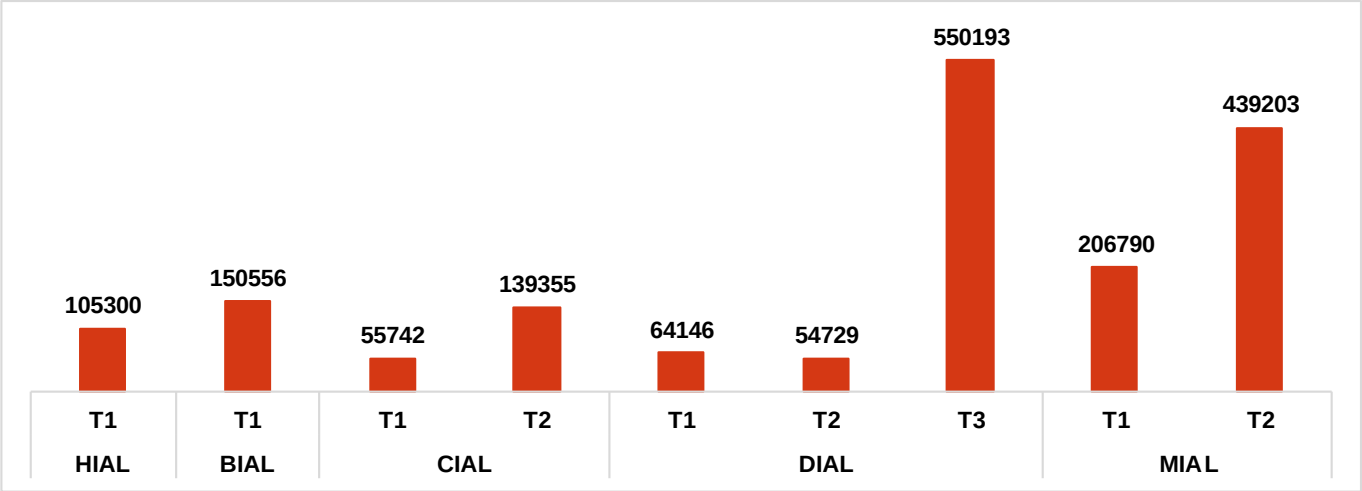
We observe that a rising share of domestic passenger for airports in India has led to cost efficiencies. We infer that HIAL has had similar favourable revenue mix wherein the burden of higher costs due to additional services like customs, immigration having costs of security, personnel, health care etc.

Terminal Size and Capacity Utilisation for FY18

The terminal size and utilization impact the level of service and airport operator needs to ensure that the terminal movement and experience for passenger is seamless and with minimum bottlenecks.

The graph below depicts terminal size of comparable airports:

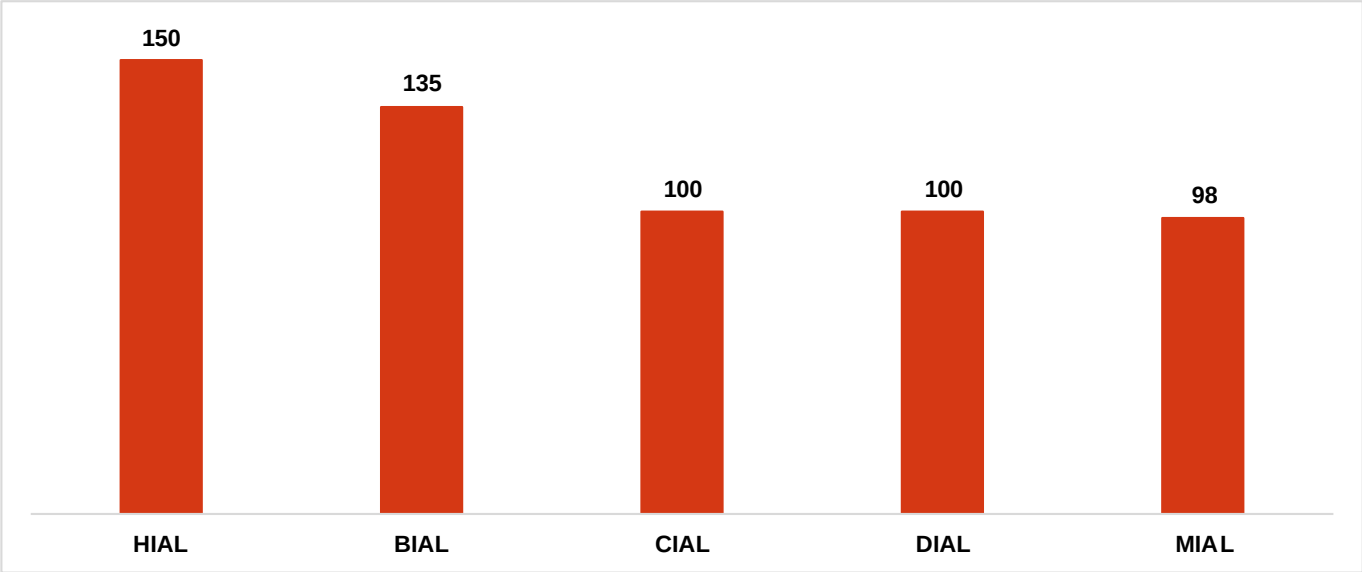
Figure 23 Terminal Size of Comparable airports (Sqm)



Term

The graph below depicts terminal capacity utilisation of comparable airports:

Figure 24 Terminal Capacity of Comparable airports in FY18 (%)

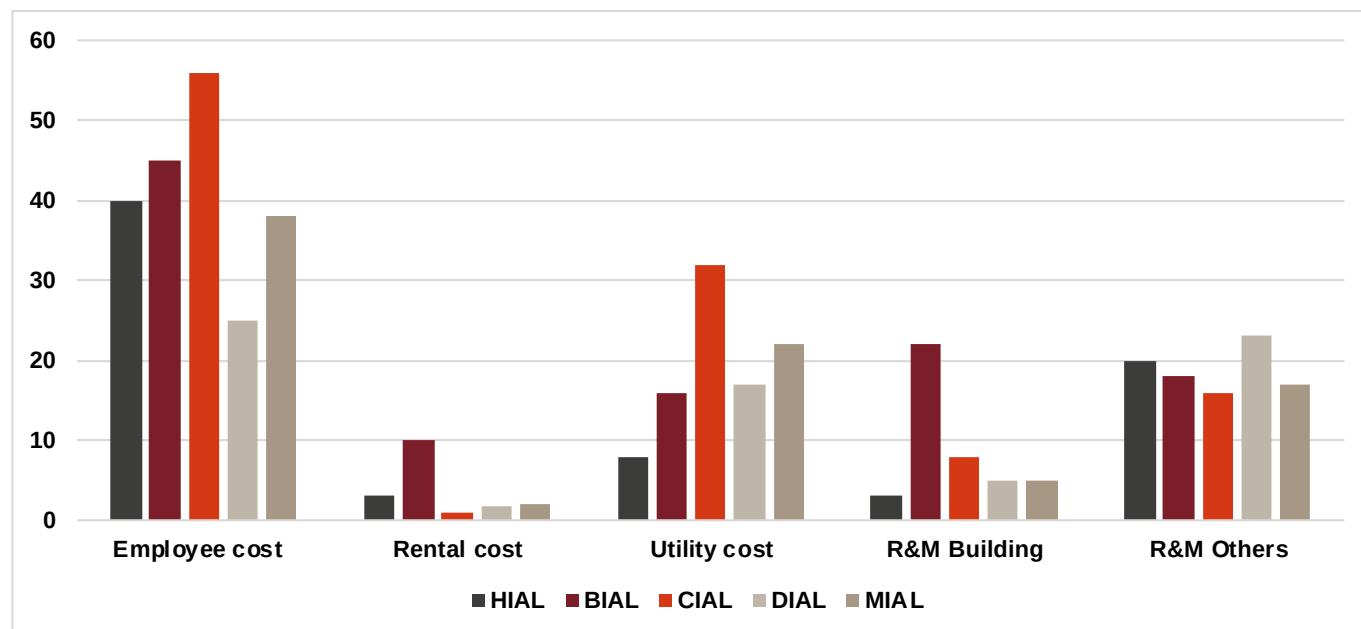


We understand that increase in capacity utilisation can impact cost per PAX in two ways i.e. reduction in cost per PAX due to higher traffic or increase in cost per PAX due to associated cost of congestion at airports and aircraft delays. **HIAL** has the highest capacity utilisation in FY18 of all the airports under consideration.

Cost per PAX and ATM

The graph below depicts various costs per PAX of comparable airports:

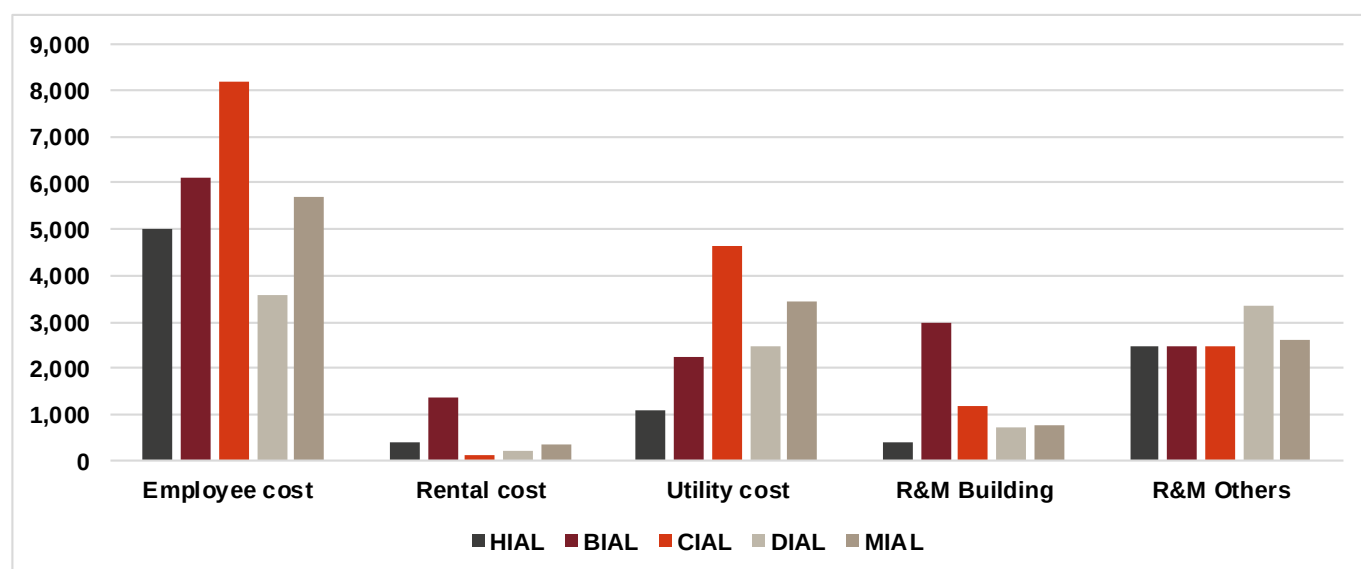
Figure 25 Various Costs per PAX for Comparable airports in FY18



We infer that HIAL has managed to outperform its peers under consideration for per PAX costs like utility, R&M building, employee cost. This has been a result of operational efficiencies measures undertaken at HIAL.

The graph below depicts various costs per ATM of comparable airports:

Figure 26 Various Costs per ATM for Comparable airports in FY18



8.3 Summary

- The internal benchmark of HIAL's O&M costs was performed by studying the growth trend of various cost components over a period from 2012-2020, to the extent of available data.
- The findings of the study suggests that the increase in total costs has been higher than the growth in passenger traffic and Air Traffic Movements, however, the per pax cost and per ATM cost for most cost heads has been lower than the passenger growth rate over the same period.
- Based on the analysis carried out in this report, it is concluded that O&M submitted by HIAL are reasonable and HIAL has adopted measures to achieved further efficiency in operating cost.
- Additionally, the benchmarking of HIAL with other PPP airports suggests that HIAL ranks lower in most of the cost parameters which suggests that HIAL has managed its cost efficiently and adopted measures to keep the same within limits.

9. Overall Summary of the Study

- RGI Airport commenced operations on 23rd March, 2008 post signing of the concession agreement on 20th December 2004 between HIAL and MoCA. The terminal capacity is 12 million passengers and the airport crossed 20 million mark in FY19.
- RGI airport has grown at a growth rate of 12.8% for passenger traffic, 12.0% for ATM movements and 5.1% for cargo traffic between FY17 and FY20
- HIAL has submitted the true up of total operating expenditure for the second control period as Rs. 2434.98 crore, out of which aeronautical operating expenditure are Rs. 1904.25 crore, non –aero operating expenditure are Rs. 496.70 crore and non-airport operating expenditure are Rs. 34.04 crore.
- The operating expenditure allocation methodology adopted by HIAL is based on its understanding of the project agreements and has been summarised in section 5.1 of this report
- The Authority had approved Rs. 1768.27 crore over the second control period out of which aeronautical expenses was Rs. 1428.04 crore and non-aeronautical was Rs. 132.25 crores
- General segregation principles were developed for classification of each expense and logic has been established for apportionment of common expense into Aeronautical and Non-aeronautical categories as detailed in section 5.3
- The revised ratio for Gross fixed asset has been calculated from the results of the study on allocation of assets between aeronautical and non-aeronautical assets as part of scope of work under RFP No. 01/2020-21 initiated by the Authority. The Aero-non-aero ratio has been computed based on revised segregation logic developed in this study. The ratio from FY17-FY21 is given in Table 18.
- The terminal ratio of Aero: 84.6% and Non – Aero: 15.4% has been used to segregate common cost for customer facilities & logistics and housekeeping expense related to terminal building
- By application of the revised segregation logic using the description of the expense, classification of common costs into Aeronautical and Non-aeronautical has been carried out.
- The concession fees is calculated as per the revised segregation logic in section 5.5.6 in line with Authority's previous treatment in Order No. 34 2019/20 and revised concession fees towards aeronautical opex to be taken into consideration
 - Adjusted total aeronautical operating expenditure as per revised allocation: Rs. 1853.32 crores
 - Adjusted non – aeronautical operating expenditure as per revised allocation : Rs. 312.85 crores
 - Total Non-airport related operating expenditure as per revised allocation : Rs. 48.92 crores
 - Total adjustment to the aeronautical operating expenditure as per revised allocation : Rs. (50.93) crores
- **Efficiency in O&M for the second control period –**
 - The analysis of the key components of O&M costs shows that while the absolute cost has increased over the duration of the Second Control Period due to increased passenger traffic and ramping up of IIAT and IIDT operations, HIAL has been able to improve the efficiency of its operations, as evidenced by a lower growth or even decrease in costs on a per passenger basis on most of its key cost heads.

- The overall payroll cost has increased, but payroll cost per pax has grown at a rate lower than passenger growth rate.
- The admin cost per pax has increased at a rate lower than passenger growth rate.
- The security cost per pax has increased at a rate lower than passenger growth rate.
- The finance related charges due to bad debt is extremely high in the year FY18 due to onetime bond issuance to reduce the cost of borrowing
- The utility cost per pax has gone down which suggests adoption of efficient measures.
- The R&M cost per pax has gone down which suggests adoption of efficient measures or delay in expenses.
- The Stores & Spares cost per pax has gone down which suggests adoption of efficient measures or delay in R&M expenses.
- The housekeeping cost per pax has gone down which suggests adoption of efficient measures.
- The other operating income cost per pax has increased at a rate lower than passenger growth rate due to increase in operations
- HIAL has adopted cost efficiency measures as detailed in section 5.2 which has resulted in cost savings of Rs. 65.94 crores over the second control period.
- **Internal and External Benchmarking**
 - The internal benchmark of HIAL's O&M costs was performed by studying the growth trend of various cost components over a period from 2012-2020, to the extent of available data.
 - The findings of the study suggests that the increase in total costs has been higher than the growth in passenger traffic and Air Traffic Movements, however, the per pax cost and per ATM cost for most cost heads has been lower than the passenger growth rate over the same period.
 - Additionally, the benchmarking of HIAL with other PPP airports suggests that HIAL ranks lower in most of the cost parameters which suggests that HIAL has managed its cost efficiently and adopted measures to keep the same within limits.

9.1 Conclusion

- The airport operator, i.e. HIAL has submitted the true up of total operating expenditure for the second control period as Rs. 2434.98 crore, out of which aeronautical operating expenditure are Rs. 1904.25 crore, non –aero operating expenditure are Rs. 496.70 crore and non-airport operating expenditure are Rs. 34.04 crore.
- Based on the study, the total operational expenditure is Rs. 2214.71 crores (based on audited financial statements and revised allocation), and proposed aeronautical expenditure is Rs. 1853.32 crores resulting in total reduction of Rs. 50.93 crores for the second control period. The opex allocation ratio submitted by HIAL was 78.20% and revised opex allocation ratio is 83.70%.

10. Annexure

10.1 Operating expenditure as per HIAL allocation

HIAL has submitted the operating expense for each of the year along with its classification between aero, non-aero and non-airport categories.

The year wise details for operating expenses are summarized below:

Summary of the operating expenditure (excluding concession fee) as per HIAL's submission

Table 57: Operating expenditure for FY2017 as per HIAL's submission

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
As per HIAL's submission (FY2017)						
1.	Payroll Related Expenses	18.48	4.04	36.55	1.01	60.09
a)	Contribution to Provident fund and other funds	1.68	0.45	2.57	0.09	4.80
b)	Recruitment charges	0.00	0.00	0.08	0.00	0.08
c)	Salaries and Wages	16.66	3.58	28.85	0.92	50.01
d)	Staff welfare expenses	0.10	0.01	3.69	0.00	3.80
e)	Training charges	0.04	0.00	1.37	0.00	1.41
2.	Administration & General Expenses	10.16	1.35	79.36	1.04	91.91
a)	Lease Rent to GoT	2.38	0.00	0.00	0.89	3.28
b)	Rates and Taxes	0.00	0.00	5.68	0.00	5.68
c)	Security Charges	0.25	0.24	10.50	0.00	10.99
d)	General Administrative Expenses	7.47	1.11	45.50	0.15	54.22
i.	Rent	0.00	0.00	1.14	0.02	1.15
ii.	Legal and Professional Charges	0.98	0.23	7.18	0.00	8.40
iii.	Management Fees	0.00	0.00	22.58	0.00	22.58
iv.	Advertisement & Business Promotion	1.15	0.57	1.74	0.08	3.53
v.	Provision for Doubtful Advances	0.00	0.00	0.17	0.00	0.17
vi.	Communication Expenses	3.01	0.02	0.18	0.00	3.21
vii.	Directors' Sitting Fees	0.00	0.00	0.18	0.00	0.18
viii.	Loss on exchange fluctuation	0.00	0.00	0.00	0.00	0.00

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
ix.	Loss on sale / discarding of assets	0.00	0.00	0.28	0.00	0.28
x.	Miscellaneous Expenses	0.53	0.03	1.13	0.01	1.70
xi.	Office maintenance	0.47	0.00	2.32	0.00	2.79
xii.	Payment to auditor	0.00	0.00	1.02	0.00	1.02
xiii.	Printing and Stationery	0.11	0.00	0.18	0.00	0.29
xiv.	Travelling and conveyance	1.23	0.27	7.39	0.04	8.92
e)	Bad debts written off	0.04	0.00	0.00	0.00	0.04
f)	CSR & Donations	0.02	0.00	2.44	0.00	2.46
g)	Bank Charges	0.00	0.00	15.25	0.00	15.25
3.	Operating Expenditure	88.26	19.88	8.59	0.47	117.20
a)	Utilities	16.60	0.89	0.00	0.00	17.49
b)	Insurance	0.00	0.00	1.85	0.00	1.85
c)	Repairs and Maintenance	30.89	1.62	4.28	0.16	36.94
d)	Stores and Spares	10.51	0.62	0.29	0.06	11.47
e)	Housekeeping Expenses	9.45	1.61	0.05	0.26	11.37
f)	Operating & Maintenance Expenses	0.92	2.52	0.48	0.00	3.93
i.	Collection Charges	0.68	0.00	0.00	0.00	0.68
ii.	Bus Hire Charges	0.00	0.00	0.48	0.00	0.48
iii.	Health and safety expenses	0.24	0.00	0.01	0.00	0.25
iv.	Operating and maintenance expenses	0.00	1.86	0.00	0.00	1.86
v.	Operator fee	0.00	0.66	0.00	0.00	0.66
g)	Manpower Outsourcing	19.89	1.26	1.64	0.00	22.79
h)	Fuel Farm O&M Expenses	0.00	11.36	0.00	0.00	11.36
4.	Total (1+2+3)	116.90	25.27	124.50	2.52	269.19
5.	Less: Incidental Income	0.34	-	3.67	-	4.01
6.	Total (adjusted for incidental income) (4-5)	116.56	25.27	120.83	2.52	265.18
7.	One time refinancing cost	-	-	8.33	-	8.33
8.	Total (adjusted for incidental income and one time refinancing cost) (6-7)	116.56	25.27	112.50	2.52	256.85

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
9.	After apportionment of common into aero & non-aero	209.26	45.10	-	2.52	256.88
10.	Balance Forex Losses	35.28	7.06	-		42.34
11.	Total (9+10)	244.54	52.16	-	2.52	299.22
12.	Add : Incidental Income	3.36	0.65			4.01
13.	Total excluding incidental income (11+12)	247.90	52.81	-	2.52	303.23

Table 58: Operating expenditure for FY2018 as per HIAL's submission

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
As per HIAL's submission (FY2018)						
1.	Payroll Related Expenses	21.25	4.48	45.46	1.02	72.21
a)	Contribution to Provident fund and other funds	1.80	0.44	3.26	0.08	5.59
b)	Recruitment charges	0.00	0.00	0.18	0.00	0.18
c)	Salaries and Wages	19.39	4.05	36.28	0.94	60.67
d)	Staff welfare expenses	0.05	-0.01	4.05	0.00	4.09
e)	Training charges	0.01	0.00	1.69	0.00	1.69
2.	Administration & General Expenses	14.18	3.72	113.69	1.36	132.96
a)	Lease Rent to GOT	2.48	0.00	0.00	0.93	3.42
b)	Rates and Taxes	0.00	0.00	5.93	0.00	5.93
c)	Security Charges	0.37	1.25	15.36	0.00	16.98
d)	General Administrative Expenses	11.23	2.47	66.38	0.43	80.50
i.	Advertisement & Business Promotion	1.72	0.98	5.89	0.28	8.87
ii.	Rent	0.00	0.00	2.10	0.00	2.10
iii.	Legal and Professional Charges	3.80	0.94	11.24	0.00	15.98
iv.	Management Fees	0.00	0.00	31.52	0.00	31.52
v.	Communication Expenses	2.84	0.01	0.28	0.00	3.14

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
vi.	Directors' Sitting Fees	0.00	0.00	0.19	0.00	0.19
vii.	Miscellaneous Expenses	0.90	0.21	1.99	0.10	3.20
viii.	Office maintenance	0.44	0.00	2.87	0.00	3.32
ix.	Payment to auditor	0.00	0.00	0.70	0.00	0.70
x.	Printing and Stationery	0.11	0.01	0.18	0.01	0.31
xi.	Travelling and conveyance	1.43	0.30	9.40	0.04	11.17
e)	Provision for bad and doubtful debts	0.00	0.00	0.40	0.00	0.40
f)	CSR & Donations	0.09	0.00	6.59	0.00	6.68
g)	Bank Charges	0.00	0.00	19.04	0.00	19.04
3.	Operating Expenditure	93.40	21.59	9.12	0.49	124.61
a)	Utilities	15.68	0.64	-	-	16.33
b)	Insurance	-	-	2.44	-	2.44
c)	Repairs and Maintenance	35.33	1.58	5.65	0.18	42.74
d)	Stores and Spares	5.09	0.50	0.26	0.02	5.87
e)	Housekeeping	9.99	2.12	0.06	0.29	12.45
f)	Operating & Maintenance Expenses	0.77	2.87	0.51	-	4.15
i.	Bus Hire Charges	0.00	0.00	0.50	0.00	0.50
ii.	Health and safety expenses	0.11	0.00	0.01	0.00	0.12
iii.	Operating and maintenance expenses	0.00	2.15	0.00	0.00	2.15
iv.	Collection Charges	0.66	0.00	0.00	0.00	0.66
v.	Operator fee	0.00	0.72	0.00	0.00	0.72
g)	Manpower Outsourcing	26.55	1.20	0.20	-	27.95
h)	Fuel Farm O&M Expenses	-	12.67	-	-	12.67
4.	Total (1+2+3)	128.83	29.79	168.28	2.87	329.78
5.	Less: Incidental Income	0.54	0.00	5.67	0.00	6.21

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
6.	Total (adjusted for incidental income) (4-5)	128.29	29.79	162.61	2.87	323.57
7.	One time refinancing cost	-	-	111.17	-	111.17
8.	Total (adjusted for incidental income and one time refinancing cost) (6+7)	128.29	29.79	273.78	2.87	434.74
9.	After apportionment of common into aero & non-aero	353.78	78.06	-	2.87	434.71
10.	Balance Forex Losses	155.23	30.83	-	-	186.06
11.	Total (9+10)	509.01	108.89	-	2.87	620.77
12.	Add : Incidental Income	5.14	1.07			6.21
13.	Total excluding incidental income (11+12)	514.15	109.96	-	2.87	626.98

Table 59: Operating expenditure for FY2019 as per HIAL's submission

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
As per HIAL's submission (FY2019)						
1.	Payroll Related Expenses	25.61	6.21	67.88	1.83	101.53
a)	Contribution to Provident fund and other funds	2.17	0.53	4.54	0.15	7.39
b)	Training & Recruitment charges	0.01	-0.01	2.01	-	2.00
c)	Salaries and Wages	23.34	5.70	56.69	1.68	87.41
d)	Staff welfare expenses	0.09	-0.00	4.65	-0.00	4.73
2.	Administration & General Expenses	12.19	6.64	136.97	1.14	156.94
a)	Lease Rent to GoT	2.61	-	-	0.98	3.59
b)	Rates and Taxes	-	-	5.87	0.00	5.87
c)	Security Charges	0.48	0.65	17.22	-	18.36
d)	General Administrative Expenses	9.00	5.46	73.12	0.16	87.74
i.	Advertisement & Business Promotion	1.45	0.33	3.22	-0.00	5.00
ii.	Rent - Others	-0.00	-	3.11	-	3.11
iii.	Legal and Professional Charges	1.40	0.65	9.32	0.01	11.37

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
iv.	Management Fees	-	-	29.96	-	29.96
v.	Bad debts written off	-	3.75	-	-	3.75
vi.	Communication Expenses	2.29	0.01	0.43	0.00	2.74
vii.	Directors' Sitting Fees	-	-	0.25	-	0.25
viii.	Loss on exchange fluctuation	0.23	0.00	-0.01	0.00	0.22
ix.	Miscellaneous Expenses	1.24	0.19	2.13	0.00	3.56
x.	Office Maintenance	0.57	0.00	3.73	0.00	4.30
xi.	Payment to auditor	-	-	0.47	-	0.47
xii.	Printing and Stationery	0.11	0.01	0.77	0.00	0.89
xiii.	Travelling and conveyance	1.70	0.51	15.40	0.15	17.75
xiv.	Loss on sale of Investment in shares	-	-	4.34	-	4.34
e)	Provision for bad and doubtful debts	0.00	0.52	0.00	0.00	0.52
f)	CSR & Donations	0.10	0.00	33.77	0.00	33.87
g)	Bank Charges	0.00	0.00	6.99	0.00	6.99
3.	Operating Expenditure	99.33	25.85	14.84	0.48	140.50
a)	Utilities	18.99	0.36	-	-	19.35
b)	Insurance	-	-	2.28	-	2.28
c)	Repairs and Maintenance	35.91	2.12	8.66	0.18	46.88
d)	Stores and Spares	5.14	0.48	0.16	0.01	5.78
e)	Housekeeping cost	11.07	2.20	0.45	0.29	14.01
f)	Operating & Maintenance Expenses	0.91	3.73	0.72	-	5.37
i.	Bus Hire Charges	-	-	0.71	-	0.71
ii.	Health and safety expenses	0.21	0.00	0.01	-	0.22
iii.	Operating and maintenance expenses	-	3.01	-	-	3.01
iv.	Operator fee	-	0.72	-	-	0.72
v.	Collection Charges	0.70	-	-	-	0.70
g)	Manpower Outsourcing	27.32	1.95	2.57	-	31.83
h)	Fuel Farm O&M Expenses	-	15.01	-	-	15.01
4.	Total (1+2+3)	137.13	38.70	219.69	3.46	398.98
5.	Less: Incidental Income	0.29	-	7.94	-	8.23

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
6.	Total (adjusted for incidental income) (4-5)	136.84	38.70	211.75	3.46	390.75
7.	One time refinancing cost	-	-	4.29	-	4.29
8.	Total (adjusted for incidental income and one time refinancing cost) (6-7)	136.84	38.70	207.46	3.46	386.46
9.	After apportionment of common into aero & non-aero	300.06	82.92	-	3.46	386.43
10.	Balance Forex Losses	-	-	-	-	-
11.	Total (9+10)	300.06	82.92	-	3.46	386.43
12.	Add : Incidental Income	6.48	1.75			8.23
13.	Total excluding incidental income (11+12)	306.54	84.67	-	3.46	394.66

Table 60: Operating expenditure for FY2020 as per HIAL's submission

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
As per HIAL's submission (FY2020)						
1.	Payroll Related Expenses	24.54	4.15	86.43	4.04	119.17
a)	Contribution to Provident fund and other funds	2.14	0.44	7.34	0.27	10.18
b)	Salaries and Wages	22.43	3.66	73.79	3.77	103.65
c)	Staff welfare expenses	-0.03	0.05	5.31	0.00	5.33
2.	Administration & General Expenses	16.07	6.70	174.58	1.28	198.62
a)	Lease Rent to GoT	2.73	0.00	0.00	1.03	3.76
b)	Rates and Taxes	0.00	0.00	6.63	0.00	6.63
c)	Security Charges	0.58	0.40	22.27	0.00	23.25
d)	General Administrative Expenses	12.68	5.89	97.96	0.25	116.78
i.	Rent - Others	-0.06	0.00	3.92	0.00	3.87
ii.	Advertisement & Business Promotion	1.75	0.82	4.92	0.00	7.49
iii.	Legal and Professional Charges	3.00	4.54	25.16	0.00	32.69
iv.	Management Fees	0.00	0.00	32.05	0.00	32.05
v.	Assets written off	0.81	0.00	0.00	0.00	0.81

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
vi.	Communication Expenses	3.81	0.02	0.62	0.00	4.45
vii.	Directors' Sitting Fees	0.00	0.00	0.23	0.00	0.23
viii.	Loss on exchange fluctuation	0.31	0.00	0.01	0.00	0.33
ix.	Loss on sale / discarding of assets	0.00	0.00	0.00	0.00	0.00
x.	Miscellaneous Expenses	0.89	0.08	2.51	0.00	3.49
xi.	Office Maintenance	0.04	0.00	0.47	0.02	0.53
xii.	Payment to auditor	0.00	0.00	0.60	0.00	0.60
xiii.	Printing and Stationery	0.15	0.01	0.42	0.00	0.58
xiv.	Provision for bad and doubtful debts	0.00	0.15	0.00	0.00	0.15
xv.	Training charges & Recruitment charges	0.13	0.02	2.50	0.00	2.65
xvi.	Travelling and conveyance	1.86	0.25	24.47	0.22	26.80
xvii.	Provision for Diminution of value in investment	0.00	0.00	0.05	0.00	0.05
e)	Bad debts written off	0.00	0.41	0.00	0.00	0.41
f)	CSR & Donations	0.08	0.00	10.52	0.00	10.59
g)	Bank Charges	0.00	0.00	37.20	0.00	37.20
3.	Operating Expenditure	114.06	31.15	25.96	0.71	171.88
a)	Utilities	18.40	0.31	0.00	0.00	18.71
b)	Insurance	0.00	0.00	2.78	0.00	2.78
c)	Repairs and Maintenance	39.46	2.09	14.44	0.28	56.27
d)	Stores and Spares	6.25	0.37	0.51	0.02	7.16
e)	Housekeeping Charges	13.53	2.31	1.24	0.41	17.49
f)	Operating & Maintenance Expenses	1.21	5.28	0.96	0.00	7.45
i.	Bus Hire Charges	0.00	0.00	0.89	0.00	0.89
ii.	Health and safety expenses	0.50	0.01	0.06	0.00	0.57
iii.	Operating and maintenance expenses	0.00	4.55	0.01	0.00	4.56
iv.	Operator fee	0.00	0.72	0.00	0.00	0.72
v.	Collection Charges	0.71	0.00	0.00	0.00	0.71
g)	Manpower Outsourcing	35.21	2.50	6.02	0.00	43.73
h)	Fuel Farm O&M Expenses	0.00	18.29	0.00	0.00	18.29

S.no	Particulars (in Rs Crore)	Aero	Non-Aero	Common	Non-Airport	Total
4.	Total (1+2+3)	154.67	41.99	286.97	6.03	489.67
5.	Less: Incidental Income	0.22	0.00	8.66	0.00	8.88
6.	Total (adjusted for incidental income) (4-5)	154.45	41.99	278.31	6.03	480.79
7.	One time refinancing cost	-	-	4.52	-	4.52
8.	Total (adjusted for incidental income and one time refinancing cost) (6-7)	154.45	41.99	273.79	6.03	476.27
9.	After apportionment of common into aero & non-aero	374.55	95.66	-	6.03	476.25
10.	Balance Forex Losses	-	-	-	-	-
11.	Total (9+10)	374.55	95.66	-	6.03	476.25
12.	Add : Incidental Income	7.03	1.85			8.88
13.	Total excluding incidental income (11+12)	381.58	97.51	-	6.03	485.13

Table 61: Operating expenditure for FY2021 as per HIAL's submission

S.no	Particulars	Aero	Non-Aero	Common	Non-Airport	Total
As per HIAL's submission (FY2021)						
1.	Payroll Related Expenses	23.66	5.74	81.94	0.00	111.34
a)	Contribution to Provident fund and other funds	1.96	0.43	5.16	0.00	7.55
b)	Salaries and Wages	21.69	5.32	71.37	0.00	98.39
c)	Staff welfare expenses	0.01	-0.01	5.40	0.00	5.40
2.	Administration & General Expenses	10.25	2.13	115.00	1.10	128.49
a)	Lease Rent to GoT	2.88	0.00	0.00	1.08	3.96
b)	Rates and Taxes	0.15	0.00	5.31	0.00	5.46
c)	Security Charges	0.81	0.03	16.48	0.00	17.32
d)	General Administrative Expenses	6.19	2.09	64.18	0.02	72.48
i.	Rent-Others	0.09	0.00	3.93	0.00	4.02
ii.	Advertising and business promotion	1.07	0.75	1.44	0.00	3.26
iii.	Legal and professional fees	1.08	1.20	11.28	0.00	13.57
iv.	Management fees	0.00	0.00	25.03	0.00	25.03
v.	Travelling and conveyance	0.96	0.02	17.01	0.01	18.00

S.no	Particulars	Aero	Non-Aero	Common	Non-Airport	Total
As per HIAL's submission (FY2021)						
vi.	<i>Training & Recruitment charges</i>	0.01	0.00	0.62	0.00	0.63
vii.	<i>Communication Expenses</i>	1.67	0.02	1.24	0.01	2.93
viii.	<i>Office maintenance</i>	0.03	0.00	0.49	0.00	0.52
ix.	<i>Directors' Sitting Fees</i>	0.00	0.00	0.21	0.00	0.21
x.	<i>Loss on sale / discarding of assets</i>	0.35	0.00	0.00	0.00	0.35
xi.	<i>Payment to auditor</i>	0.00	0.00	0.56	0.00	0.56
xii.	<i>Printing and Stationery</i>	0.13	0.00	0.09	0.00	0.22
xiii.	<i>Miscellaneous Expenses</i>	0.80	0.10	2.29	0.00	3.18
e)	Bad debts written off	0.20	0.00	0.00	0.00	0.20
f)	CSR & Donations	0.02	0.00	15.97	0.00	16.00
g)	Bank Charges	0.00	0.00	13.06	0.00	13.06
3.	Operating Expenditure	95.88	19.34	26.10	0.58	141.90
a)	Utilities	10.97	0.13	0.00	0.00	11.10
b)	Insurance	0.00	0.00	4.83	0.00	4.83
c)	Repairs and Maintenance	37.87	1.55	13.42	0.18	53.02
d)	Stores and Spares	2.96	0.25	0.62	0.01	3.84
e)	Housekeeping Charges	9.64	1.64	0.36	0.40	12.04
f)	Operating & Maintenance Expenses					0.00
i.	<i>Bus Hire Charges</i>	0.00	0.00	0.30	0.00	0.30
ii.	<i>Health and safety expenses</i>	0.85	0.04	0.01	0.00	0.91
iii.	<i>COVID 19 Expenses</i>	1.33	0.11	1.22	0.00	2.66
iv.	<i>Operating and maintenance expenses</i>	0.38	2.30	0.00	0.00	2.68
v.	<i>Operator fee</i>	0.00	0.36	0.00	0.00	0.36
vi.	<i>Collection Charges</i>	0.00	0.00	0.00	0.00	0.00
g)	Manpower Outsourcing	31.88	0.34	5.32	0.00	37.53
h)	Fuel Farm O&M Expenses	0.00	12.62	0.00	0.00	12.62
4.	Total (1+2+3)	129.79	27.21	223.04	1.69	381.72
5.	Less: Incidental Income	0.64		5.30		5.94
6.	Total (adjusted for incidental income) (4-5)	129.15	27.21	217.74	1.69	375.78
7.	One time refinancing cost	0.00	0.00	4.91	0.00	4.91
8.	Total (adjusted for incidental income and one time refinancing cost) (6-7)	129.15	27.21	212.83	1.69	370.87
9.	After apportionment of common into aero & non-aero	306.87	62.31	0.00	1.69	370.87

S.no	Particulars	Aero	Non-Aero	Common	Non-Airport	Total
As per HIAL's submission (FY2021)						
10.	Balance Forex Losses	0.00	0.00	0.00	0.00	0.00
11.	Total (9+10)	306.87	62.31	0.00	1.69	370.87
12.	Add : Incidental Income	5.02	0.92			5.94
13.	Total excluding incidental income (11+12)	311.89	63.24	0.00	1.69	376.81

10.2 Auditor Certificate (Attached in next page)

Report in connection with Agreed-upon procedures related to Statement of allocation of Employee Benefit Expenses, Operational and Administrative Expenses into Aeronautical, Non-Aeronautical, Common and Non-Airport

We, M/s K.S. Rao & Co., joint statutory auditors of M/s. GMR Hyderabad International Airport Limited (the Company) having its registered office at GMR Aero towers, Rajiv Gandhi International Airport, Shamshabad, Hyderabad - 500108 (the Company) have performed the agreed upon procedures vide Engagement Letter dated June 16, 2020 with respect to Statement of allocation of Employee Benefit Expenses, Operational and Administrative Expenses into Aeronautical; Non-Aeronautical; Common and Non Airport Expenses for the period from April 01, 2016 to March 31, 2020. Our engagement was undertaken in accordance with the Standard on Related Service (SRS) 4400 on "Engagements to Perform Agreed-upon Procedures regarding Financial Information", issued by the Institute of Chartered Accountants of India. The procedures were performed solely to assist you in evaluating the accuracy of Statement of the allocation of Employee Benefit Expenses, Operational and Administrative Expenses into Aeronautical; Non-Aeronautical; Common and Non-Airport.

The agreed upon procedures to be performed on the accuracy of the Statement of allocation of Employee Benefit Expenses, Operational and Administrative Expenses into Aeronautical; Non-Aeronautical; Common and Non Airport Expenses for the years ended March 31, 2017; March 31, 2018; March 31, 2019 and March 31, 2020 are as follows:

- a. Obtain the Cost Centre data generated from the company's ERP and verify whether the data is in agreement to the expenditure breakup provided in the Special Purpose Standalone Financial Statements for the years ended March 31, 2017; March 31, 2018; March 31, 2019 and March 31, 2020 which are prepared in accordance with accounting principles generally accepted in India, including the Companies (Accounting Standards) Rules, 2006 as emended and specified under Section 133 of the Companies Act, 2013 read with Companies (Accounting Standard) Rules 2014 (referred as "IGAAP Financial Statements").
- b. Verify the classification of Cost Centres into Aeronautical; Non-Aeronautical; Common and Non-Airport on the basis of guidelines as per concept document enumerated in Annexure - I.
- c. Verify the summary of expenditure allocated into Aeronautical; Non-Aeronautical; Common and Non Airport Expenses for the period from April 01, 2016 to March 31, 2020 in Annexure II, III, IV, V with IGAAP Financial Statements for the years ended on March 31, 2017; March 31, 2018; March 31, 2019 and March 31 2020 respectively.
- d. Verify the summary of expenditure disclosed separately in the Annexure II, III, IV and IV for Cargo, Fuel Farm, Ground Handling including Ground Power Unit and Cargo satellite Building with the cost centre data obtained from ERP and IGAAP Financial Statements.

We report our finding below:

- i. With respect to item (a), we found that the cost-centre data generated from ERP for classification of expenditure is in agreement to the IGAAP Financial Statements;
- ii. With respect to item (b), we found that the classification of the Cost Centre is in accordance with the concept document enumerated in Annexure – I, upon verification of the nature of transactions in the cost-centre on a test check basis and using the concept of Materiality for the allocation;
- iii. With respect to item (c), we found that the Annexures II, III, IV and V is in agreement with the allocation in accordance with the item (b) and in agreement to the data obtained in item (a) and IGAAP Financial Statements.
- iv. With respect to item (d), we found that the expenditure separately disclosed in Annexure II, III, IV and V is in agreement with item (a) and IGAAP Financial statements.

Since the procedures performed do not constitute either an audit or a review made in accordance with the generally accepted auditing standards in India, we do not express any assurance on the allocation of the Statement of Employee Benefit Expenses, Operational and Administrative Expenses into Aeronautical; Non-Aeronautical; Common and Non Airport for the years ended March 31, 2017; March 31, 2018; March 31, 2019 and March 31, 2020.

Our report is solely issued on the request of the Company for its submission to the Airports Economic Regulatory Authority of India (AERA) and is not to be used for any other purpose or to be distributed to any other parties.

For K.S. Rao & Co.,
Chartered Accountants
ICAI Firm Registration no. 003109S

Hitesh Kumar P
Partner
Membership No. 233734
UDIN No.:20233734AAAAEI1656

Place: Bengaluru
Date: July 22, 2020

Concept document on Basis of Allocation

The methodology adopted for allocation of the Employee Benefit Expenses, Operational and Administrative Expenses were in line with the previous submissions by GHIAL, to the Airport Economic Regulatory Authority of India (AERA) for determination of Tariff. The expenditure is allocated based on the cost centres of the expenditure.

Below is the brief of the procedures applied for allocation of the expenses:

Aeronautical expenditure

The expenditure in cost centres which are necessary or required for the performance of Aeronautical Services at the Airport and all other expenditure that the company may incur in accordance with the written direction of GOI for or in relation to provision of any of the reserved activities is considered as Aeronautical expenditure. Below are cost centre departments which are considered as Aero:

Airside operations, AOCC, ARFF, COO Office	Service Quality
Terminal Operations	Technical Services
Information Technology	Township
Landscaping	Without Cost Centre
Airline marketing and Business Development	
Protocol	
Safety Environment & Compliances	

Non Aeronautical expenditure

The expenditure in cost centres necessary for the performance of Non Aeronautical Services at the Airport are required to be considered as Non-Aeronautical expenditure. Below are cost centre departments which are considered as Non-Aero:

Cargo
Aero related (Fuel Farm and Ground Handling)
Commercial
Travel Services
Retail
Chief Commercial Office

Common expenditure

The cost centres which are necessary for both the Aeronautical Services and Non-Aeronautical Services are considered are common expenditure. Below are cost centre departments which are considered as common:

Admin, Facility Management	Project Management
CFL (Customer Facilities & Logistics)	Knowledge Management
HR	Corporate Communication
Finance	CEO's office, MD's Office,
Strategic Planning	Non Executive Director office
Legal	Contracts and Procurement
Security	Corporate relations
Transportation	CSR

Non-Airport expenditure

Expenditure related to Commercial Property development, Cargo Satellite Building and Other non airport departments are treated as Non Airport expenditure.

Other points:

- Collection charges other than IATA charges are netted off from Aeronautical Revenue.
- Rent is allocated in the ratio of airport and non- airport land as per master plan. Out of total land leased area of 5500 acres, 4000 acres has been identified for Airport purpose and balance 1500 acres has been allocated for non -airport activities.
- Incidental income is the income recovered as rent from the available space at the New Office Building, Site Office Building and Employee Township pending its utilization for common airport activities is netted off from the expenditure.
- Company has not maintained separate cost center for expenses relating to Ground Power Unit and Cargo Satellite Building (CSB) for the period from April 1, 2016 to March 31, 2020 and therefore these expenses are separately confirmed by the management for allocation purpose.

GMR Hyderabad International Airport Limited
FY 2016-17

Annexure -II

Statement of Allocation of Expenses

(₹ in crores)

Particulars	Aero	Non Aero	Common	Non Airport	Total
Payroll Related Expenses	18.49	4.04	36.56	1.01	60.10
Administration & General Expenses					
Advertisement & Business Promotion	1.15	0.57	1.73	0.08	3.53
Rent	2.38	-	1.14	0.91	4.43
Rates and Taxes	-	-	5.68	-	5.68
Security Charges	0.25	0.24	10.50	-	10.99
Legal and Professional Charges	0.99	0.23	7.18	-	8.40
Management Fees	-	-	22.58	-	22.58
General Administrative Expenses	5.34	0.31	12.87	0.05	18.57
CSR & Donations	0.02	-	2.44	-	2.46
Bad Debts Written Off	0.04	-	-	-	0.04
Bank Charges	-	-	15.25	-	15.25
Operating Expenditure					
Electricity & Water charges	16.60	0.89	-	-	17.49
Insurance	-	-	1.85	-	1.85
Repairs and Maintenance	30.88	1.62	4.28	0.16	36.94
Stores and Spares	10.50	0.62	0.29	0.06	11.47
Housekeeping Expenses	9.45	1.61	0.05	0.26	11.37
Operating & Maintenance Expenses	0.24	2.52	0.48	-	3.24
Manpower Outsourcing	19.89	1.26	1.64	-	22.79
Fuel Farm operator fee, O&M Expenses	-	11.36	-	-	11.36
Collection Charges (IATA)	0.68	-	-	-	0.68
Total	116.90	25.27	124.52	2.53	269.22
Less: Incidental Income from NOB, SO and Township	0.34	-	3.67	-	4.01
Grand Total	116.56	25.27	120.85	2.53	265.21

Total Allocated expenses **269.22**

Other expenditure not considered above

Concession fee 46.20

Depreciation & amortization 203.81

Finance costs 181.72

Collection charges except IATA charges 3.52

Total expense as per Financials **704.47**

* 0.00 Represents less than 50,000

#CSB represents Cargo Satellite Building, GH represents Ground Handling and Ground Power Unit

CGF Expenses

(₹ in crores)

Cargo	GH#	Fuel Farm	CSB#	Total
1.85	0.17	-	-	2.02
0.04	0.00	-	-	0.04
-	-	-	-	-
0.00	-	-	-	0.00
-	-	-	-	-
0.15	-	0.02	-	0.17
-	-	-	-	-
0.17	0.01	0.00	-	0.18
-	-	-	-	-
-	-	-	-	-
0.00	-	-	-	0.00
-	0.89	-	-	0.89
-	-	-	-	-
0.01	0.33	0.28	0.16	0.78
-	0.26	-	0.06	0.31
-	-	-	0.26	0.26
-	-	-	-	-
-	-	11.36	-	11.36
-	-	-	-	-
2.22	1.65	11.67	0.47	16.01
-	-	-	-	-
2.22	1.65	11.67	0.47	16.01

GMR Hyderabad International Airport Limited
FY 2017-18

Annexure -III

Statement of Allocation of Expenses

(₹ in crores)

Particulars	Aero	Non Aero	Common	Non Airport	Total
Payroll Related Expenses	21.25	4.48	45.46	1.02	72.21
Administration & General Expenses					
Advertisement & Business Promotion	1.72	0.98	5.89	0.28	8.87
Rent	2.48	-	2.10	0.93	5.51
Rates and Taxes	-	-	5.93	-	5.93
Security Charges	0.37	1.25	15.36	-	16.98
Legal and Professional Charges	3.80	0.94	11.24	-	15.98
Management Fee	-	-	31.52	-	31.52
General Administrative Expenses	5.71	0.54	15.63	0.15	22.03
CSR & Donations	0.09	-	6.59	-	6.68
Bank Charges	-	-	19.04	-	19.04
Provision for bad and doubtful debts	-	-	0.40	-	0.40
Operating Expenditure					
Electricity & Water charges	15.69	0.64	-	-	16.33
Insurance	-	-	2.44	-	2.44
Repairs and Maintenance	35.33	1.58	5.65	0.18	42.74
Stores and Spares	5.09	0.50	0.26	0.02	5.87
Housekeeping	9.99	2.12	0.06	0.29	12.46
Operating & Maintenance Expense	0.11	2.87	0.51	-	3.49
Manpower Outsourcing	26.55	1.20	0.20	-	27.95
Fuel Farm operator fee, O&M Expenses	-	12.67	-	-	12.67
Collection Charges (IATA)	0.66	-	-	-	0.66
Total	128.84	29.77	168.28	2.87	329.76
Less: Incidental Income from NOB, SO and Township	0.54	-	5.67	-	6.21
Grand Total	128.30	29.77	162.61	2.87	323.55

Total Allocated expenses **329.76**

Other expenditure not considered above

Concession fee 52.95

Depreciation & amortization 190.12

Finance costs 168.00

Collection charges except IATA charges 4.29

Total expense as per Financials **745.12**

* 0.00 Represents less than 50,000

#CSB represents Cargo Satellite Building, GH represents Ground Handling and Ground Power Unit

CGF Expenses

(₹ in crores)

Cargo	GH#	Fuel Farm	CSB#	Total
2.19	0.16	-	-	2.35
0.01	0.01	-	-	0.01
-	-	-	-	-
0.05	-	-	-	0.05
-	-	-	-	-
0.00	-	0.04	-	0.05
-	-	-	-	-
0.22	0.02	-	-	0.24
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	0.64	-	-	0.64
-	-	-	-	-
0.01	0.00	0.15	0.18	0.34
-	0.41	-	0.02	0.43
-	-	-	0.29	0.29
-	-	-	-	-
-	0.36	-	-	0.36
-	-	12.67	-	12.67
-	-	-	-	-
2.47	1.60	12.86	0.49	17.42
-	-	-	-	-
2.47	1.60	12.86	0.49	17.42

GMR Hyderabad International Airport Limited
FY 2018-19

Annexure -IV

Statement of Allocation of Expenses

(₹ in crores)

Particulars	Aero	Non Aero	Common	Non Airport	Total
Payroll Related Expenses	25.62	6.21	67.88	1.83	101.54
Administration & General Expenses					
Advertisement & Business Promotion	1.45	0.33	3.22	-	5.00
Rent	2.61	-	3.11	0.98	6.70
Rates and Taxes	-	-	5.87	-	5.87
Security Charges	0.48	0.65	17.23	-	18.36
Legal and Professional Charges	1.40	0.65	9.31	0.01	11.37
Management Fee	-	-	29.96	-	29.96
General Administrative Expenses	6.15	4.48	27.49	0.16	38.28
CSR & Donations	0.10	-	33.77	-	33.87
Bank Charges	-	-	6.99	-	6.99
Provision for bad and doubtful debts	-	0.52	-	-	0.52
Operating Expenditure					
Electricity & Water charges	18.99	0.36	-	-	19.35
Insurance	-	-	2.28	-	2.28
Repairs and Maintenance	35.91	2.12	8.66	0.18	46.87
Stores and Spares	5.13	0.48	0.16	0.01	5.78
Housekeeping Expenses	11.07	2.20	0.45	0.29	14.01
Operating & Maintenance Expenses	0.21	3.73	0.72	-	4.66
Manpower Outsourcing	27.32	1.95	2.57	-	31.84
Fuel Farm operator fee, O&M Expenses	-	15.01	-	-	15.01
Collection Charges (IATA)	0.70	-	-	-	0.70
Total	137.14	38.69	219.67	3.46	398.96
Less: Incidental Income from NOB, SO and Township	0.29	-	7.94	-	8.23
Grand Total	136.85	38.69	211.73	3.46	390.73

Total Allocated expenses **398.96**

Other expenditure not considered above

Concession fee 61.53

Depreciation & amortization 136.56

Finance costs 161.17

Collection charges except IATA charges 6.54

Total expense as per Financials **764.76**

* 0.00 Represents less than 50,000

#CSB represents Cargo Satellite Building, GH represents Ground Handling and Ground Power Unit

CGF Expenses

(₹ in crores)

Cargo	GH#	Fuel Farm	CSB#	Total
2.32	0.02	0.14	-	2.48
0.00	0.00	-	-	0.00
-	-	-	-	-
0.00	-	-	-	0.00
-	-	-	-	-
-	-	-	-	-
0.20	0.12	0.00	-	0.32
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	0.36	-	-	0.36
-	-	-	-	-
0.10	0.39	0.02	0.18	0.69
-	0.21	-	0.01	0.22
-	-	-	0.29	0.29
-	-	-	-	-
-	-	-	-	-
-	-	15.01	-	15.01
-	-	-	-	-
2.61	1.10	15.17	0.48	19.36
-	-	-	-	-
2.61	1.10	15.17	0.48	19.36

GMR Hyderabad International Airport Limited
FY 2019-20

Annexure -V

Statement of Allocation of Expenses

(₹ in crores)

Particulars	Aero	Non Aero	Common	Non Airport	Total
Payroll Related Expenses	24.54	4.15	86.42	4.04	119.15
Administration & General Expenses					
Advertisement & Business Promotion	1.75	0.82	4.92	-	7.49
Rent	2.67	-	3.93	1.03	7.63
Rates and Taxes	-	-	6.63	-	6.63
Security Charges	0.58	0.40	22.27	-	23.25
Legal and Professional Charges	3.00	4.54	25.15	-	32.69
Management Fees	-	-	32.05	-	32.05
General Administrative Expenses	8.00	0.53	31.90	0.25	40.68
CSR & Donations	0.08	-	10.51	-	10.59
Bank Charges	-	-	37.20	-	37.20
Bad debts written off	-	0.41	-	-	0.41
Operating Expenditure					
Electricity & Water charges	18.39	0.31	-	-	18.70
Insurance	-	-	2.78	-	2.78
Repairs and Maintenance	39.46	2.09	14.44	0.28	56.27
Stores and Spares	6.25	0.37	0.52	0.02	7.16
Housekeeping Expenses	13.53	2.31	1.24	0.41	17.49
Operating & Maintenance Expenses	0.50	5.28	0.96	-	6.74
Manpower Outsourcing	35.21	2.50	6.02	-	43.73
Fuel Farm operator fee, O&M Expenses	-	18.29	-	-	18.29
Collection Charges (IATA)	0.71	-	-	-	0.71
Total	154.67	42.00	286.94	6.03	489.64
Less: Incidental Income from NOB, SO and Township	0.22	-	8.66	-	8.88
Grand Total**	154.45	42.00	278.28	6.03	480.76

Total Allocated expenses

489.64

Other expenditure not considered above

Concession fee	64.95
Depreciation & amortization	165.36
Finance costs	183.51
Collection charges except IATA charges	5.94
GHIAL PSF advance written off	15.08
Total expense as per Financials	924.48

* 0.00 Represents less than 50,000

** The above expenditure doesn't include GHIAL-PSF advances written off amounting to Rs. 15.08 Crores.

#CSB represents Cargo Satellite Building, GH represents Ground Handling and Ground Power Unit

CGF Expenses

(₹ in crores)

Cargo	GH#	Fuel Farm	CSB#	Total
1.26	0.16	0.08	-	1.50
-	-	-	-	-
-	-	-	-	-
0.00	-	-	-	0.00
-	-	0.04	-	0.04
2.36	-	0.15	-	2.51
-	-	-	-	-
0.07	0.08	0.01	-	0.16
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	0.31	-	-	0.31
-	-	-	-	-
-	-	0.00	0.26	0.26
0.00	0.16	-	0.02	0.18
-	-	-	0.41	0.41
-	-	-	-	-
-	0.40	0.00	-	0.40
-	-	18.29	-	18.29
-	-	-	-	-
3.69	1.11	18.57	0.69	24.07
-	-	-	-	-
3.69	1.11	18.57	0.69	24.07



Report in connection with Agreed-upon procedures related to Statement of allocation of Employee Benefit Expenses, Operational and Administrative Expenses into Aeronautical, Non-Aeronautical, Common and Non-Airport

We, M/s K.S. Rao & Co., joint statutory auditors of M/s. GMR Hyderabad International Airport Limited (the Company) having its registered office at GMR Aero towers, Rajiv Gandhi International Airport, Shamshabad, Hyderabad - 500108 (the Company) have performed the agreed upon procedures vide Engagement Letter dated May 12, 2021 with respect to Statement of allocation of Employee Benefit Expenses, Operational and Administrative Expenses into Aeronautical; Non-Aeronautical; Common and Non Airport expenses for the period from April 01, 2020 to March 31, 2021. Our engagement was undertaken in accordance with the Standard on Related Service (SRS) 4400 on "Engagements to Perform Agreed-upon Procedures regarding Financial Information", issued by the Institute of Chartered Accountants of India. The procedures were performed solely to assist the Company in evaluating the accuracy of Statement of the allocation of Employee Benefit Expenses, Operational and Administrative Expenses into Aeronautical; Non-Aeronautical; Common and Non-Airport.

The agreed upon procedures to be performed on the accuracy of the Statement of allocation of Employee Benefit Expenses, Operational and Administrative Expenses into Aeronautical; Non-Aeronautical; Common and Non Airport expenses for the period April 01, 2020 to March 31, 2021 are as follows:

- a. Obtain the Cost Centre data generated from the company's ERP and verify whether the data is in agreement to the expenditure breakup provided in the Special Purpose Standalone Financial Statements for the year ended March 31, 2021 which are prepared in accordance with accounting principles generally accepted in India, including the Companies (Accounting Standards) Rules, 2006 as amended and specified under Section 133 of the Companies Act, 2013 read with Companies (Accounting Standard) Rules 2014 (referred as "IGAAP Financial Statements").
- b. Verify the classification of Cost Centres into Aeronautical; Non-Aeronautical; Common and Non-Airport on the basis of guidelines as per concept document enumerated in Annexure - I.
- c. Verify the summary of expenditure allocated into Aeronautical; Non-Aeronautical; Common and Non Airport expenses for the period April 01, 2020 to March 31, 2021 in Annexure II with IGAAP Financial Statements.
- d. Verify the summary of expenditure disclosed separately in the Annexure II for Cargo, Fuel Farm, Ground Handling including Ground Power Unit and Cargo satellite Building with the cost centre data obtained from ERP and IGAAP Financial Statements.



We report our finding below:

- i. With respect to item (a), we found that the cost-centre data generated from ERP for classification of expenditure is in agreement to the IGAAP Financial Statements.
- ii. With respect to item (b), we found that the classification of the Cost Centre is in accordance with the concept document enumerated in Annexure – I upon verification of the nature of transactions in the cost-centre on a test check basis and using the concept of Materiality for the allocation.
- iii. With respect to item (c), we found that the Annexures II is in agreement with the allocation in accordance with the item (b) and in agreement to the data obtained in item (a) and IGAAP Financial Statements.
- iv. With respect to item (d), we found that the expenditure separately disclosed in Annexure II, is in agreement with item (a) and IGAAP Financial statements.

Since the procedures performed do not constitute either an audit or a review made in accordance with the generally accepted auditing standards in India, we do not express any assurance on the allocation of the Statement of Employee Benefit Expenses, Operational and Administrative Expenses into Aeronautical; Non-Aeronautical; Common and Non Airport for the period from April 01, 2020 to March 31, 2021.

Our report is solely issued on the request of the Company for its submission to the Airports Economic Regulatory Authority of India (AERA) and is not to be used for any other purpose or to be distributed to any other parties.

For K.S. Rao & Co.,
Chartered Accountants
ICAI Firm Registration no. 003109S

Hitesh Kumar P

Hitesh Kumar P
Partner
Membership No. 233734
UDIN No.: 21233734AAAAIL4260

Place: Bengaluru
Date: May 18, 2021



GMR Hyderabad International Airport Limited

Annexure I

Concept document on Basis of Allocation

The methodology adopted for allocation of the Employee Benefit Expenses, Operational and Administrative Expenses were in line with the previous submissions by GHIAL, to the Airport Economic Regulatory Authority of India (AERA) for determination of Tariff. The expenditure is allocated based on the cost centres of the expenditure.

Below is the brief of the procedures applied for allocation of the expenses:

Aeronautical expenditure

The expenditure in cost centres which are necessary or required for the performance of Aeronautical Services at the Airport and all other expenditure that the company may incur in accordance with the written direction of GOI for or in relation to provision of any of the reserved activities is considered as Aeronautical expenditure. Below are cost centre departments which are considered as Aero:

Airside operations, AOCC, ARFF, COO Office	Service Quality
Terminal Operations	Technical Services
Information Technology (Including ICT related expenditure for CUTE, CUSS and BRS)	Township
Landscaping	Without Cost Centre
Airline marketing and Business Development	
Protocol	
Safety Environment & Compliances	

Non Aeronautical expenditure

The expenditure in cost centres necessary for the performance of Non Aeronautical Services at the Airport are required to be considered as Non-Aeronautical expenditure. Below are cost centre departments which are considered as Non-Aero:

Cargo
Aero related (Fuel Farm and Ground Handling)
Commercial
Travel Services
Retail
Chief Commercial Office

Common expenditure

The cost centres which are necessary for both the Aeronautical Services and Non-Aeronautical Services are considered are common expenditure. Below are cost centre departments which are considered as common:

Admin, Facility Management	Project Management
CFL (Customer Facilities & Logistics)	Knowledge Management
HR	Corporate Communication
Finance	CEO's office, MD's Office,
Strategic Planning	Non Executive Director office
Legal	Contracts and Procurement
Security	Corporate relations
Transportation	CSR

Non-Airport expenditure

Expenditure related to Commercial Property development, Cargo Satellite Building and Other non airport departments are treated as Non Airport expenditure.

Other points:

- Collection charges other than IATA charges are netted off from Aeronautical Revenue.
- Rent is allocated in the ratio of airport and non- airport land as per master plan. Out of total land leased area of 5500 acres, 4000 acres has been identified for Airport purpose and balance 1500 acres has been allocated for non -airport activities.
- Incidental income is the income recovered as rent from the available space at the New Office Building, Site Office Building and Employee Township pending its utilization for common airport activities is netted off from the expenditure.
- Company has not maintained separate cost center for expenses relating to Ground Power Unit and Cargo Satellite Building (CSB) and therefore these expenses are separately confirmed by the management for allocation purpose.



GMR Hyderabad International Airport Limited

Annexure II

Statement of Allocation of Expenses for the period April 01, 2020 to March 31, 2021

(₹ in crores)

Particulars	Aero	Non Aero	Common	Non Airport	Total
Payroll Related Expenses	23.66	5.74	81.94	-	111.34
Administration & General Expenses					
Advertisement & Business Promotion	1.07	0.75	1.44	-	3.26
Rent	2.97	-	3.93	1.08	7.98
Rates and Taxes	0.15	-	5.31	-	5.46
Security Charges	0.81	0.03	16.48	-	17.32
Legal and Professional Charges	1.08	1.20	11.29	-	13.57
Management Fees	-	-	25.03	-	25.03
General Administrative Expenses	3.95	0.15	22.50	-	26.60
Bad debts	0.20	-	-	-	0.20
Donations	-	-	5.00	-	5.00
Community Development	0.02	-	10.98	-	11.00
Bank Charges*	-	-	13.06	-	13.06
Operating Expenditure					
Electricity & Water charges	10.97	0.13	-	-	11.10
Insurance	-	-	4.83	-	4.83
Repairs and Maintenance	37.85	1.55	13.42	0.20	53.02
Stores and Spares	2.96	0.25	0.62	0.01	3.84
Housekeeping Expenses	9.64	1.64	0.37	0.40	12.05
Operating & Maintenance Expenses	2.57	2.81	1.54	-	6.92
Manpower Outsourcing	31.88	0.34	5.32	0.00	37.53
Fuel Farm operator fee, O&M Expenses	-	12.62	-	-	12.62
Total	129.78	27.21	223.06	1.69	381.73
Less: Incidental Income from NOB, SO, Township	0.64	-	5.30	-	5.94
Grand Total	129.14	27.21	217.76	1.69	375.79

CGF Expenses

(₹ in Crores)

Cargo	GH#	Fuel	CSB#	Total
1.90	0.17	0.31	-	2.38
0.02	-	0.03	-	0.05
-	-	-	-	-
-	-	-	-	-
-	-	0.03	-	0.03
-	-	-	-	-
-	-	-	-	-
0.01	-	0.04	-	0.05
-	-	-	-	-
-	-	-	-	-
-	0.13	-	-	0.13
-	-	-	-	-
-	0.42	0.01	0.20	0.63
-	0.08	-	0.01	0.09
-	-	-	0.40	0.40
-	-	-	-	-
-	-	-	-	-
-	-	12.62	-	12.62
1.93	0.80	13.04	0.61	16.38

Total Allocated expenses 381.73

Other expenditure not considered above

Concession fee	22.54
Depreciation & amortization	184.45
Finance costs	199.11
Collection charges except IATA charges	1.08
Total expense as per Financials	788.91

#CSB represents Cargo Satellite Building, GH represents Ground Handling and Ground Power Unit.

*Bank Charges include other borrowing cost and interest on working capital loan.



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**Study on the Determinants of Cost of Capital of
Hyderabad International Airport Limited
(HIAL)**

Dec 2020



भारतीय प्रबंध संस्थान बेंगलूर
INDIAN INSTITUTE OF MANAGEMENT
BANGALORE

Study on the Determinants of Cost of Capital of Hyderabad International Airport Limited (HIAL)

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Executive Summary

This report provides an estimate of the Cost of Equity (CoE) for Hyderabad International Airport Ltd (HIAL). A benchmark set of “comparable” international airports are used to estimate the systematic risk exposure of HIAL aero assets under a target gearing ratio, as described in the Capital Asset Pricing Model (CAPM). The Cost of Equity computation also accounts for HIAL specific attributes such as revenue till structure, ownership structure and scale of operations by using a proximity score weighted approach, which factors the closeness of HIAL to the set of “comparable” airports. Based on a reasonable set of assumptions, the report provides the following estimates of Cost of Equity:

Variable (Col 1)	HIAL (Col 2)
Asset Beta based on Proximity Score Weights of comparable set	0.573552
Target gearing ratio (Debt/Debt + Equity)	48%
Target gearing ratio (Debt/Equity)	0.9231
Equity Betas	0.9442
Risk Free Rate	7.56%
Equity Risk Premium	8.06%
Cost of Equity	15.17%

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Chapter 1 – Introduction

The airport infrastructure sector has been undergoing a phased change during the past 15 years. The first Public Private Partnership (PPP) model of airport operations was implemented in Delhi, Mumbai, Bangalore and Hyderabad airports starting in 2004. While Delhi and Mumbai were brownfield projects, the other two were greenfield in nature. As with any infrastructure project, these projects involved high Capital Expenditure (CAPEX) and Operational Expenditure (OPEX) mobilization. To ensure viability of airport investment, it is standard practice to provide a reasonable return to investors by charging airport users an appropriate tariff.

The Airports Economic Regulatory Authority (AERA) was established in 2008 for fixing aero tariffs and User Development Fee (UDF) at different airports.¹ AERA uses the Capital Asset Pricing Model (CAPM) to determine the Cost of Equity (CoE) and hence the FRoR. As mandated by the Act, the tariffs are determined at a periodicity of 5 years. This report computes the CoE (and illustrates the process to compute FRoR) for the Hyderabad International Airport Ltd. (HIAL).

1.1. Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) has evolved and has been used effectively for some time now across industries the world over. Equation 1.1 depicts the CAPM²

$$R_E = R_f + \beta_E (R_M - R_f),$$

Equation 1.1 – CAPM

where

R_E = Expected return (and the company's cost of equity capital)

R_f = Risk-free rate.

$R_M - R_f$ = Equity Risk Premium (ERP).

¹ <http://aera.gov.in> as viewed on 30th Nov. 2020.

² While in our study here, we have used the CAPM model, there are also other models available for exploration. Some of these being, the Arbitrage Pricing Theory and other variants of the CAPM (e.g., Breeden's Consumption CAPM and Merton's ICAPM) are theoretically sophisticated models that are more general than the CAPM. However, for all practical purposes, the plain CAPM is by far the most widely accepted model used to estimate the cost of capital.

β_E = Equity beta.

Various methods are employed for determining R_f , R_M and β_E . **We use this CAPM equation (Equation 1.1) throughout this report for the computation of Cost of Equity.**

The NIPFP study³ commissioned by AERA around 2011 had argued and proposed a rate between 11.64% and 13.84% as the Cost of Equity. However, the NIPFP study is dated in the sense that Equity Risk Premiums are time varying and the information set as of 2011 (the time-period of the NIPFP study) differs from the current information set (as of 2018). As is evident from Eq. (1), the rate of return or CAPM rate depends on 3 inherent factors.

- a. Risk-free rate, R_f
- b. Equity Risk Premium (ERP), $R_M - R_f$
- c. Equity β_E

While it is relatively easy to determine R_f , the other two factors are difficult to estimate in the case of India. Some estimates of the long-term Equity Risk Premium (ERP), and hence, long-term expected returns (R_M) by Damodaran⁴ and others^{5,6} are available in literature. The equity β_E estimation can also yield a range of values depending on the assumptions employed.

Fair Rate of Return (FRoR)

The Fair Rate of Return (FRoR) is essentially the weighted average cost of capital evaluated at a normative debt to equity ratio. It reflects the cost of equity and the cost of debt and can be thought of as the return demanded by the providers of capital (debt and equity holders). Using an illustrative cost of debt (since cost of debt must be estimated annually using the latest information), we illustrate the computation of FRoR in Chapter 3 (section 3.3.5 and Equation 3.4).

³ "Estimating Cost of Capital for Private Airports in India", NIPFP, Dec 2011

⁴ <http://pages.stern.nyu.edu/~adamodar/> as seen on 10 Sep 2018

⁵ Dimson, Marsh and Staunton (DMS); Triumph of the Optimists: 101 Years of Global Investment Returns (Princeton University Press, 2002)

⁶ The Global Finance Data (GFD) from www.globalfinancialdata.com as viewed on 28 Feb 2020

1.2. Overview of Airport Sector

Traditionally, airports have been managed by governments the world-over with private participation limited to fuel farms, cargo handling, etc. However, more recently, with demanding passengers (looking for better quality infrastructure with contemporary amenities), private participation has become imperative. It has been observed from experience in other sectors (e.g., ports, roads, etc.) that this mode of operation maximizes efficiency. Also, the government gains monetarily by selling its stake. The British Airports Authority or BAA was the first airport to be publicly listed and traded in 1987.⁷ However, owing to high losses triggered by expansions and high operating costs, it finally delisted in 2006. However, other airports like Auckland, Sydney, Thailand (AoT), Malaysia (MAHB), etc. have consistently been successful.

While privatization brings in efficiency and a level of comfort and luxury to the end user, it also imposes a cost on them. The cost is mostly levied in the form of tariffs and fees by the private operator to recoup the CAPEX and OPEX incurred. In order to protect the interests of the end user, regulatory authorities all over the world cap the tariffs that can be levied. For this purpose, airports are classified as based on a “Till Model” as follows:⁸

- Single Till – All airport revenues (including aero and non-aero) are taken into consideration when determining the level of airport usage charges.
- Dual Till – Only aero revenues are taken into consideration when setting airport usage charges.
- Hybrid Till – Aero revenues along with a percentage of non-aero revenues are considered for setting airport usage charges.

Typically, aero revenues include landing and parking charges, aerobridge usage charges, UDF, fuel throughput charges, and cute counter charges. Non-aero revenues would be car park charges at airport premises, hotels and other business establishments, duty free shops, etc. Cargo may be aero or non-aero depending on the regulatory norms.

⁷ <https://www.forbes.com/global/2003/0609/043.html#46dc54645c4b> as viewed on 28 Feb 2020

⁸ *Mark Smith, Brian Pearce; IATA Economics Briefing N°6: Economic Regulation

The breakeven revenue for a sustainable airport operation is estimated using Equation 1.2.

$$ARR = PV(ARR_t) = \sum_{t=1}^n (ARR_t), \text{ where}$$
$$ARR_t = (FRoR \times RAB_t) + D_t + O_t + T_t - (f \times NAR_t),$$

Equation 1.2 – Breakeven Returns

where

ARR = Aggregate **Aero** Revenue Requirement for a given time period

PV = Present Value

t = Estimation Time period

n = Max(t) in the current control period

FRoR = Fair Rate of Return

RAB = Regulatory Asset Base for a given Till

D = Depreciation

O = Operations' Cost

T = Tax Liability

NAR = Non-Aero Revenues

f = fraction of Non-Aero Revenue subsidising aero revenue

= 0 for dual till;

= 1 for single till;

= fraction (0, 1) for hybrid till.

HIAL uses a hybrid till structure with 30% of non-aero revenues (*f*, in Equation 1.2) subsidizing Aggregate Revenue Requirement (ARR).

1.3. Project Scope and Overview

This study proposes to build on the previous experiences of AERA to determine an appropriate CAPM rate for the Cost of Equity (CoE) for Hyderabad International Airport Ltd. (HIAL) for the third control period (FY2021-22 to FY2025-26). It proposes to construct a series of scenarios for varying ERP and β_E . The scope of work involves:⁹

- a) Study of relevant environment, trends in airport capitalization

⁹ Ref Letter: AERA/20010/RFP Study/COE/ Hyd. & Bang/2019-20/13389-90 dated 19.12.2019.

- b) Study airport-specific determinants of Cost of Capital with specific focus on the Cost of Equity
- c) Recommendations on Cost of Equity
- d) Follow-on activities

The detailed “Terms of Reference”⁹ is provided in Appendix 1.

The next chapter (chapter 2) of this report starts with a study of airports’ regulatory practices all over the world. The emphasis here is on the regulatory bodies’ stance on the methodology for determining CoE for their jurisdictional airports. This is followed by a section on shortlisting airports that are similar in structure and operation vis-à-vis HIAL. **This “comparables” set is used to estimate the underlying beta risk and leverage – crucial inputs for determining CoE.** We analyze recent trends in the capitalization structure and funding mechanisms of these comparable firms and examine their performance in the recent past. This is followed by how CoE is determined in these airports and the takeaways for HIAL therein. In the next section, we provide details of unique features of the Indian market (e.g., demand outstripping supply, external shocks, etc.) that influence the CoE. Finally, we wind up this chapter with a discussion on the trends prevalent generally in other infrastructure space, e.g., Investment Infrastructure Trusts (InVITs).

Chapter 3 is devoted to estimating CoE. We first start by highlighting the methodology followed by data availability and collection. Next, the analyses of the said data with its assumptions and caveats are provided. Finally, we conclude this chapter with all the results. The key recommendations at the end of each discussion are given under the title of “Recommendations”, wherever applicable. A final summary of all recommendations made throughout this study is presented at the end of Chapter 3.

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Chapter 2 – Current Environment and Trends in Airports Capitalization

Airports were traditionally managed by their respective governments the world over. However, this trend has changed considerably in the past two decades. Demanding passengers and competition have forced privatization. A variety of uncertain factors, such as accurate demand estimation, regulatory environment, macro-economic environment, etc., play a major role in determining the economic viability of running an airport. Hence, private players demand some level of guaranteed returns on the equity they invest.

This chapter begins with an overview of the regulatory practices followed for various international airports, with emphasis on the regulatory bodies' stance on the methodology for determining CoE for their jurisdictional airports. Worldwide, the capital asset pricing model (CAPM) is used by regulators for determining the cost of equity for airports (as can be seen in Table R1, which provides information on the methodology used by various regulatory authorities for estimating the cost of equity). The key factor that drives the CAPM-based CoE estimate is the estimate of (beta) risk in an airport. We rely on a standard procedure of identifying comparable airports that will be used to estimate the (beta) risk of Hyderabad airport. We measure the “comparability” of an international airport to Hyderabad airport in terms of a proximity score that accounts for differences in three key dimensions that characterize the functioning of airports:

- (i) Revenue till mechanism
- (ii) Ownership structure
- (iii) Operations scale.

This analysis allows us to shortlist the most proximate airports into a set of comparable airports. Further downstream in chapter 3, we use this set of “comparables” to estimate the underlying beta risk and leverage – crucial inputs for determining CoE.

We analyze recent trends in the capitalization structure and funding mechanisms of these comparable airports and examine their performance in the recent past. We document these trends vis-à-vis the corresponding trends in Hyderabad airport. This analysis helps us understand how other factors that are not explicitly accounted for in the CAPM methodology may provide guidance on the procedure of estimating the cost of equity of Hyderabad airport. While a few interesting trends emerge from our analysis, we conclude that there are

no systematic conclusions that one can make regarding their impact on the cost of equity. More importantly, it is likely the case that (beta) risk factor in the CAPM methodology implicitly accounts for these trends.

In additional analysis, the following associated issues are also considered:

- (i) Internal rate of return based on book values.
- (ii) Evaluate the return implicit in a divestment transaction involving BIAL.
- (iii) Discuss trends in other infrastructure projects, for e.g., highway monetization using InVITs.

2.1. Airports' Economic Regulatory Framework Worldwide

In order to understand the regulatory framework across the world, we studied 12 countries' Regulatory Authorities regulating more than 25 airports. We documented the following:

- Till structure
- Methodology used to compute CoE
- Prescribed leverage
- Capitalization guidelines for airports

A detailed consolidation of the study is presented in Table R1. The following are the key takeaways:

- **Cost of Capital Methodology:**
 - None of the regulators mandate the use of CAPM as a method to estimate CoE but most airports use it as a standard.
 - Dublin (Ireland) uses a WACC methodology that incorporates additional factors, like passenger pass-through time, baggage handling time, etc.
- **Extent of Private Participation:** Except for the United Kingdom and Australia in the sample, governments hold more than 10% equity in their airports.
- **Till Structure:** Most airports apart from Singapore and Brazil follow a single or a dual till mechanism. Singapore and Brazil follow a hybrid till.
- **Leverage (D/E ratio):** The regulators do not mandate or limit the operators to follow a specific leverage. The 5-year actual leverage based on shareholders' fund (SF) and paid-up equity (PE) is discussed in Table R1.

- Changi Airport, wholly owned by the government, has the lowest leverage using both SF and PE, i.e., 6.80% and 13.62%, respectively, across all the international airports discussed here.
- Heathrow Airport has the highest leverage using both SF and PE, i.e., 83.41% and 99.79%. This situation arose because nominal share capital was reduced by a factor of 10 and transferred to distributable reserves, which were paid to equity holders. This action resulted in lowering of equity and thereby abnormally high leverages.
- Malaysia Airport Holdings Berhad (Holding Company) and Airports of Thailand (Holding Company) use a debt and equity mix (SF 43.75% and PE 66.15%) that matches the average leverage across all the international airports discussed here.
- **Dividend Distribution:** There is no mandate by any of the regulators to pay out dividends.
 - Malaysia Airport Holdings (MAHB) has made it a policy as a company to declare 50% of its profits as dividends.
 - Airports of Thailand have a policy of paying at least 25% of its profits as dividends.

Given this understanding of the international regulatory scenario and capitalization structure, we next move on to understand various international airports' operation in terms of their funding mechanism and returns they make for their private investors. For this purpose, we first shortlist a set of international airports based on their proximity to HIAL in these features. Next, we document the methodology used for shortlisting these airports.

Table R1: Regulatory Framework Worldwide

S. No.	Country Col(1)	Regulating Authority Col(2)	Norms for Till Specified Col(3)	Calculation of COE specified(Yes/No) Col(4)	Book Debt to Shareholders' Funds (Book Debt to Paid-Up Equity Capital) 5-Year Avg. Col(5)	Norm for Share Ownership Structure Col(6)
1	Australia ¹⁰	Australian Competition and Consumer Commission (ACCC)	Dual Till	Not mandated, but uses CAPM, by way of Building Block Methodology.	• Sydney – 72.00% (49.48%) • Melbourne – 75.78% (95.96%)	• ACCC does not mandate. • The top 21 holders (~91.20% holding) in Sydney do not include any of the government authorities.
2	New Zealand ¹¹	Commerce Commission (CC)	Dual Till	• Not Mandated • The CC takes an expert opinion from NERA Economic Consulting (which uses CAPM) • CC computes WACC as per best available estimates, defining a range. • The commission then compares it with post-tax IRR, a combination of target returns for Aeronautical Pricing Activities and the forecast revenue of other regulated activities. • CC checks whether the IRR falls within WACC range as computed earlier and makes a decision on WACC with the help of substantial supportive information.	• Auckland – 28.61% (81.33%)	• CC does not mandate. • But in Auckland, ~81.9% of the total shares are publicly held and traded. • Again ~18.1% of the shares are held by Auckland Municipal council
3	United Kingdom ¹²	Civil Aviation Authority (CAA)	Single Till	• Not Mandated • However, CAA uses CAPM	• Heathrow – 83.41% (99.79%) • Gatwick – 80.14% (82.79%)	• CAA does not mandate

¹⁰ <https://www.accc.gov.au/>

¹¹ <https://comcom.govt.nz/>

¹² <https://www.caa.co.uk/home/>

Table R1: Regulatory Framework Worldwide

S. No.	Country Col(1)	Regulating Authority Col(2)	Norms for Till Specified Col(3)	Calculation of COE specified(Yes/No) Col(4)	Book Debt to Shareholders' Funds (Book Debt to Paid-Up Equity Capital) 5-Year Avg. Col(5)	Norm for Share Ownership Structure Col(6)
4	South Africa ¹³	No information available publicly	Single Till	- Airport charges are regulated through the use of a price cap formula¹³ - CPI-X, which limits the increase in a basket of revenue weighted tariffs to a rate of inflation (efficiency factor – X) - The X-factor is determined by applying the building blocks methodology whereby each block of activities is identified, namely operating costs, depreciation, return on capital and taxation.	Data Not Available	No mandated norm but South African government owns 74.6%
5	South Korea	No information available publicly.				
6	Malaysia ¹⁴	Malaysian Aviation Commission (MAVCOM - Primary Economic Regulator)	Single Till	- Not Mandated - MAVCOM uses CAPM to estimate cost of equity.	Malaysia Airport Holdings Berhad (MAHB) – 43.75% (74.46%)	Malaysia Airports owns several airports across Malaysia. Retail shareholders hold ~53.7% in MAHB.
7	Ireland ¹⁵	Commission for Aviation Regulation (CAR)	Single Till	- Not mandated - Uses CAPM to compute WACC with additional factors like load, baggage handling time, etc.¹⁵	Dublin Airport Authority PLC – 48.26% (84.75%)	State ownership
8	Indonesia	No information available publicly.				

¹³ <http://www.airports.co.za/business/investor-relations/economic-regulation>

¹⁴ <https://www.mavcom.my/en/home/>

¹⁵ <http://www.aviationreg.ie/fileupload/2014final/2014%20Final%20Determination.pdf>

Table R1: Regulatory Framework Worldwide

S. No.	Country Col(1)	Regulating Authority Col(2)	Norms for Till Specified Col(3)	Calculation of COE specified(Yes/No) Col(4)	Book Debt to Shareholders' Funds (Book Debt to Paid- Up Equity Capital) 5-Year Avg. Col(5)	Norm for Share Ownership Structure Col(6)
9	Singapore ¹⁶	Civil Aviation Authority of Singapore	Hybrid Till (70– 80%) ¹⁶	CoE is computed as a sum of: • Computed pre-tax weighted average cost of capital (WACC) on the average regulated asset base. • Computed pre-tax WACC on the average security asset base not recovered	Changi Airport Group – 6.80% (13.62%)	Fully government owned
10	Netherland ¹⁷	Human Environment and Transport Inspectorate	Dual Till	Mandates use of WACC based on CAPM	Schipol Group – 34.52% (95.98%)	PPP
12	Thailand ¹⁸	Civil Aviation Authority of Thailand	Dual Till	Not mandated but uses CAPM	Airports of Thailand – 20.90% (66.15%)	70% mandatorily government owned
13	Brazil ¹⁹	National Civil Aviation Agency (ANAC)	Hybrid Till	• Not Mandated • ANAC uses CAPM to estimate cost of equity.	Data Not Available	PPP up to 60% observed

¹⁶ <https://www.caas.gov.sg/>

¹⁷ <https://english.ilent.nl/>

¹⁸ <https://www.caat.or.th/en/>

¹⁹ <http://www.anac.gov.br/en>

2.2. Comparable Airports (Comparable to HIAL)

The above table (Table R1) provides information on airports in different jurisdictions and assesses the existence of airport data). Europe, South Africa, South East Asia, and Australasian regions were deemed to be relevant for the study. Middle East (hub airports) and China (lack of credible data), the Americas (different environment) were excluded. Next, within the four regions, the study narrowed down on 12 airports: Sydney, Melbourne, Auckland, MAHB, AoT, Changi, Incheon, Heathrow, Gatwick, Dublin, Amsterdam, and Johannesburg. Although Table R1 provides information on Brazil, we excluded it because it lies in the Americas (different environment). Then, we assessed the (proximity score) of each international airport to HIAL based on the following parameters.

- Revenue till structure:
 - 1 – Single Till or where information is not available
 - 2 – Dual Till
 - 3 – Hybrid Till
- Ownership structure:
 - 1 – if 100% Government Owned/Funded
 - 2 – if Government / private owned/funded, not being Public Private Partnership
 - 3 – if Public Private Partnership Funded
- Operations Scale (OpS): For each comparable airport, k , we computed the ratios of passenger, cargo, and aircraft movement of these airports to that of HIAL in each of the years from 2015 to 2017. Note that all comparable airports are international airports. These ratios are based on past 3 years' data as available from the respective airports' websites/annual reports. Next, an equal weighted sum for these airports is computed using average of the ratios under each category (passenger, cargo and air traffic) as per Equation 2.1²⁰:

²⁰ By construction, the OpS score for HIAL with respect to HIAL (itself) would be 3. To see this, note that each of the ratios (R_{Pi} , R_{Ci} , R_{Ai} , for passenger, cargo and air traffic, respectively) for a given year would be equal to 1 by definition, and therefore an equally weighted average of these ratios must be equal to 1. Then, cumulating these numbers over the 3 years (2015 to 2017) would yield an OpS score of 3. If the OpS score for an

$$OpS_k = \sum_{i=2015}^{i=2017} \left(\frac{1}{3}\right) * R_{Pi} + \left(\frac{1}{3}\right) * R_{Ci} + \left(\frac{1}{3}\right) * R_{Ai}$$

Equation 2.1 – Operations Scale

where

OpS_k = Operations scale for comparable airport k

i = Year 2015, 2016 and 2017

R_{Pi} = Ratio of passengers of the comparable airport to that of Hyderabad airport,

Equation 2.2,

$$R_{Pi} = \frac{P_i}{P_H}$$

Equation 2.2 – Passenger Ratio

P_i = No. of passengers for the comparable international airport in year i

P_B = No. of passengers for HIAL in year i

R_{Ai} = Ratio of aircraft movements of the comparable airport to that of Hyderabad airport,

Equation 2.3 – Air Traffic Ratio,

$$R_{Ai} = \frac{A_i}{A_H}$$

Equation 2.3 – Air Traffic Ratio

A_i = No. of aircraft movements for a comparable international airport in year i

A_B = No. of aircraft movements for HIAL in year i

R_{Ci} = Ratio of cargo of the comparable airport to that of Hyderabad airport, Equation 2.4,

$$R_{Ci} = \frac{C_i}{C_H}$$

Equation 2.4 – Cargo Ratio

international airport from the comparable set with respect to HIAL is 6, then we can conclude that the international airport's scale of operation is about twice (score of 6 divided by 3) of that of HIAL.

C_i = Total cargo movement in metric tonne for a comparable international airport in year i

C_B = Total cargo movement in metric tonne for HIAL in year i

- Finally, the proximity score for comparable airport, k , with respect to Hyderabad airport (H) is denoted by $PS_{k,H}$. It is the net Euclidean Distance from each of the parameters w.r.t. HIAL (Equation 2.5)

$$PS_{k,H} = \sqrt{(RT_H - RT_k)^2 + (OS_H - OS_k)^2 + (OpS_H - OpS_k)^2}$$

Equation 2.5 – Proximity Score w.r.t. HIAL

RT_H = Revenue Till Score of HIAL

RT_k = Revenue Till Score of comparable airport, k

OS_H = Ownership structure Score of HIAL

OS_k = Ownership structure Score of comparable airport, k

OpS_H = Equal Weighted Operations Scale of HIAL

OpS_k = Equal Weighted Operations Scale of comparable airport, k

Table 2.1 reports the scores of all airports considered with their weights w.r.t. HIAL. As observed, Incheon Airport is out of bounds w.r.t HIAL. We discard this in the final analysis.

Intuition of the Proximity Score

The Proximity Score provides a Euclidean distance measure of a benchmark airport (from the comparable set) relative to the airport under consideration (HIAL, in this case). The proximity score considers three dimensions of comparison: (i) till mechanism, (ii) ownership structure, and (iii) operational scale. By construction, the proximity score for HIAL would be 0, but the proximity score of the benchmark international airport in the comparable set would depend on how different it is with respect to HIAL, with a high score indicating a dissimilar airport and a low score indicating a more similar airport.

Table 2.1: Proximity scores of different airports w.r.t HIAL

The table represents the difference between the scores for HIAL and the respective airport. The proximity score is defined as $PS_{k,H} = \sqrt{(RT_H - RT_k)^2 + (OS_H - OS_k)^2 + (OpS_H - OpS_k)^2}$, where RT stands for revenue till, OS is Ownership and Funding Mechanism, and OpS is Operations. The subscripts B and k represent Hyderabad and the comparable airport, respectively. MAHB is the holding company of Kuala Lumpur Airport. AoT is the holding company of Bangkok Airport.

S. No.	Airport (Col 1)	Revenue Till ($RT_H - RT_k$) (Col 2)	Ownership Structure ($OS_H - OS_k$) (Col 3)	Operations ($OpS_H - OpS_k$) (Col 4)	Proximity Scores ($PS_{k,H}$) (Col 5)
	Hyderabad	0.00	0.00	0.00	0.0000
1	Auckland	1.00	1.00	-1.06	1.7644
2	Dublin	2.00	2.00	-1.46	3.1827
3	Johannesburg	2.00	1.00	-2.31	3.2180
4	Gatwick	2.00	1.00	-3.07	3.7945
5	Melbourne	1.00	1.00	-3.77	4.0269
6	Sydney	1.00	1.00	-6.54	6.6950
7	MAHB	2.00	1.00	-19.14	19.2726
8	Amsterdam	1.00	1.00	-19.93	19.9778
9	Heathrow	2.00	1.00	-20.43	20.5522
10	Changi	0.00	2.00	-21.06	21.1533
11	AoT	1.00	1.00	-24.19	24.2358
12	Incheon	2.00	2.00	-26.79	26.9372

We have excluded the US and Canadian airports as their administrative, operations and governance structure are significantly different from this set. Also, there is negligible government participation in these airports. The Brazilian airports are relatively new to the concept of privatization (~2011). Hence, we did not include airports from Brazil also.

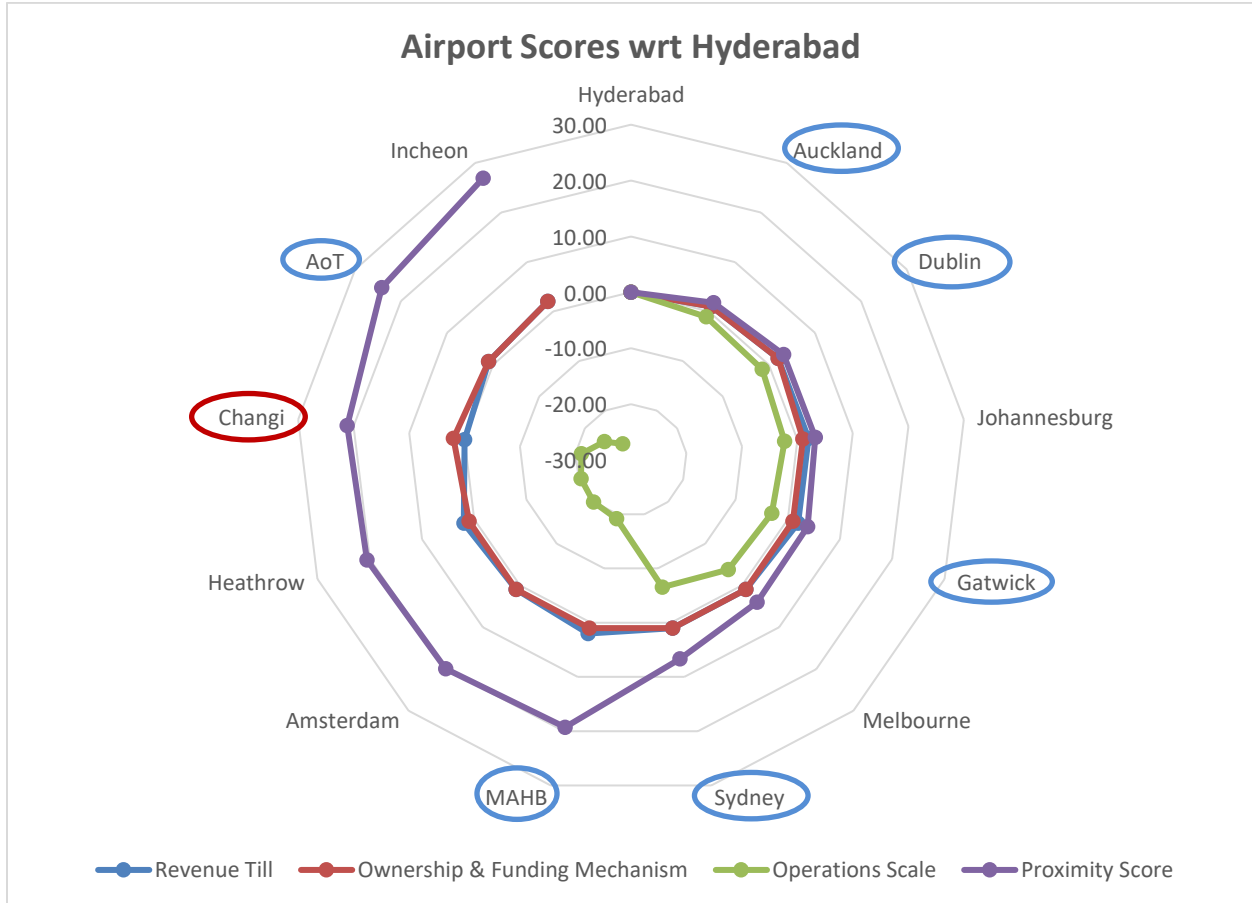
We shortlisted 7 airports for a detailed study based on the overall proximity scores of these airports. The criterion for the shortlist was governed by the proximity score, data availability, and to ensure that we have a healthy mix of similarity and dissimilarity to compare as well as contrast. *Fig 2.1* map these airports w.r.t. HIAL on a radar chart based on their proximity scores. The radar chart sweeps in the clockwise direction, with the proximity score spiraling outwards. The scores range from ~1.7644 for Auckland to ~26.9372 for Incheon. The lower the score, the nearer the airport is w.r.t. HIAL.

We adhered to three principles in determining the comparison set of international airports: (i) listed airports that provided market-based price data are preferred to unlisted airports, (ii) if an airport is unlisted, we seek credible beta information from regulatory authority, if available in public domain, and (iii) among comparison airports in the same geography/jurisdiction, we give preference to the listed airports, and among the listed airports, the one with more proximity.

Heathrow was excluded from the list to avoid geographical clustering (giving preference to Gatwick because of its proximity to HIAL). In the case of Australia, regulators do not provide any information on asset beta. The only recourse to a good estimate of beta is to rely on market information. Since Sydney is a listed airport, we can estimate Sydney airport's beta using market data. Melbourne airport is unlisted, and the regulatory authority also does not provide any estimate of beta. Thus, we prefer to include Sydney airport in our comparison set despite Melbourne airport being more proximate to HIAL because Sydney airport's beta estimates can be reliably computed using market price data. Also, lack of comprehensive data made us exclude Amsterdam airport, Incheon airport, and Johannesburg airport.

Fig 2.1: Airport Proximity Scores w.r.t. Hyderabad

The chart depicts the scores of various parameters (Revenue Till, Ownership Structure, Operations and the Overall Proximity Score) of various international airports w.r.t. HIAL. All scores originate at HIAL (all scores are 0 here). As one sweeps clockwise, the Proximity Score moves away from Hyderabad, thus making Auckland the nearest airport to Hyderabad and Incheon the farthest. Negative scores are possible only for Operations score. Heathrow airport was excluded to avoid geographical clustering (giving preference to Gatwick). The 6 airports (Sydney, Gatwick, Auckland, MAHB, AoT and Dublin) encircled in **blue** and 1 airport (Changi) encircled in **red** are used for comparative study vis-à-vis HIAL (sec 2.2). The airports encircled in **blue** (Sydney, Gatwick, Auckland, MAHB, AoT and Dublin) are used for asset beta computation of HIAL as discussed in chapter 3 (sec 3.2.1). MAHB is the holding company of Kuala Lumpur Airport. AoT is the holding company of Bangkok Airport.



Data Sources: Individual airports' website; balance sheets and regulators' website.

Recommendations (Comparable Set of International Airports for HIAL)

- *The study considered different jurisdictions and assessed the existence of airport data and the relevance of the airport (See Table R1 of the study). Europe, South Africa, South East Asia, and Australasian regions were deemed to be relevant for the study. Middle East (hub airports) and China (lack of credible data), the Americas (different environment) were excluded. Next, within the four regions, the study narrowed down on 12 airports: Sydney, Melbourne, Auckland, MAHB, AoT, Changi, Incheon, Heathrow, Gatwick, Dublin, Amsterdam, and Johannesburg. These airports were considered for determining the proximity score because traffic density data was available.*
- *For estimating the asset beta (Chapter 3), we adhered to three principles in determining the comparison set of international airports: (i) listed airports were preferred to unlisted airports, (ii) if the airport is unlisted, we sought credible beta information from the regulatory authority, if available in public domain, and (iii) among comparison airports in the same geography/jurisdiction, we gave preference to the listed airports, and within the listed airports, the one with more proximity.*
- *The final comparison set for estimating asset beta consists of 6 airports (2 from Australasia – Sydney and Auckland, 2 from South East Asia – MAHB and AoT, and 2 from Europe - Gatwick, and Dublin). These airports were finally considered based on availability of market price data and the experience of the regulatory authority in assessing airport beta. The geographic spread of comparison set airports gives us confidence that the estimation of asset beta is robust.*
- *In the set of 6 airports considered for estimating asset beta, 4 airports are from developed countries and 2 airports from developing countries. Note that Indian airports face less demand risk because of generous true-ups offered in the PPP agreement. Thus, Indian airports are unlikely to face more systematic risk than developed country airports and can be benchmarked against comparable developed country airports in the comparison set.*
- *In the case of Australia, regulators do not provide any information on asset beta. Therefore, including a listed airport (Sydney) is preferable to including Melbourne because beta estimates can be reliably computed using market price data.*

We next analyze these airports vis-à-vis HIAL for its capitalization structure, funding mechanism and investors' returns.

2.2.1. Capitalization and Ownership Structure

Heathrow is 100% privately owned by Heathrow Airport Holdings Limited with no government stake. The erstwhile government entity of British Airports Authority (BAA) was privatized in 1987 and raised capital through the open market. It also constituted a part of FTSE 100 with peak operating profits of GBP 11 million in the mid-1990s. It was delisted in

2006 following a takeover by a consortium of operators led by Spanish MNC, Ferrovial, S.A. This consortium currently operates Heathrow. Its current ownership structure is shown Table 2.2.²¹

The Gatwick airport was also originally part of BAA and then Ferrovial, S.A. However, subsequent stake sales have altered the ownership structure. Table 2.3 shows the current pattern.

Table 2.2: Ownership structure of Heathrow Airport

Shareholders (Col 1)	Share (Col 2)
Ferrovial	25.00%
Qatar Holding	20.00%
Caisse de dépôt et placement du Québec	12.62%
Government of Singapore Investment Corporation	11.20%
Alinda Capital	11.18%
China Investment Corporation	10.00%
Universities Superannuation Scheme	10.00%
Total	100.00%

Source: <https://www.heathrow.com/company/investor-centre/investor-presentations>

Table 2.3: Ownership structure of Gatwick Airport

Shareholders (Col 1)	Share (Col 2)
VINCI SA	50.01%
Other Shareholders (undisclosed)	49.99%
Total	100.00%

Source: <https://www.gatwickairport.com/globalassets/business--community/investors/april-2020/ivy-holdco-limited-consolidated-financial-statements-31-december-2019.pdf>

²¹ <https://www.heathrow.com/company/investor-centre/investor-presentations> as viewed on 12 Dec 2020

Sydney and Auckland are publicly listed companies with the ownership structure as depicted in Table 2.4 and Table 2.5, respectively.

Table 2.4: Ownership structure of Sydney Airport

Shareholders (Col 1)	Share (Col 2)
HSBC Custody Nominees (Australia) Limited	26.9%
BNP Paribas Nominees Pty Ltd	18.4%
J P Morgan Nominees Australia Limited	12.8%
Citicorp Nominees Pty Limited	6.6%
Balance Retail Holdings	35.3%
Total	100.00%

Source:

https://assets.ctfassets.net/v228i5y5k0x4/4VyuoCbo3sqHVBggCxV7h3/5ad8f884f3ac89516391d8ea459d50ff/SYD_Annual_Report_2019_FINAL.pdf

Table 2.5: Ownership structure of Auckland Airport

Shareholders (Col 1)	Share (Col 2)
Auckland Council Investments Limited	18.09%
Balance Retail Holdings	81.91%
Total	100.00%

Source:

<https://corporate.aucklandairport.co.nz/investors/results-and-reports>

The two major international airports at Bangkok (Suvarnabhumi Airport and Don Mueang) are owned and operated by a holding company, Airports of Thailand Public Company Limited (AoT). This holding company is a government-owned publicly listed company.²² Totally, 70% of the ownership is held by the state's Finance Ministry with foreign ownership capped

²² www.airportthai.co.th as viewed on 28 Feb 2020

at 30%, other major shareholders include Thai NVDR Company Limited (4.49%), South East Asia UK (Type C) Nominees Limited (2.76%) and State Street Europe Limited (1.67%).

The Kuala Lumpur airport manages on very similar lines of Bangkok by Malaysia Airport Holdings Berhad (MAHB), a holding company, in Table 2.6.

Table 2.6: Ownership structure of Malaysia Airport Holdings Berhad (MAHB)

Shareholders (Col 1)	Share (Col 2)
Khazanah Nasional Berhad	33.21%
Citigroup Nominees (Tempatan) Son Berhad (Employees Provident Fund Board)	13.06%
Balance Retail Holdings	53.73%
Total	100.00%

Source: https://mahb.listedcompany.com/misc/ar/mahb_ar2019.pdf

The Changi airport and Dublin airport are fully state-owned airports, through subsidiary companies.

Majority stake in BIAL is held by a consortium led by the FIH Mauritius Investments Ltd. The shareholding patterns of the four (4) major Indian private airports (Bangalore, Delhi, Mumbai, and Hyderabad) are provided in Table 2.7 through Table 2.10. The Indian government (state/central or their subsidiary) has a 26% stake in each of these.

Table 2.7: Ownership structure of Bangalore International Airport Ltd. (BIAL)

Shareholders (Col 1)	Share (Col 2)
Airport Authority of India	13.00%
Karnataka State Industrial and Infrastructure Development Corporation Limited (KSIIDC)	13.00%
Siemens Project Ventures GmbH	20.00%
FIH Mauritius Investments Limited	54.00%
Total	100.00%

Source: Website of BIAL²³

Table 2.8: Ownership structure of Delhi International Airport Ltd. (DIAL)

Shareholders (Col 1)	Share (Col 2)
Airport Authority of India	26.00%
GMR Airports Limited	64.00%
Fraport AG Frankfurt Airport Services Worldwide	10.00%
Total	100.00%

Source: Annual Report of DIAL 2019-20

²³ <https://www.bengaluruairport.com/corporate/about-bial.html> as viewed on 12 Dec 2020.

Table 2.9: Ownership structure of Mumbai International Airport Ltd. (MIAL)

Shareholders (Col 1)	Share (Col 2)
Airport Authority of India	26.00%
Adani Group	74.00%
Total	100.00%

Source: Business Standard, 1 Sep 2020²⁴

Table 2.10: Ownership structure of Hyderabad International Airport Ltd. (HIAL)

Shareholders (Col 1)	Share (Col 2)
Airport Authority of India	13.00%
Government of Telangana	13.00%
MAHB (Mauritius) Private Limited	11.00%
GMR Airports Limited	63.00%
Total	100.00%

Source: Website of HIAL²⁵

2.2.2. Funding Mechanism

As highlighted in Table 2.4 and Table 2.5, the Asset Management Companies (AMCs) and pension funds are a major shareholder in Australia and New Zealand. In the case of Malaysia and Thailand, the holding company is listed.

2.2.3. Trends in Airports Operations'

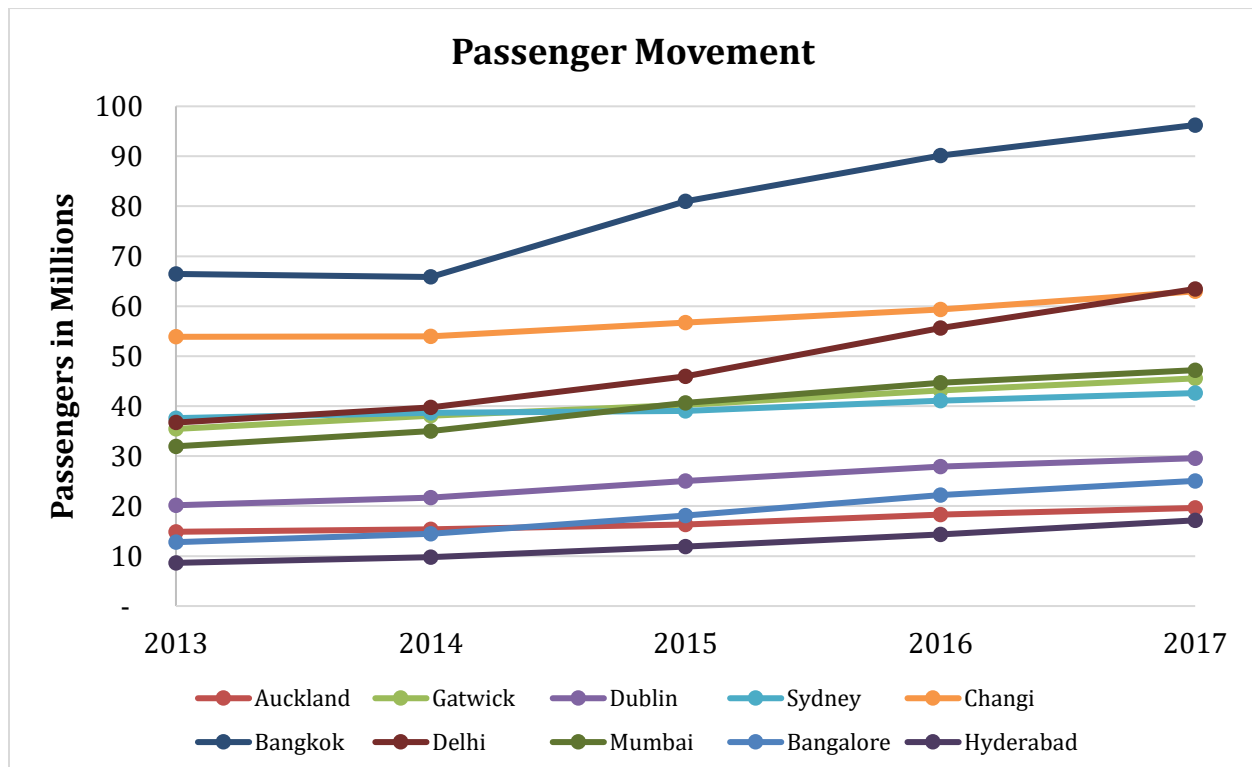
Fig 2.3 – Fig. 2.6 show the recent trends of passenger movement, total revenue, revenue/passenger and Earnings After Tax (EAT) for all airports. As seen from these charts, all parameters indicate a healthy state, with the following key takeaways:

²⁴ https://www.business-standard.com/article/companies/adani-group-acquires-74-per-cent-stake-in-mumbai-international-airport-120083100215_1.html as viewed on 12 Dec 2020.

²⁵ <https://www.hyderabad.aero/our-company.aspx> as viewed on 12 Dec 2020.

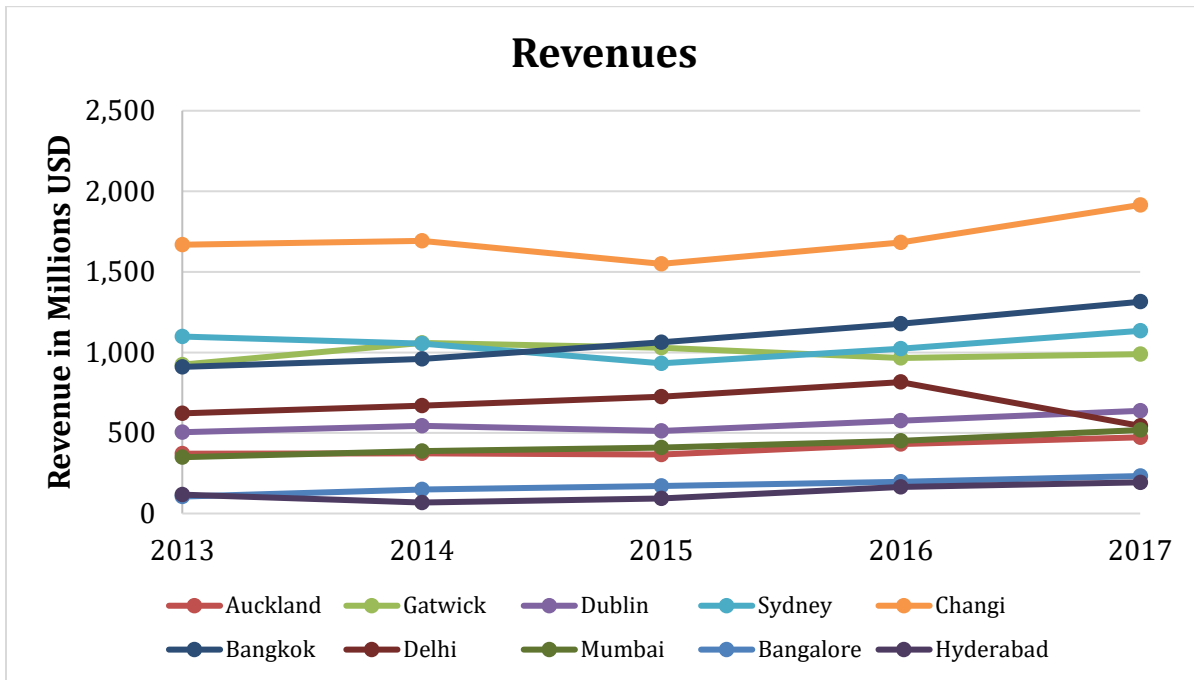
- All airports have experienced a steady growth in passenger volumes (Fig 2.3) over the period of 5 years.
- Revenue trends are also in sync with passenger trends (Fig 2.4) except for Delhi (2017) and Hyderabad (2013).
- Earnings After Taxes (EAT) have also been rising except for Changi airport – Fig 2.6.

Fig 2.2: Passenger Movement Trends



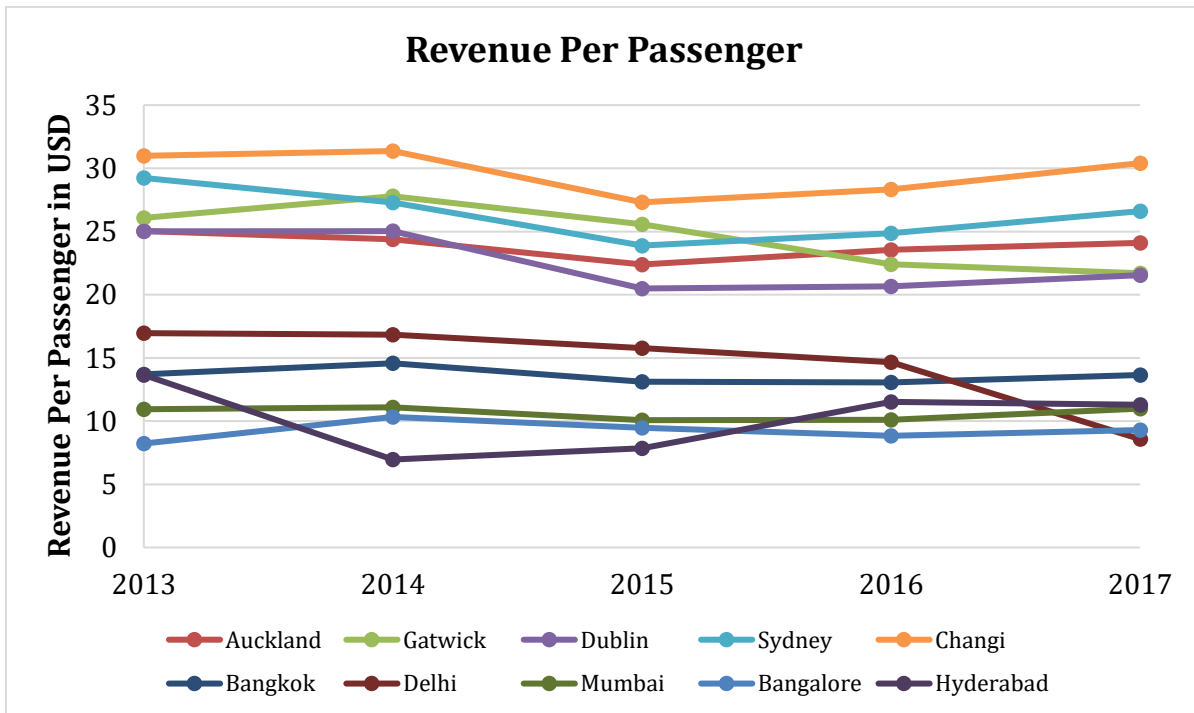
Data Source: Passenger and traffic statistics published by the respective airports' official website for international airports and the Airports' Authority of India's website for Indian airports.

Fig 2.3: Revenue Trends



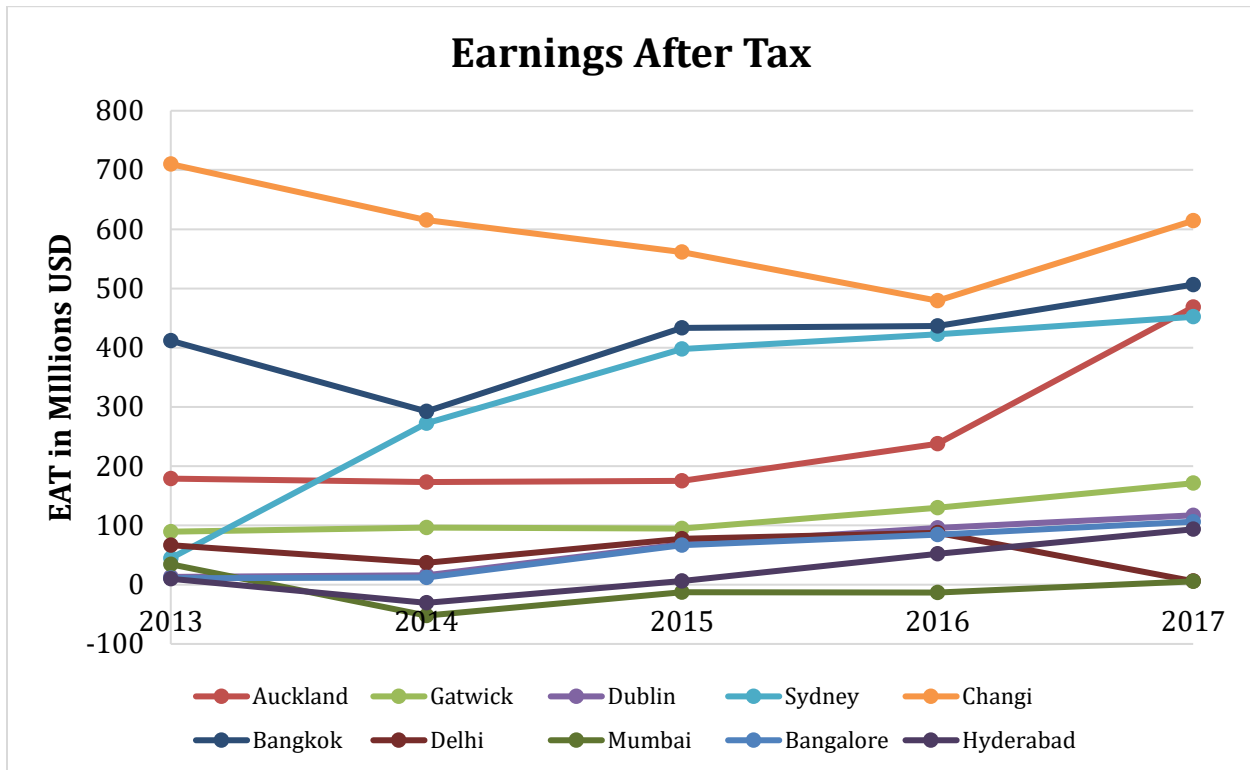
Data Source: Balance sheets of the respective airports

Fig 2.4: Revenue Per Passenger Trends



Data Source: Balance sheets and passenger movement data from official websites

Fig 2.5: Earnings after Tax Trends



Data Source: Balance sheets of the respective airports

Given these insights, we now try to draw some lessons for the Indian airports. We tried to establish a correlation between EAT vs. revenue per passenger. The hypothesis is, with an increase in passenger movement and EAT, revenue per passenger should be fairly stable or decrease. In other words, if traffic as well as EAT is healthy, the total airport charges per passenger should be constant or decrease because being public services there is pressure on airports to reduce tariffs whenever possible. Table 2.11 presents this scenario for our comparable set of airports and Table 2.12 presents this scenario for Indian airports.

Table 2.11 : Relationship between Revenue Per Passenger vs. EAT (Comparable Set)

[In this table, we try to test the following hypothesis: Does increase in passenger movement and EAT stabilize the Revenue per Passenger? This seems to be true for the comparables' set.]

Airport (Col 1)	EAT Trend (Col 2)	Passenger Movement Trend (Col 3)	Revenue Per Passenger Trend (Col 4)	Correlation Coeff. (Col 5)
Auckland	↑	↑	↔	0.9908
Sydney	↑	↑	↔	0.7234
AoT*	↑	↑	↔	0.1352
Singapore	↓	↑	↔	0.3149
Gatwick	↑	↑	↔	0.6333
Dublin	↑	↑	↔	0.0857

Data Source: Balance sheets and official website of individual websites

*Includes only passenger data, revenue data and earnings after tax data, for Bangkok and Don Mueang Airports only, not the holding company, Airports of Thailand as a whole.

Table 2.12: Relationship between Revenue per passenger vs. EAT (Indian Airports)

[In this table, we try to test the following hypothesis: Does increase in passenger movement and EAT stabilize the Revenue per Passenger? This seems to be true for the set of comparable airports (Table 2.11). It is not so for Indian airports.]

Airport (Col 1)	EAT Trend (Col 2)	Passenger Movement Trend (Col 3)	Revenue Per Passenger Trend (Col 4)	Correlation Coeff. (Col 5)
Mumbai	↑	↑	↑	0.1122
Delhi	↑	↑	↓	0.7528
Hyderabad	↑	↑	↑	0.6237
Bangalore	↑	↑	↑	0.3218

Data Source: Balance sheets and AAI's official website

As can be seen from Table 2.11, while EAT and revenues have been on an increasing trajectory for Indian airports, revenue per passenger, on average, is marginally increasing

with positive and negative growths in individual years (except in the case of Delhi where it has been decreasing consistently).

2.3. Associated Issues

2.3.1. Internal Rate of Return to Equity Investors

We study the returns that investors in airports in the comparable set have earned over the past 5 years (2013–17). For this, we take the approach of computing the Internal Rate of Return (IRR) for all the airports. Internal Rate of Return (IRR) is the compounded annual rate of return that the investor earns annually for his investment over a given period.²⁶ Fig 2.6 shows the results. The key takeaways are as follows:

1. Auckland and Sydney being listed companies with pension and long-term mutual funds, show the way forward for good airport funding and management. The healthy IRR suggests access to long-term funds can ease pressure on OPEX. Furthermore, any plans for expansion can be envisaged with lower rates for CAPEX and lower Cost of Debt (CoD).
2. Airports of Thailand: The Regulator does not mandate any dividend distribution. However, AoT as a company has a policy to pay out at least 25% of total profits as dividend.²⁷ On average, they have paid USD 197.26 million in the past 5 years and have the highest IRR in the group.
3. In case of Dublin, as per National Aviation Policy 2015, it is stated that profitable commercial state companies should pay financial dividend to the state; the guideline figure is 30% of profit after tax. Dublin has been gradually earning profits and dividend has been paid from the year 2015 onwards. However, a low IRR of 4% is due to losses incurred before 2015.
4. Even in the Indian airports, AERA does not mandate dividend payments; however, airports have recently started paying out dividends to their investors. Apart from MIAL, all others (BIAL, HIAL and DIAL) have been consistently profitable over the 5

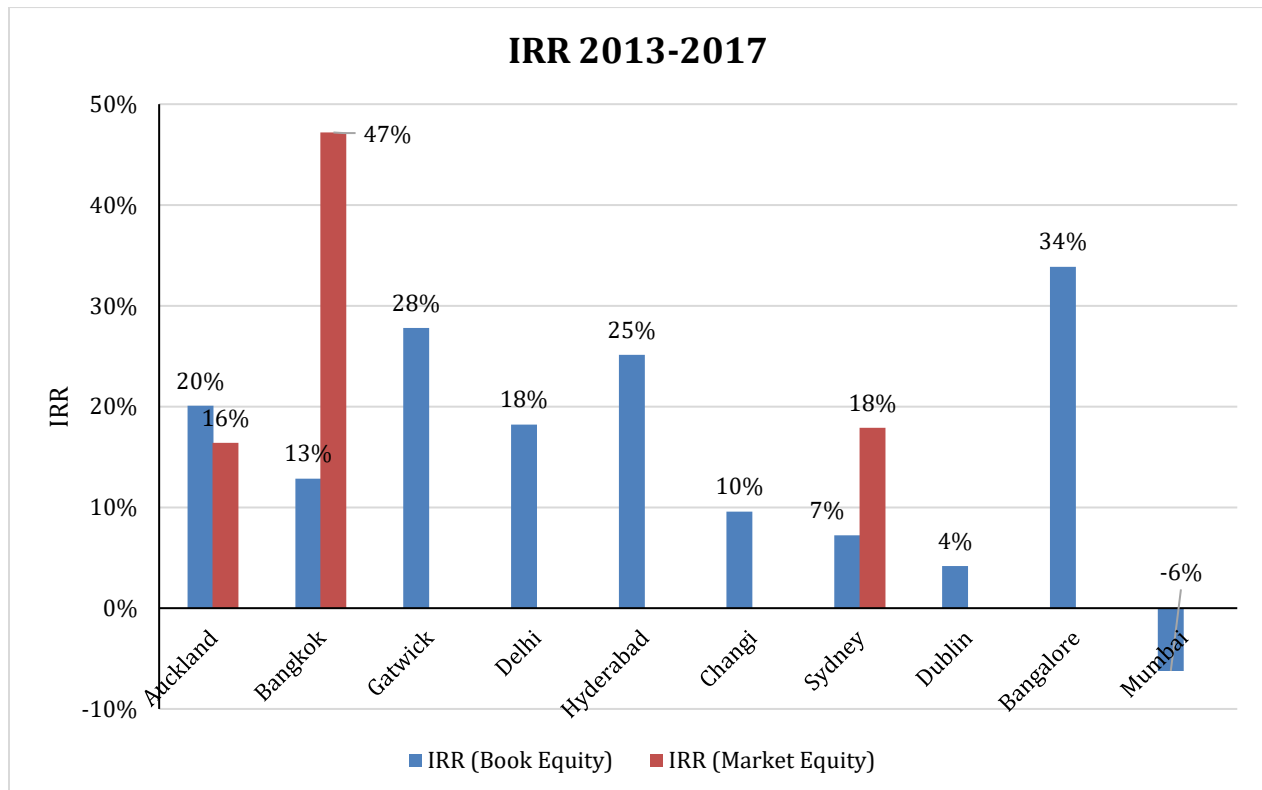
²⁶ <https://corporatefinanceinstitute.com/resources/knowledge/finance/internal-rate-return-irr/> as viewed on 12 Dec 2020.

²⁷ <http://investor.airportthai.co.th/dividend.html> as seen on 12 Dec 2020.

years. However, BIAL and HIAL have recently started paying dividends, while DIAL has paid dividends only once in 2017-18. MIAL is yet to declare dividends.

Fig 2.6: Past 5 years' IRR based on Book and Equity Returns

Internal Rate of Return (IRR) is the compounded annual rate of return that the investor earns annually for his investment over a given period of time²⁶. We computed the IRR based on book equity and their market capitalization (wherever applicable). The book equity method considers beginning equity, all dividends accrued (2013–2017) and ending equity (including retained earnings). The IRR based on market equity is the annualized market return based on market prices (including dividends for 2013–2017).



Data Source: Respective balance sheets of individual airports and Bloomberg for market data

2.3.2. Operators' Returns: A Case of BIAL Divestment

In the FY 2009-2010, Bangalore Airport & Infrastructure Developers Private Limited (BIADPL), a fully owned subsidiary of GVK Power & Infrastructure Limited, purchased a stake of 43% from Flughafen Zurich AG, Switzerland and L&T Infrastructure Development Projects Limited at a cost of INR 1,173.107 Crores. Again, during FY 2011-2012 BIADPL infused a further capital of INR 613.820 Crores. However, for strategic reasons, they offloaded 33% of their stake for a consideration of 2,202 Crores to Fairfax India Holdings

Corporation (FHC). Then, in FY 2017-18, they completed the exit by selling off their remaining stake of 10% at 1,290 Crore. During their holding period, they also received a dividend of INR 16.54 Crores in the year 2016-2017. The net profit turns out to be ~95% or INR 1,783 Crores over 9 years. We performed an annual Internal Rate of Return (IRR)²⁶ analysis to understand the real returns accrued to BIADPL. Table 2.13 details the working of the same.

Table 2.13: IRR computation for BIAL divestment (All amounts in INR Crore)

	2009- 2010	2010- 2011	2011- 2012	2012- 2013	2013- 2014	2014- 2015	2015- 2016	2016- 2017	2017- 2018
Investments	(1,173)		(614)	0	0	0	0	0	0
Dividend	0	0	0	0	0	0	0	166	0
Sale proceeds	0	0	0	0	0	0	0	2,2017	1,290
Cash flows for IRR	(1,173)	0	(614)	0	0	0	0	2,2183	1,290
IRR									10.57%

Data Source: Balance Sheets of BIAL and GVK from 2009 – 2018

As observed from Table 2.13, the net IRR is 10.57% per annum for the given holding period of 9 years from 2009–'18. This appears to be quite close to the AERA recommended return for the second control period (FY2016-17 to FY2020-21), viz. ~11.33%, but lower than BIAL's submission of 17%.²⁸

2.3.3. Prevalent Trends in other Infrastructure Space

Securities and Exchange Board of India (SEBI) framed guidelines to set up the Infrastructure Investment Trust or InVITs like REITs. The structure of the same is showcased in Fig 2.7. Essentially, these InVITs function as a mutual fund, enabling individual/institutional investors to gain an exposure to the stable cash flows from an infrastructure asset without being exposed to the risks involved in setting them up. As per the regulations, completed and

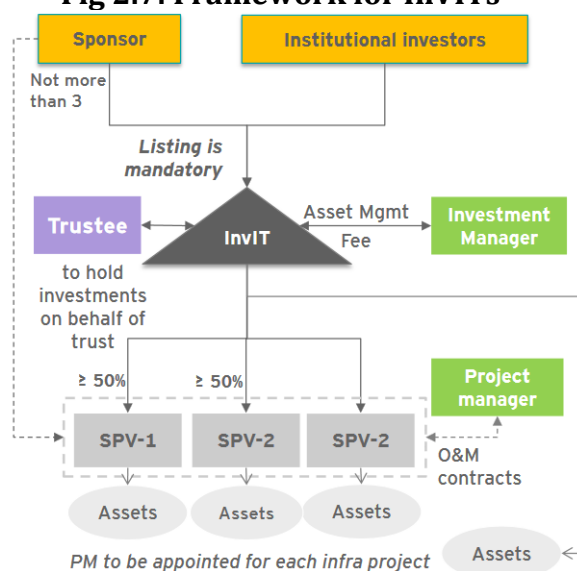
²⁸ AERA Consultation Paper No. 05/ 2018-19 from file: AERA/20010/MYTP/BIAL/CP-II/2016-17/Vol-III

revenue generating projects in PPP mode are eligible to be securitized through this procedure. Several projects in the roads and power sector are part of InVITs.

As of 2018, a prominent InVITs in the road space was IRB InVIT Fund sponsored and managed by IDBI. This had an income of 5,157 Cr. with 13 road projects. Another prominent InVIT in the power sector was IndiGrid sponsored and managed by the Sterlite group. This had an income of 406 Cr with 6 project SPVs.

The InVIT structure could be considered as one of the options while privatizing other airports owned by the Government of India.

Fig 2.7: Framework for InVITs.²⁹



Source: Ernst & Young Report on Infrastructure Investment Trusts

2.4. Determinants of CoE used in the Set of Comparable Airports

As we saw in section 2.1, although none of the regulators mandate the CAPM methodology, all the airport operators use the CAPM to determine the Cost of Equity. We know that the risk-free rate and ERPs in the CAPM equation (Equation 1.1) are macro-economic in nature, but the key in CoE determination is the equity beta. Regulators of Auckland airport, Heathrow airport, Gatwick airport and Dublin airport state the betas that they use in their

²⁹ PM in figure refers to Project manager.

CoE computations. Table 2.14 – Table 2.17 show the asset and equity betas for different control periods used in Heathrow, Gatwick, Dublin and Auckland across control periods.

Table 2.14: Auckland Regulator Betas

Auckland					
Determined By (Col 1)	Control Period (Col 2)	Betas			
		Equity (Col 3)		Asset (Col 4)	
		Low	High	Low	High
Commerce Commission	July 2008 - June 2012	0.68	1.08	0.50	0.70
Commerce Commission	July 2013 - June 2017	0.89		0.60	
Commerce Commission	July 2017 - June 2022	0.74		0.60	

Data Source: Final Report - Auckland International Airport's Pricing Decisions (July 2017 – June 2022), dated 01 November 2018, ISBN No. 978-1-869456-65-8

<https://comcom.govt.nz/regulated-industries/airports/projects/review-of-price-setting-event-3#projecttab>

Table 2.15: Heathrow Regulator Betas

Heathrow					
Determined By (Col 1)	Control Period (Col 2)	Betas			
		Equity (Col 3)		Asset (Col 4)	
		Low	High	Low	High
Civil Aviation Authority	April 2008 - March 2013	0.90	1.15	0.56	
Civil Aviation Authority	April 2014 - December 2019	1.10		0.50	
NERA Estimated	January 2020 - December 2024	1.30	1.40	0.55	0.60

Data Source: Economic Regulation of Heathrow and Gatwick Airports (2014-2019), February 2014

<http://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=6074>

Table 2.16: Gatwick Regulator Betas

Gatwick					
Determined By (Col 1)	Control Period (Col 2)	Betas			
		Equity		Asset	
		(Col 3)		(Col 4)	
		Low	High	Low	High
Civil Aviation Authority	April 2008 - March 2013	1.00	1.30	0.80	
Civil Aviation Authority	April 2014 - December 2019	1.13		0.56	

Data Source: Economic Regulation of Heathrow and Gatwick Airports (2014-2019), February 2014
<http://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=6074>

Table 2.17: Dublin Regulator Betas

Dublin					
Determined By (Col 1)	Control Period (Col 2)	Betas			
		Equity		Asset	
		(Col 3)		(Col 4)	
		Low	High	Low	High
NERA Estimated	2006 - 2009	1.40		0.70	
NERA Estimated	2010 - 2014	1.20	1.40	0.60	0.70
Commission of Aviation Regulation	2015 - 2019	-	-	0.50	0.60

Data Source: Maximum Level of Airport Charges at Dublin Airport, dated 07 October 2014.
<https://www.aviationreg.ie/fileupload/2014final/2014%20Final%20Determination.pdf>

2.5. Sensitivity of Betas – Indian Scenario

What are the real risks? From a CAPM perspective, the only real risk is demand risk, i.e., the airport's exposure to the macroeconomic conditions. Beta measures this exposure. The absence of listed airport assets in the Indian market prevents us from assessing this exposure in a direct manner. However, given passenger volumes are key drivers of revenue for airports, an indirect approach is to measure the sensitivity of growth in passenger volumes to market returns. In order to understand this, we regressed the monthly growth

rate in passenger volumes for HIAL on the monthly returns for the Indian stock market. The passenger growth rate can be viewed as a proxy for the demand driver for HIAL. The stock market return captures the fluctuations in macroeconomic conditions. A high value of the slope from this regression would indicate high exposure of HIAL to demand risk and vice-versa. We found very low regression coefficients (~ 0.3), thus indicating that the demand for HIAL is relatively inelastic and highly constrained by supply under normal circumstances. Appendix 3 details the methodology and results of this analysis.

2.6. Conclusion

In this chapter, we saw the regulatory framework of various airport regulators across the world with a focus on CoE. The key takeaways are as follows:

- All of them use CAPM as a method to estimate CoE but none mandate it.
 - Only Dublin uses a complicated model based on operational metrics/ad hoc assumptions.
- D/E ratios are not mandated, however, the actual D/E ratios using shareholders' fund and paid-up equity range from 43.75% to 81.33%.

Next, we identified airports that were closest to HIAL w.r.t. operations, ownership structure and till. Then, we studied these comparable airports for any lessons for Indian airports in general, and HIAL. A valuable lesson to be drawn is that CAPEX requirements can be addressed through the open market route. Also, we concluded that while other airports are in a mature or saturated phase, Indian airports are still in a growth phase with high potential. Furthermore, this argument is strengthened by the demand analyses of Indian airports. Also, we looked at other sectors like road and power and how InVITs is helping cash flows.

Given we have now identified our comparables' set, we are all set to go ahead with CoE estimation for HIAL. As we have established the distance of these airports, we evolve methodologies to impute the betas for HIAL. The next chapter is devoted to establishing these estimates and determining CoE and providing an illustrative example for FRoR computation.

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Chapter 3 – Determination of Cost of Equity and Fair Rate of Return

Airport regulators world over use the Capital Asset Pricing Model (CAPM) to estimate the Cost of Equity (CoE) for their private operators. Further, these costs are estimated in blocks of time period keeping in mind the current macro-economic realities as well as operational requirements. This is true of AERA as well. It is done for 5 years “Control Periods”. The current control period for HIAL ends on 31.03.2021 and the next 5 years’ control period is from FY2021-22 to FY2025-26. In this chapter, we estimate the CoE and provide an illustrative example of FRoR computation for HIAL. As highlighted in chapter 2, we identified 6 international airports that were very similar to HIAL in terms of their operations, funding mechanism and till structures and studied them in detail. Further, we also highlighted the pertinent lessons for Indian airport operators and regulators therein.

First, we revisit the CAPM methodology and state the assumptions and the relevance therein. Next, we elaborate on the process of obtaining the individual components of CoE, viz., betas (assets as well as equity), risk-free rate and the Equity Risk Premium (ERP). Finally, we provide an illustrative example of the CoD and FRoR computation.

3.1. Capital Asset Pricing Model

The Capital Asset Pricing Model was developed in the 1960s by Sharpe³⁰ (1964) and Lintner (1965).³¹ It can be used to estimate a project’s cost of capital, which is the expected rate demanded by potential investors. The cost of capital is used to assess the value of risky cash flows from investment projects made by businesses. According to the CAPM, the project’s cost of capital is linearly related to a measure of project risk (known as beta), which essentially captures the sensitivity of the project’s cash flows to the state of the economy. The greater is the sensitivity, the greater is the risk faced by potential investors and the greater is the expected return of these investors, or the cost of capital. Thus, estimating the

³⁰ Sharpe, William F. 1964. Capital asset prices: A theory of market equilibrium under conditions of risk. *Journal of Finance* 19 (September): 425–42.

³¹ Lintner, John. 1965. The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets. *Review of Economics and Statistics* 47 (February): 13–37.

beta of the project is required to estimate the cost of equity. Equation 1.1 (**highlighted below**) is used to compute the Cost of Equity (CoE).

$$CoE = R_f + \beta_E (R_M - R_f),$$

where

CoE = Cost of Equity

R_f = Risk-free rate.

$R_M - R_f$ = Equity Risk Premium (ERP).

β_E = Equity beta.

Assumptions

- Homogeneous expectations (distinguishes from portfolio theory)
- Quadratic utility or multivariate normality of returns
- Rational, risk-averse investors
- Perfect capital markets
- Unrestricted short selling
- Borrowing and lending at the riskless rate

Relevance of CAPM

The empirical validity of the CAPM has been debated by academics and researchers.^{32,33} However, it is by far the most widely accepted by business practitioners to determine the cost of capital.

³² Fama, Eugene F., and French, Kenneth R.; 1992. The cross-section of expected stock returns. *Journal of Finance* 47 (June): 427–65.

³³ Jagannathan, Ravi, and Wang, Zhenyu. 1993. The CAPM is alive and well. Research Department Staff Report 165. Federal Reserve Bank of Minneapolis

Discussion Summary on Estimation Approach

- *While the CAPM is a theoretical model based on assumptions that do not necessarily hold in the real world, its simplicity and intuitive appeal have made it the on-going favorite model for determining cost of equity in any market-based economy. Our procedures for determining Cost of Equity using the Capital Asset Pricing Model are consistent with the best practices adopted by international airport regulatory authorities and by regulatory authorities across the world for a wide range of utilities (Table R1, Ch. 2).*
- *In particular, the CAPM says that the cost of equity should be related to demand (or business) risk, as measured by correlation of a firm's stock returns with the returns on the market portfolio. More importantly, the CAPM points out that idiosyncratic difference in firms should NOT affect the cost of equity because investors in a market-based economy hold portfolios rather than individual assets and thus are able to diversify away the idiosyncratic risk exposure. In short, idiosyncratic factors (e.g., airport specific factors) do not affect the estimation of cost of equity when using the CAPM methodology.*
- *Furthermore, it is important to note that "true-up" of costs afforded to Indian airports shields them from demand risk; this is a feature that indicates that Indian airport operators (under the PPP arrangement) face low systematic risks and in that sense, developed country airports can also be used as benchmarks while estimating asset beta.*
- *Given the conceptual underpinnings of CAPM (as pointed out above), the standard approach is to find a comparable set of airports and impute a cost of equity based on the betas for a comparable set of firms. Our approach accounts for ownership structure, operational scale, revenue till arrangement while identifying the "optimal" mix of comparable airports. Thus, comparable airports that are more proximate to HIAL are given more weightage when averaging the asset betas of comparable airports to estimate the asset beta of HIAL. This procedure essentially implies that the proximity-score weighted average asset beta of comparable firms mimics a tracking portfolio of firms that provides the best proxy for the systematic risk inherent in HIAL.*
- *In summary, we use a procedure that is consistent with the application of the CAPM and which accounts for key differences in ownership, funding, and operation scale. Our approach is also unique in that it is driven by actual data considerations rather than plausible motivations for drivers of cost of equity.*

3.2. Methodology for CoE Estimation

As seen in section 3.1, we need three components to estimate the CoE using CAPM. These components are the risk-free rate (R_f), equity beta and the equity risk premium (ERP). R_f and ERP are mostly macro-economic in nature and thus one can rely on time-series data to estimate these variables. However, determining the equity beta is more challenging, especially for unlisted companies such as HIAL. As will be discussed in section 3.2.1, we overcome this issue by using a set of comparable airports. We use the R_f that is available from public sources. For determining ERP , we combine our own estimates for ERP (study by Anshuman, Biswas, Jain and Sharma, 2019) with the ERP estimates from Grant Thornton and Damodaran.³⁴ For the purpose of illustration, we estimate the cost of Debt (CoD) of HIAL by determining the cost of debt for infrastructure firms that have issued debt with a similar credit rating as HIAL.

The control periods for DIAL and MIAL are slightly staggered from that of BIAL and HIAL. To maintain consistency in the cost of equity estimates across the four major PPP airports, we have used the same time-period to estimate of ERP and risk-free rate for BIAL and HIAL as used for DIAL and MIAL. This consistency in approach for the four major PPP based airports is advisable given that there is transient variation in equity risk premium which can differentially impact the cost of equity of these airports.³⁵

3.2.1. Methodology Summary

Now that we have the set of comparable airports and computed their respective Proximity Distance Scores w.r.t. HIAL (sec 2.2), we can now move on to estimating the Cost of Equity (CoE) and providing an illustrative example of Fair Rate of Return (FRoR) computation. Here are the steps involved in the process:

1. Unlever the betas of listed Comparable Airports (secs 3.2.32 and 3.3.2)

³⁴ Anshuman, Biswas, Jain, and Sharma (2019); Predictability of Equity Risk Premium in India.

³⁵ For instance, the market fell by around 30% in the first three months and then recovered the entire loss by the end of the year. These large fluctuations are unprecedented and related to the Covid crisis. ERP estimates fluctuate between 5.2% to 7.2% over 2020 depending on time at which it is estimated.

2. Next, we estimate Asset Betas for HIAL (secs 3.2.3 and 3.3.3) with Proximity Distance Scores (sec 2.2) as inputs
3. Then, we re-lever Asset Betas to get Equity Betas for HIAL (secs 3.2.4, 3.3.4 and 3.3.4) with Target Gearing Ratios (sec 3.3.4) as inputs
4. Next, we obtain the **CoE (sec 3.3.9)** using Equity Risk Premium or ERP (sec 3.3.6) and Risk Free Rate (sec 3.3.9) as inputs
5. Finally, we illustrate the computation of the **FROr (sec 3.3.9)** with Cost of Debt (CoD) as an input (sec 3.3.7). Please note that this computation is for illustrative purpose only as CoD is time sensitive. The CoD must be estimated based on information available at that point in time in future. The entire process is summarized as a flowsheet in [Appendix 4](#).

3.2.2. Un-levering the Betas of the Listed firms in the Comparable Airports' Set

The comparable set consists of 6 airports – viz. Auckland, Airports of Thailand (AoT), Dublin, Gatwick, Malaysia Airports Holdings Berhad (MAHB) and Sydney. For AoT, MAHB and Sydney, which are listed airports, we can compute equity betas based on market data. We use the following methodology to estimate the asset betas from the equity betas:

- Estimate the equity betas for listed airports from our comparables' set through a regression of returns of these stocks on the returns of the relevant market index using data from Bloomberg.
- Un-lever these equity betas to find the corresponding asset betas using Equation 3.1.

$$\beta_A = \frac{\beta_E}{[1 + (1 - T_C) * \frac{D}{E}]}$$

Equation 3.1 – Unlevering Betas

where

β_A = Asset Beta,

β_E = Equity Beta,

T_C = Marginal Tax Rate,

D/E = **Actual** Market Debt to Equity Ratio

Dublin and Gatwick airports are unlisted but have estimates for asset betas from their respective regulators. Auckland airport is a listed airport, and its beta can be estimated from market data, but the New Zealand regulatory authority has assigned a specific value for the Auckland Airport asset beta after extensively analyzing market data and other airport-specific information. In this case, we give preference to the regulator assigned asset beta because it is based on a comprehensive study.

3.2.3. Estimating Asset Betas for HIAL

Next, we estimate the asset betas for HIAL by two (2) different methods, viz.:

1. Equal weighted average of these 6 airports' asset betas
2. Weighted average of these 6 airports' asset betas. The weights are the inverse proximity score from HIAL using Equation 3.2.

$$\beta_A = \frac{\sum_{k=1}^6 \left(\frac{\beta_k}{PS_{k,H}} \right)}{\sum_{k=1}^6 \left(\frac{1}{PS_{k,H}} \right)}$$

Equation 3.2 – Weighted Avg. Betas

where

β_A = Unlevered Asset betas for HIAL

β_k = Unlevered asset betas for comparable airports, k , viz. MAHB, Sydney, AoT and Regulator estimated Asset Betas, for Auckland, Gatwick, and Dublin airports.

$PS_{k,H}$ is the proximity score of the comparable airport, k , with respect to HIAL.

The proximity score weighted (PSW) betas represents a more refined estimate of the true asset betas in contrast to the equally weighted counterpart as it incorporates the degree of similarity between HIAL and the airports in the comparable set.

3.2.4. Re-levering the HIAL's Asset Beta to get Equity Beta

We estimate equity beta for HIAL by re-levering the asset beta assuming a **Target** market Debt to Equity (D/E) ratios using Equation 3.3.

$$\beta_E = \beta_A * [1 + (1 - T_C) * \frac{D}{E}]$$

Equation 3.3 – Re-levering Betas

where

β_A = Asset Beta,

β_E = Equity Beta,

T_C = Marginal Tax Rate,

D/E = **Target** Market Debt to Equity Ratio

3.2.5. Cost of Equity and FRoR

With all components of CoE now available, we can compute the CoE using the CAPM equation. Once we have CoE, we can also compute FRoR using the Equation 3.4.

$$FRoR = (R_D * g) + R_E * (1 - g)$$

Equation 3.4 – Fair Rate of Return

where

g = Target Debt to (Debt + Equity) Ratio

R_D = **Cost of Debt**

R_E = **Post-Tax Cost of Equity**

Apart from CoE, the Cost of Debt (CoD) is the key components of Equation 3.4. The Cost of Debt (CoD) is estimated as the coupon rate for bonds issued with similar credit ratings as HIAL.

The entire process flow with relevant sections numbers is showcased in [Appendix 4](#).

3.3. Results and Discussion

Below, we present all the relevant results leading up to the computation of CoE and FRoR. We start with shortlisting of airports for beta computations followed by asset and equity betas for them. This is followed by a section on Cost of Debt and finally the CoE and FRoR.

3.3.1. Shortlisting Relevant Airports for Asset Betas for HIAL

The comparable set consists of six international airports. Of these, three airports, Sydney, MAHB and AoT are listed companies with traded stocks. Listed airports are chosen to ensure that their equity betas are readily available for computation using price data from a commercial source like Bloomberg. The asset betas for these airports are computed from the estimated equity betas. For the other three airports, Auckland, Gatwick and Dublin, the country regulatory authorities have provided direct estimates of asset betas for the forthcoming control periods.

3.3.2. Results Related to Estimating Asset Betas of Airports in the Comparable Set

We estimate the asset betas for 6 airports (AoT, Auckland, Dublin, Gatwick, MAHB and Sydney) from the comparable set. For three of these airports (AoT, MAHB and Sydney), we use price data to estimate their equity betas and adjust for leverage to calculate their asset betas. For the other three airports (Auckland, Dublin, and Gatwick), we rely on the estimates of asset beta provided by the relevant regulatory authorities. Table 3.1 shows the equity and asset betas of AoT, MAHB and Sydney. The equity betas are obtained from Bloomberg and corresponding asset betas are estimated by un-levering using Equation 3.1. As highlighted, the asset betas range from 0.40 for Sydney to 0.86 for AoT. Table 3.1 shows the regulator estimated asset betas of Auckland, Dublin, and Gatwick. As highlighted, the asset betas range from 0.55 for Dublin to 0.60 for Auckland.

Table 3.1: Asset and Equity Betas for 3 Comparable International Airports

Note: The equity betas are directly sourced from Bloomberg. The asset betas are computed as $\beta_A = \beta_E / [1 + (1 - T_c) * D/E]$ (Equation 3.1). *** Indicates a 99% statistical significance level of beta estimate.

Airport (Col 1)	Equity Beta³⁶ (Col 2)	Marginal Tax Rates³⁷ (Col 3)	3-Year Avg. Market Debt Equity (Col 4)	Asset Beta³⁸ (Col 5)
Sydney	0.5641***	30.00%	0.5859	0.4000
MAHB	1.0573***	24.00%	0.4927	0.7693
AoT	0.8895***	20.00%	0.0456	0.8582

Data Sources: Bloomberg for Equity Betas; Deloitte Inc. for marginal tax rates

Table 3.2: Regulator Estimated Asset Betas for 3 Comparable International Airports

Regulator		
Airport (Col 1)	Asset Beta (Col 2)	Reference (Col 3)
Auckland	0.60	Table 2.14
Dublin	0.55*	Table 2.17
Gatwick	0.56	Table 2.16

*The regulatory authority has provided two estimates: a low asset beta and a high asset beta. We use the simple average of the low asset beta (0.50) and the high asset betas (0.60), i.e., 0.55.

3.3.3. Results Related to Estimation of Asset Betas for HIAL

Using the methodology described in section 3.2.1, we first computed the asset betas for HIAL using two different techniques, viz. equally weighted and proximity score weighted (Equation 3.2). As discussed earlier as well, the proximity score weighted (PSW) beta better represents the true asset beta as compared to the equally weighted counterpart as they account for the similarity between the Indian airport and the airport in the comparables' set.

³⁶ Source: Bloomberg data from 2016 – 2018 weekly returns

³⁷ <https://www2.deloitte.com/global/en/pages/tax/articles/global-tax-rates.html>, as viewed on 28 Feb 2020

³⁸ $\beta_A = \beta_E / [1 + (1 - T_c) * D/E]$ – Equation 3.1

Table 3.3: Asset Betas for HIAL.

Equally weighted is simple average of comparables' asset betas. PSW is the weighted average of the asset betas with the weights being the (inverse) Proximity Score of the airport (Equation 3.2).³⁹ The proximity score weighted (PSW) beta is a more refined estimate that accounts for airport-specific information.

	Equally Weighted Average Asset Beta	Proximity Score Weighted Average Asset Beta
HIAL	0.6229	0.573552

Recommendation (Proxy for Asset Beta of HIAL)

- *We discussed the two different ways to compute proxies for assets betas of HIAL. Our recommendation based on the proximity score weighted beta estimate is more reliable. The equally weighted approach is useful only when the comparable set of airports is picked from the same environment.*
- *Statistically speaking, if the sample consists of observations from different distributions with different population means, taking a simple statistic like the sample average will be biased. In such cases, a weighted average rather than a simple average in which the weights recognize the degree of difference between the sample observation and the relevant population distribution is considered. Our proximity score weighted beta approach accounts for the “closeness” of the comparable airports to HIAL.*
- *The recommended asset betas for HIAL is **0.573552**.*

3.3.4. Re-levering Asset Betas of HIAL

Re-levering the asset betas to estimate the equity betas for HIAL is done by assuming a target gearing ratio using Equation 3.3. In Table 3.4, one can see the gearing ratios employed by different international airports for computing the weighted average cost of capital (WACC) in column (2). The column (3) shows the average 5-year book debt to equity ratio (based on paid-up equity capital, as has been done in the case of HIAL). It is evident that the gearing

³⁹ $\beta_A = \frac{\sum_{k=1}^6 \left(\frac{\beta_k}{PS_{k,H}} \right)}{\sum_{k=1}^6 \left(\frac{1}{PS_{k,H}} \right)}$ (Equation 3.2 – Weighted Avg. Betas)

ratio is significantly lower than the book debt to equity ratio for all international airports.⁴⁰ The average gearing ratio is 48% but the 5-year average of the book debt to equity ratio is 83%. Further, we plotted the best-fit linear trend between these two variables, as shown in the chart below. We can see that R-square is virtually 0 suggesting that the two variables are unrelated. Furthermore, both the economic and statistical relation between the two variables is negligible. The coefficient is virtually 0 and the t-stats are also insignificant.

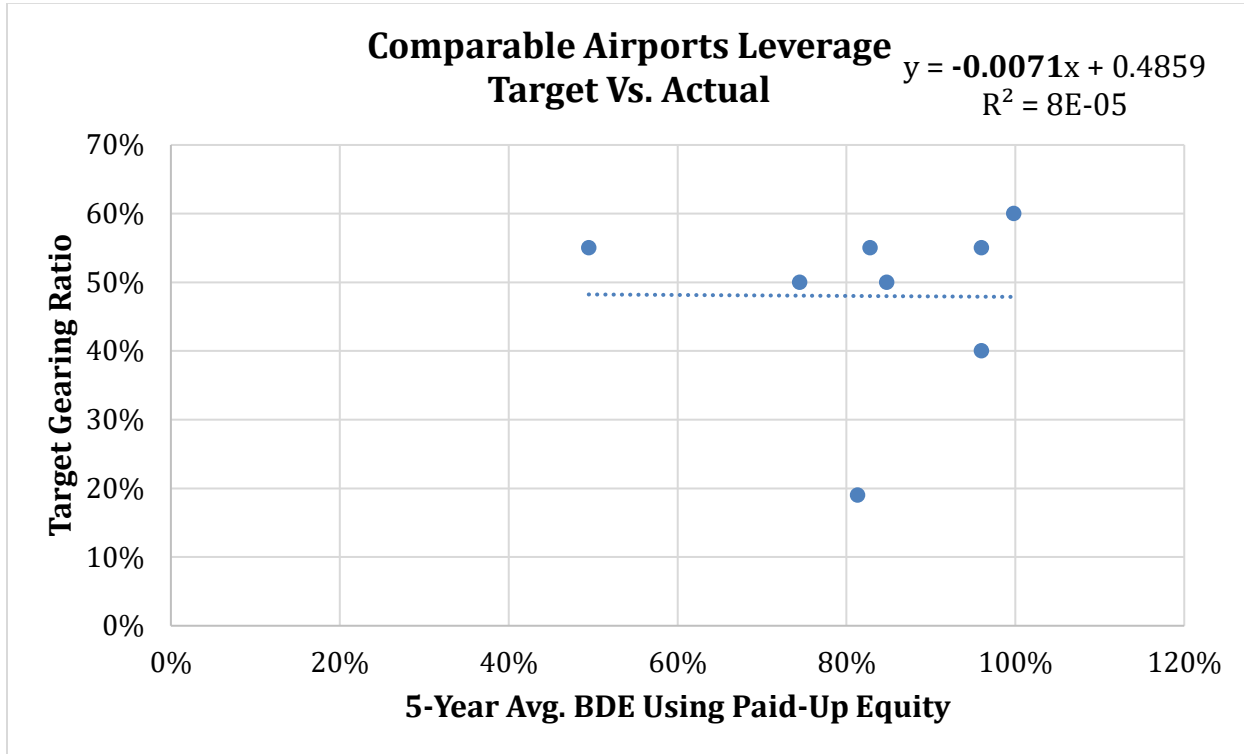
⁴⁰ We were able to use a larger comparable set of international airports – this gives us more confidence in the estimates.

Table 3.4: Target Gearing Ratios

Airport	Target Gearing Ratio	5-Year Avg. BDE based on Paid-Up Equity (based on Share Holder Fund)	Citation	Source
(Col 1)	(Col 2)	(Col 3)	(Col 4)	(Col 5)
Auckland	19.00%	81.33% (28.61%)	Review of Auckland International Airport's pricing decisions and expected performance (July 2017 – June 2022), November 2018, Pg. 97, Table A1.	https://comcom.govt.nz/regulated-industries/airports/projects/review-of-price-setting-event-3#projecttab
Heathrow	60.00%	99.79% (83.41%)	UKRN, Cost of Capital – Annual Update Report, June 2018, Pg. 11, Table	https://www.ukrn.org.uk/wp-content/uploads/2018/11/2018-UKRN-Annual-WACC-Summary-Update-v2.pdf
Gatwick	55.00%	82.79% (80.14%)	UKRN, Cost of Capital – Annual Update Report, June 2018, Pg. 11, Table	https://www.ukrn.org.uk/wp-content/uploads/2018/11/2018-UKRN-Annual-WACC-Summary-Update-v2.pdf
Sydney	55.00%	49.48% (72.00%)	Pricing Proposal 2016-2021, Pg. 16, Table 9	http://www.airservicesaustralia.com
Melbourne	55.00%	95.96% (75.78%)	Pricing Proposal 2016-2021, Pg. 16, Table 9	http://www.airservicesaustralia.com
Dublin	50.00%	84.75% (48.26%)	Commission for Aviation Regulation, Maximum Level of Airport Charges at Dublin Airport 2014 Determination, Pg. 90, Para 7.118.	https://www.aviationreg.ie/regulation-of-airport-charges-dublin-airport/2019-determination.841.html
MAHB	50.00%	74.46% (43.75%)	MAVCOM Aeronautical Charges Framework, October 2018, Pg. 26, Table 9. (Is 40-60%, but a mid-point average of the two taken)	https://www.mavcom.my/wp-content/uploads/2018/10/181019_Aeronautical-Charges-Framework-Consultation-Paper-Final-1.pdf
Amsterdam	40.00%	95.98% (34.52%)	Amsterdam Airport Schiphol Operation Decree, 2017, WACC - Part C of Appendix to Article 32, Pg. 19.	https://www.schiphol.nl/en/download/b2b/.../1T8kLVjBBmOiaKqOO4WC0K.pdf
Average	48.00%	83.07% (58.31%)		

Fig 3.1: Regression Results for Market D/E (MDE) vs. Book D/E (BDE) for Listed International Airports

From the data in Table 3.4, we regress the Target Gearing Ratio for the comparable set as a function of their Actual 5-Year Average Book D/E (2013 – 17) period.



There is a good reason to use a lower target gearing ratio rather than the gearing ratio suggested by the debt to book-equity values. First, the WACC should reflect a long-term steady state gearing ratio which may not be reflected in the current gearing ratio. Second, the WACC is supposed to be determined using market value weights for debt and equity. Since equity values tend to rise over time, it is typically the case that market value based debt to equity ratios will be much lower than book debt to equity measures. While the airports do not explicitly mention this factor as a reason for using lower target gearing ratios than that suggested by book ratios, we believe that this factor could be a significant reason.

To get additional confirmation, we consider the four airports for which we have listed equity securities and estimate the 5-year average of the market debt to equity ratio. The 5-year average leverage using market capitalization (MDE) for the comparable set of listed airports (AoT, Auckland, MAHB and Sydney) is equal to 0.3503 (D/E) or 25.94% (D/D+E). These

figures are also much lower than book debt to equity ratios. Given these findings, we can be reasonably assured that the low gearing ratio of the international airports is consistent with the idea that market-based debt to equity ratios should be used in computing the cost of capital.

As an additional benchmarking exercise, we also estimated the relation between the market debt to equity and the book debt to equity ratio of a typical infrastructure firm in India. To estimate the relation between market debt to equity ratio and book debt to equity ratio, we first regressed MDE on BDE for various infrastructure companies, using price data for 37 listed infrastructure companies over the recent 5 years. In other words, we estimated the following empirical relation between the two variables, under the restriction that the intercept is 0.

$$MDE = f * BDE$$

Equation 3.5 – BDE/ MDE Relation

where f is the regression coefficient.

The total valid data points in the clean sample were 121. The filters used to remove outliers in the data were an upper cap of 5 for BDE (equivalent of BDE 83:17) and a lower bound of 0 (no debt). Table 3.5 shows details of data for a total of 37 infrastructure companies, which have 121 market debt equity data points for 5 financial year end (2014-2018) that are regressed against the book debt equity (since these 37 companies were not traded over the entire 5-year period, the number of data points does not exactly match that from a 5-year period). A detailed table of such companies can be found in Appendix 2.

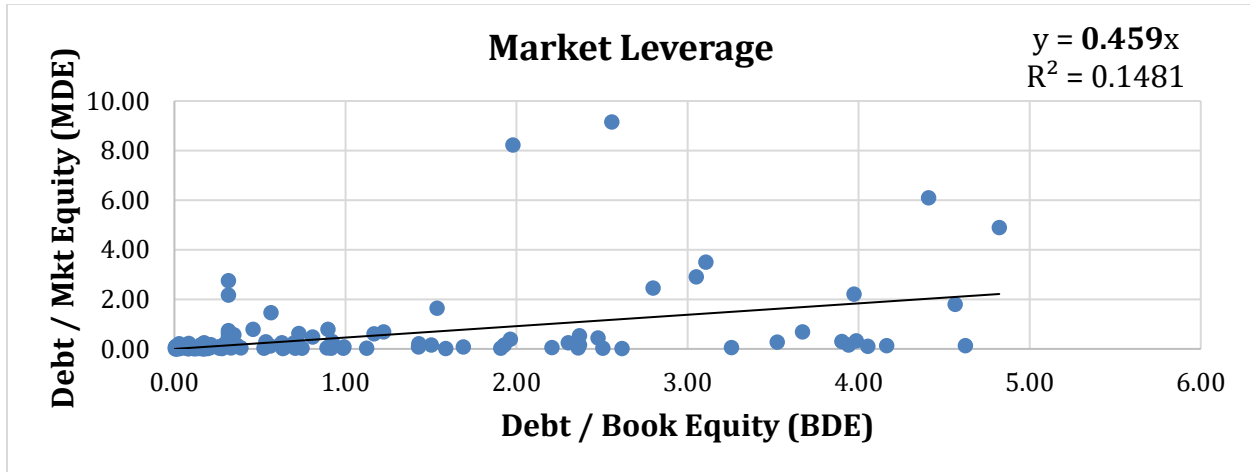
Table 3.5: Number of Infra Companies for MDE to BDE Relation

Availability of Leverage Data (No. of Years) (Col 1)	No. of Companies (Col 2)	Data Points (Col 3)
5	13	65
4	4	16
3	7	21
2	6	12
1	7	7
Total	37	121

We use this regression coefficient to impute the MDE for HIAL by using the BDE of HIAL. Fig 3.2 and Table 3.6 highlight the results.

Fig 3.2: Regression Results for Market D/E (MDE) vs. Book D/E (BDE) for listed Indian Infrastructure Firms

We regress Market D/E (MDE) for 37 listed Indian infrastructure stocks as a function of their Book D/E over the 5-year (2013–17) period, forcing intercept to 0. The slope gives the typical multiple for converting a given BDE to the corresponding MDE. Hence, $MDE = f \cdot BDE$; where m is the slope. It turns out to be 0.459 in this case.



Data Source: CMIE Prowess Equity Database

Table 3.6: BDE vs. MDE regression results for listed Indian Infrastructure Firms.

We regress Market D/E (MDE) for 37 listed Indian infrastructure stocks as a function of their Book D/E over the 5-year (2014–18) period, forcing intercept to 0. The slope gives the typical multiple for converting a given BDE to the corresponding MDE. As seen from the table, the slope is significant at 99% CI.

	Coeff.	Std Error	t Stat	p-value	Lower 99.0%	Upper 99.0%
	(Col 1)	(Col 2)	(Col 3)	(Col 4)	(Col 5)	(Col 6)
Intercept	0	N/A	N/A	N/A	N/A	N/A
MDE/ BDE (slope)	0.459	0.072	6.382	4.17E-09	0.271	0.648

The MDE/BDE ratio is the slope and conversion multiplier. As observed from Fig 3.2 and Table 3.6, the relationship turns out to be given by:

$$MDE = 0.459 * BDE$$

Equation 3.6 – MDE/BDE (Actual)

Now, assuming a BDE of 2:1, we can infer that the market debt to equity ratio can be estimated as $0.459 * 2 = 0.918$ for a typical infrastructure company in India. This number translates into a gearing ratio of 47.86%, a number that is reasonably close to the average gearing ratio of the set of comparable international airports.

The two independent approaches to assessing the gearing ratio based on market price data provide confidence to us that setting the gearing ratio for HIAL on the basis of the average gearing ratio of a set of comparable international airports will be a procedure consistent with global best practices.

Discussion/Recommendation for Gearing Ratio

- *The target gearing reflects a long-term steady state gearing ratio that is lower (and unrelated) to the current debt to equity ratio.*
- *As per valuation concepts, the gearing ratio used in calculating cost of equity should be based on market value estimates of debt and equity. The fact that the target gearing ratio is typically lower than the actual debt equity ratio is consistent with an approach that uses market value based debt to equity ratio.*
- *As a benchmark, we examined the Indian infrastructure space and found that infrastructure firms employ, on average, a market debt to (debt + equity) ratio of 47.86%. The estimate from this analysis is reasonably close to the 48% gearing ratio used on average by international airports.*
- *Firms often employ high gearing ratio in the hope of reducing the cost of capital. This perception is based on a fallacious argument. While it may seem that a higher percentage of cheaper debt capital would reduce the cost of capital, what is ignored is that the risk of residual equity in highly levered firms increases, thereby offsetting the benefits of sourcing more debt capital (in addition, the cost of incremental debt capital increases as the amount of debt increases). A target gearing ratio lower than the typical debt to equity ratio in a regulated public service discourages firms from employing excessive gearing in the hope of reducing their cost of capital. Thus, regulators often rely on a target gearing ratio to help maintain financial resilience of regulated firms in the long term – a social obligation that is critical for delivery of critical public services.*
- *We recommend that the average gearing ratio (D/D+E) of 48% can be used to a proxy for the gearing ratio of HIAL to estimate their Cost of Equity and Fair Rate of Return.*

3.3.5. Results Related to Estimation of Equity Betas for HIAL

We set the target gearing ratio for HIAL using the average gearing ratio of international airports (48%), We then re-lever the asset betas proxies of HIAL using Equation 3.3 to get the equivalent equity betas.

$$\begin{aligned}\beta_E (HIAL) &= \beta_A * \left[1 + (1 - T_C) * \frac{D}{E} \right] \\ &= 0.573552 * [1 + (1 - 0.3) * 0.9231] \\ \beta_E (HIAL) &= 0.9442\end{aligned}$$

Equation 3.7 – Equity Beta for HIAL

Discussion Summary (Equity Beta)

*With the target gearing ratio of 48%, we re-levered the proximity score weighted (PSW) asset betas using Equation 3.3 and arrived at the optimal equity beta as: **HIAL: 0.9442**.*

3.3.6. Equity Risk Premium

The ERP is an essential input in the implementation of the Capital Asset Pricing Model. It captures the additional return demanded by investors for holding equity shares in contrast to holding risk-free deposits (say in a bank in which the deposit is insured against default). It reflects the investing population's compensation for taking up equity risk.

There are various estimates of equity risk premium, depending on the methodology used and the time period considered.⁴¹ The most popular method is to use the historical risk premium as a proxy for the equity risk premium (ERP) going forward. This estimate has been found to be the best predictor of future ERP.⁴² In general, the other predictors (e.g., dividend yield, earnings to price ratio, default spread, etc.) fare worse than the historical average as a predictor of ERP. To broad base the estimation of ERP, we also consider a second methodology, namely, the implicit forward-looking ERP (also referred to as the Implied ERP) based on the current value of the stock market index. Using a simple Gordon Growth model based on dividend growth estimates, one can impute the ERP that is consistent with current valuations of the stock market. Finally, one can also rely on a survey methodology to infer

⁴¹ For instance, a recent study by Manish Saxena (*Valuation Insights: Equity Risk Premium (ERP) for Indian Market*, Grant Thornton, October 2015) has quoted ERP's ranging from 4.0% - 12.50% from various studies such as Jayant Varma & Samir Barua (2006), JM Morgan Stanley (2006), Rajneesh Mehra (2006), Banco de Portugal (2008), Morgan Stanley (2010), VC Circle (2010), ISES Survey (2011) and Goldman Sachs (2011-12). However, the studies are outdated, and their ERP estimates cannot be used for estimating Cost of Equity for Hyderabad Airport for the third control period (FY2021-22 to FY2025-26). The paper can be found at, as viewed on 28 Feb 2020:

https://www.grantthornton.in/globalassets/1.-member-firms/india/assets/pdfs/grant_thornton-valuation_insights-october_2015.pdf

⁴² Ivo Welch and Amit Goyal; A Comprehensive Look at The Empirical Performance of Equity Premium Prediction; The Review of Financial Studies / v 21 n 4 2008.

the consensus view of ERP. A third methodology is based on Damodaran's model of emerging market equity risk premium based on country risk premium.

In the first approach, we estimate ERP using the historical average of ERP over the 2000-2018 period. Asset pricing studies are typically dependent on a much longer time series to infer meaningful estimates. However, India underwent significant structural changes over time (the pre-liberalization period prior to 1990s and the advent of market liberalization during the 1990s), thus rendering prior data questionable and of lower reliability due to various exogenous reasons. Consistent with these arguments, Anshuman et al (2019) rely on data from the post-2000 period. They report a geometric mean of 7.78% as the estimate of ERP.⁴³

The choice of a geometric mean as a proxy for the ERP for long-term projects follows from the arguments stated by Damodaran.⁴⁴ The CAPM is a one-period model and arithmetic means works well only if the annual returns in the stock and bond markets are serially uncorrelated. However, stock and bond returns are serially correlated in actual data. This serial correlation is particularly important when we estimate ERP for longer horizons (say, 10 years). In summary:

- Arithmetic mean is more appropriate to use if the returns are uncorrelated.
- Geometric mean is more appropriate for longer horizons in which returns are found to be serially correlated.

Second, we rely on a study by Grant Thornton that estimates a forward-looking ERP for India. This ERP estimated is an imputed measure based on the Gordon Growth model. The inputs are market index data and estimates of dividend growth rates of stocks in the market index. The study uses Nifty market index as a proxy for the market index. The NIFTY market index consists of 50 leading Indian companies that fairly represent all the leading industry sectors in India. To estimate the forward-looking ERP, the study uses a 3-stage Gordon's Growth

⁴³ Anshuman, Biswas, Jain and Sharma, "Predictability of Equity Risk Premium in Indian Equity Markets", IIM Bangalore working paper (2019), <https://www.iimb.ac.in/node/6984>

⁴⁴ http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html Country Default Spreads and Risk Premiums as of 1 July 2020, viewed on 12 Dec 2020.

Model. In their study, for Financial Year (FY) 2018-20, the study uses a growth rate of 13% during FY 2021-25 based on the nominal GDP for India as calculated by IMF, a growth rate of 10% for the period from FY 2026 onwards, and a perpetual growth rate of 7.50% henceforth. Under these assumptions, the study estimates a forward ERP estimate of 8.00%.⁴¹

In the third approach, we try out Damodaran's methodology computing the Indian equity risk premium based on the U.S implied equity risk premium and the country default spread. The advantage of this approach is that the mature market risk premium has been derived from a much longer historical time series (1960-2018). Damodaran derives the Indian ERP by *adding* an adjustment factor that reflects the sovereign risk estimate of the Indian equity markets. To derive this adjustment factor, Damodaran employs two proxies, one based on rating of sovereign bonds and the other based on CDS spreads, and, in both cases, modifies this adjustment factor by the average ratio of equity volatility and bond volatility across emerging markets ($= 1.23$). For instance, Damodaran's estimate of ERP for India based on bond ratings is given by the following: 5.96% (mature market implied risk premium) $+ 1.23 \times 2.15\% = 8.60\%$. Damodaran's CDS based Indian ERP is given by $5.96\% + 1.23 \times (1.85\% - 0.30\%) = 7.87\%$.⁴⁵

Given these four estimates, we define the proxy for ERP in our study as the simple average of these estimates, i.e., our proxy for ERP is $(7.78\% + 8.00\% + 8.60\% + 7.87\%)/4 = 8.06\%$. This averaging procedure helps eliminate the effect of biases implicit in each of the three studies.⁴⁶

⁴⁵ The CDS for US of 30 bp has been subtracted from the Indian CDS of 185 bp to get an estimate of the adjusted CDS for India.

⁴⁶ Note that Damodaran's approach is ad-hoc and has no theoretical basis. Under a proper application of the CAPM model to a two-country setting, equity risk premium and beta should reflect expected foreign exchange appreciation (see Equation (10) in Kruschwitz, Mandi and Löffler, Business Valuation Review, March 2012 DOI: 10.5791/11-00017.1). Given these confounding issues, we rely on an averaging procedure to estimate the Equity Risk Premium.

Discussion Summary (Equity Risk Premium)

We focused on three recent studies that document the equity risk premium for India. Our primary criterion is that the estimates should be based on market data.

(i) Anshuman et al. (2019) give an estimate of 7.78% based on the historical mean, which is known to be best predictor of ERP across the world (Welch and Goyal (2008), Anshuman et al (2019)). However, the accuracy of ERP estimates also depends on the length of the sample period. The greater the duration, lower are the standard errors. Anshuman (2019) is based on a relatively shorter period (2001-2018).

(ii) Damodaran recommends two estimates: 7.87% based on CDS spreads and 8.60% based on bond ratings, which are known to be sluggish. Damodaran's estimates are based on adjusting the mature country's ERP and therefore is an indirect measure of Indian ERP that only partially reflects the Indian market price data.

(iii) The Grant Thornton report (2017) gives a forward-looking estimate of 8%. It is based on market data but is based on subjective estimates of dividend growth rates given by analysts.

Given these four estimates, each of which is subject to biases, we define the proxy for ERP in our study as the simple average of the four estimates, i.e., our proxy for ERP is $(7.78\% + 7.87\% + 8.60\% + 8\%)/4 = 8.06\%$. This averaging procedure helps eliminate the effect of biases implicit in each of the three studies.

3.3.7. Risk Free Rate

The Risk-Free Rate for a market is the yield on the safest security in that market, typically the debt issued by the Government. In this case we consider four securities issued by the Government of India. Firstly, we obtain the average yield of the 10-year Government of India (GOI) bonds over the past 18 years – 7.56%. Next, we look at the present yield on three GOI bonds – the 1-year Treasury Bill yielding 6.81%, the 3-year GOI bond yielding 7.15% and the 10-year GOI bond yielding 7.60%. Given the long-term nature of infrastructure cash flows, we use the average yield on the 10-year GOI bond (instead of the current risk-free rate) to estimate the relevant Risk-Free Rate. In asset pricing studies, it is useful to look at as a long

historical time series as possible. Given the series of significant reforms during the 90s, we considered the period 2000-2018 for both ERP and Risk-Free rate for maintaining consistency.⁴⁷

3.3.8. Cost of Debt – Illustrative Purpose only

The following section provides an estimate of the cost of debt of HIAL as an illustrative exercise. In general, cost of debt (CoD) must be estimated annually based on the latest information as of that date. The estimates developed for cost of debt in this section have no purpose other than to illustrate the computation of the Fair Rate of Return (FRoR), as discussed further down. Both the CoD and FRoR estimates in this report have no bearing on future annual CoD and FRoR estimates, which would have to be estimated based on information available at that point in time in future.

To estimate the Cost of Debt (CoD) of comparable debt instruments in India, we considered a total of 17,665 debt instruments (Debt Instruments, Commercial Papers and Certificate of Deposit) as per NSDL.⁴⁸ Of these, 709 are rated ‘AA Negative’ as per CARE, CRISIL, ICRA, Brick Work Ratings, India Ratings & Research, SME Ratings and Acuite Ratings. HIAL is rated “AA Negative” by CRISIL, as of 17 Jun 2020. The number of debt instruments issued, from 01/01/2018 till 31/12/2020 of the said rating is 264. Of these, 11 were by infrastructure companies. Table 3.7 gives the average coupon rate of these 11 instruments.

⁴⁷ The Risk Free used in this study reflects default risk and is consistent with the historical average estimate and the implied forward-looking estimates of equity risk premium but inconsistent with the estimates of Damodaran (because Damodaran’s estimates already include a default spread). However, given that under the CAPM, Damodaran’s methodology is questionable (see Kruschwitz, Mandi and Löffler, Business Valuation Review, 2012, DOI: 10.5791/11-00017.1), we use the Risk-Free Rate that is consistent with the historical average estimate and the implied forward-looking estimates of equity risk.

⁴⁸ <https://nsdl.co.in/downloadables/list-debt.php>

Discussion Summary (Cost of Debt – Illustrative Purpose Only)

- *We estimated the average yields of bonds of comparable infrastructure companies (AA bonds). The estimate was 10.05%.*
- *For illustrative FRoR calculations, we use the CoD of 10.05% for HIAL.*
- *Going forward, AERA should seek inputs from the airport operator and accordingly estimate the Cost of Debt as market conditions evolve.*

Table 3.7: Estimation of Cost of Debt (CoD) – For Illustrative Purpose only

Debt Instrument Issuer	Issue Date	Maturity Date	Coupon Rate
AP CR Development Authority	Aug-18	Aug-24	10.32%
AP CR Development Authority	Aug-18	Aug-25	10.32%
AP CR Development Authority	Aug-18	Aug-26	10.32%
AP CR Development Authority	Aug-18	Aug-27	10.32%
AP CR Development Authority	Aug-18	Aug-28	10.32%
G R Infraprojects Ltd.	Nov-18	May-22	9.68%
G R Infraprojects Ltd.	Nov-18	Sep-21	9.69%
Torrent Power Ltd.	May-19	May-24	10.25%
Torrent Power Ltd.	May-19	May-23	10.25%
Torrent Power Ltd.	May-19	May-22	10.25%
Pune Solapur Expressways Pvt. Ltd.	Sep-20	Mar-29	8.80%
Overall Cost of Debt (Average)			10.05%

Source: <https://nsdl.co.in/downloadables/list-debt.php>

3.3.9. Cost of Equity (CoE) and Fair Rate of Return (FRoR)

Using the equity betas shown in Equation 3.7, we compute the CoE using the CAPM. Here, we discuss the recommended CoE and FRoR estimates for HIAL. For the third control period

(FY2021-22 to FY2025-26), Table 3.8 shows these results. The entire process flow with relevant sections numbers is showcased in Appendix 4.

Table 3.8: Variables Used to Estimate CoE and FRoR

The re-levering is based on the following equation $\beta_E = \beta_A * [1 + (1 - T_c) * D/E]$ – (Equation 3.3 – Re-levering Betas). Also, the asset betas (β_A) used are the Equally Weighted betas (**0.6229**) for HIAL. Also, the asset betas (β_A) used are the Proximity Score Weighted (PSW) betas, **0.573552** for HIAL. The Cost of Debt (R_D) is for illustrative purpose only.

1. Asset Beta (Proximity Score Weighted) (β_A)	
HIAL	0.573552
2. Risk Free Rate (R_f)	
10-Year GOI Bonds, 18-Year Daily Avg.	7.56%
3. Equity Risk Premium (ERP)	
Simple Average of estimates from four studies	8.06%
4. Cost of Debt* (R_D)	
Estimated using 'AA' rated Debt Instruments from NSDL	10.05%

*Illustrative Purpose only. Refer section 3.3.7 for details.

Table 3.9: Estimation of Cost of Equity (CoE) for HIAL

This table summarizes the results for HIAL and highlights the 2 important variants of D/E ratios. Of these, we recommend target gearing ratio of 0.9231 or 48:52. The asset betas are the Proximity Score Weighted (PSW) weighted betas, given by $\beta_A = \frac{\sum_{k=1}^6 \left(\frac{\beta_k}{PS_{k,H}} \right)}{\sum_{k=1}^6 \left(\frac{1}{PS_{k,H}} \right)}$ (Equation 3.2). Further, these are converted to equity betas by re-leveraging using the equation $\beta_E = \beta_A [1 + (1 - T_c) * (D/E)]$ – (Equation 3.3 – Re-levering Betas). The CoE is computed using the CAPM equation, $R_E = R_f + \beta_E (R_M - R_f)$, Equation 1.1. FRoR is computed as $FRoR = (R_M * \frac{D}{D+E}) + [R_E * (1 - \frac{D}{D+E})]$, Equation 3.4.#

Airport: HIAL	Gearing Based on Target Gearing Ratio	Gearing based on MDE-Equity of BDE 2:1
(Col 1)	(Col 2)	(Col 3)
Asset Beta	0.573552	0.573552
Gearing Ratio (D/E)	0.9231**	0.9180***
Gearing Ratio (D/D+E)	48.00%	47.86%
Equity Beta	0.9442	0.9421
Risk Free Rate	7.56%	7.56%
Equity Risk Premium	8.06%	8.06%
Cost of Equity	15.17%	15.16%
Cost of Debt\$	10.05%	10.05%
Fair Rate of Return##	12.71%	12.71%

The tariff computation reflects a pass through of the annual taxes payable, thus the Cost of Equity (R_E) used in the FRoR formula is a post-tax cost of equity. Since taxes are covered by tariffs, tax deductibility of interest is irrelevant for the airport operator and the cost of debt should not reflect any interest tax shield benefits.

**Target Gearing Ratio – calculated using average suggested gearing by the regulators of 8 comparable international airports.

***Market Debt Equity equivalent of BDE using the factor 0.459.

\$Illustrative purpose only. This varies significantly depending on market conditions.

FRoR is an illustrative computation only.

Recommendations for Cost of Equity

Our final recommendation for CoE is based on the following parameters:

- *Gearing Ratio: Target gearing ratio of 48%.*
- *Risk-Free Rate of 7.56% based on the average 10-year GOI yield over 2001-2019. It is good practice to use as much historical information as possible. Prior to 2000, there were significant structural changes that were triggered by 1991 reforms, so we used the period 2001-2019 given that some degree of stability would have been obtained since 1991 reforms.*
- *ERP of 8.06% is based on an average of estimates from three studies*
- *Proximity Score Weighted (PSW) Asset Beta for HIAL: 0.573552*
- ***CoE estimate of HIAL is 15.17%***
 - *This estimate is consistent with the findings of survey-based estimates of CoE across sectors in the Indian economy. Fig 3.3 gives the sectoral CoEs for India.*

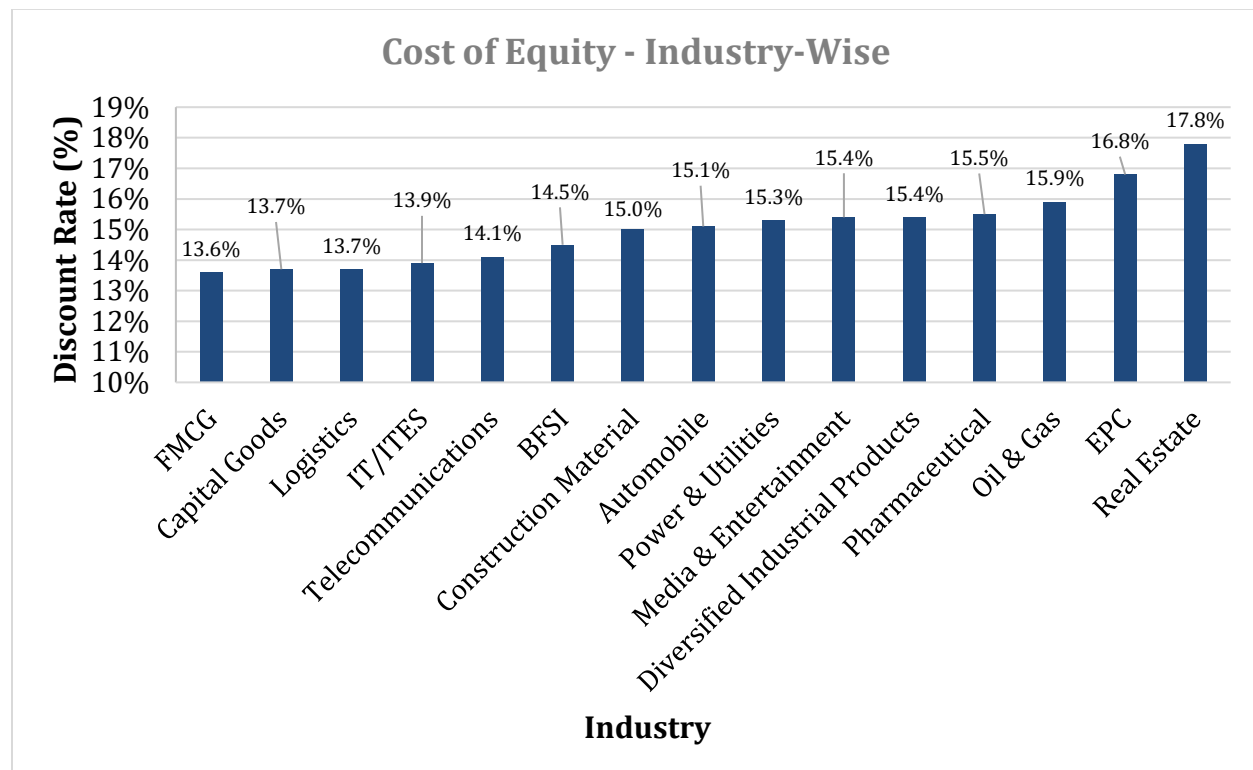
*Illustrative **FRR** estimate is based on an illustrative cost of debt of 10.05% (note that this is not a recommendation): FRR of HIAL: **12.71%***

3.3.10. Survey Estimates of Cost of Equity

The chart below presents the findings from an Ernst & Young survey on the variation of cost of equity across different sectors in India. Cost of equity varies from a low of 13.6% for the FMCG sector to 17.8% for the real estate sector.

Fig 3.3: CoE by Sector

The chart shows the sector-wise breakup of CoE in India.



Source: Navin Vohra, Cost of Capital – India Survey, 2017, Ernst & Young

3.4. Conclusion and Final Recommendation

In this section, we estimated the Cost of Equity (CoE) and provided an illustrative example of Cost of Debt (CoD) and Fair Rate of Return (FRoR) computations. First, we computed a proximity score weighted average beta of a comparable set of international airports as a proxy for the asset beta of HIAL. Next, we re-levered this asset beta into an equity beta using the recommended target gearing ratio, as determined by the average suggested gearing ratio of a comparable set of international airports. The equity beta was then used to compute the

Cost of Equity as per the CAPM. . We discussed the Cost of Debt (CoD) and FRoR using an illustrative example. The final recommendations are shown in Table 3.10.

Table 3.10: Final Recommendations

Variable (Col 1)	HIAL (Col 2)
Asset Beta based on Proximity Score	0.573552
Weights of comparable set	
Target gearing ratio (D/D+E)	48%
Target gearing ratio (D/E)	0.9231
Equity Beta	0.9442
Risk Free Rate	7.56%
Equity Risk Premium	8.06%
Cost of Equity	15.17%
Cost of Debt (CRISIL Rating) ^{\$}	10.05%
Fair Rate of Return[#]	12.71%

^{\$}Illustrative purpose only. This varies significantly depending on market conditions.

[#]FRoR is an illustrative computation only.

3.4.1. Utility for Estimating CoE (and FRoR Computations)

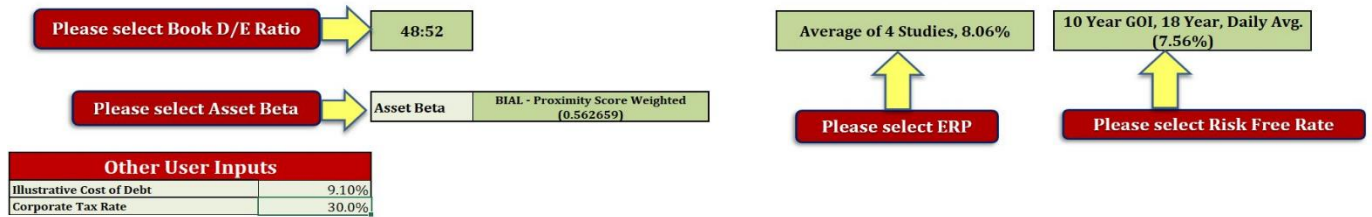
Based on varying set of assumptions, multiple other variants of CoE and FRoR are possible with varying estimates of betas, ERP, Risk-Free Rate, etc. The MS-Excel utility (AERAExcelUtility.xlsm) supplied along with this report gives all possible variants discussed in this study. It gives the CoE and FRoR based on user inputs for different variables. This section discussed the said Excel Utility. The Utility opens to the screenshot provided in Fig 3.4. As can be observed, the user has a choice of 5 variables' input, viz.

1. Target capital structure based on book D/E Ratio (BDE): This ranges from 35:65 to 85:15 with step increment of 5%.
2. Equity Risk Premium (ERP): four different choices of ERP are available:
 - a. Damodaran, 2019, (Scaled CDS) – 8.60%

- b. Damodaran, 2019, (Scaled DS) – 7.87%
- c. Anshuman et al. – 7.78%
- d. Grant Thornton, Forward Estimate – 8.00%

We employ a simple average of these 4 estimates (a-d) – 8.06%

Fig 3.4: Screenshot of User Inputs in Excel Utility



Note: **Cost of Debt** (CoD) in this fig. is illustrative only considering 2019 debts. This varies significantly depending on market conditions as discussed in section 3.3.7

Ref: AERAExcelUtility.xlsm

3. Risk-Free Rate: 4 different values of Risk-Free Rates are available:
 - a. 10-Year GOI bonds daily averaged over 18 years – 7.56%
 - b. 1-Year T-Bill – 6.81%
 - c. 3-Year GOI Bonds – 7.15%
 - d. 10-Year GOI Bonds, current (Jan 2019) – 7.6%
4. Asset Beta: As discussed, the proximity score weighted as well as the equal weighted betas is available as user input options.

Once these choices are made, the Utility automatically takes the corresponding values and displays the same.

Fig 3.5 shows the same. The results are displayed as highlighted in

Fig 3.6.

Fig 3.5: Values corresponding to the variables based on user input

Values Derived from User Choices	
Target Gearing Ratio	48.00%
Equity Risk Premium	8.06%
Risk Free Rate	7.56%

Asset Beta	0.573552
-------------------	----------

Fig 3.6: Final Output in the Excel Utility

Output	
Equity Beta	0.9442
Cost of Equity	15.17%
Illustrative Fair Rate of Return	12.71%

Note: **Fair Rate of Return** (FRoR) is an illustrative computation only and varies significantly depending on CoD as discussed in section 3.3.7

Appendix 1: Summary of ToR Relevant for HIAL Cost of Capital

1. Background⁴⁹

The Authority had determined 'Cost of Equity' for private sector in the year 2011. Now 7 years have been lapsed, hence the Authority intends to conduct the study afresh in the current scenario to perform its statutory regulatory functions.

The Cost of Capital of FRoR (Fair rate of Return) is a significant influencer when Rate of Return Regulation is the opted method of Economic Oversight. The intent of such rate of return is to embody the reasonable return expectation of ALL investors in the project. Regulatory precedents at the time of choosing such Economic Oversight in India favored the use of WACC in which the COE would be determined with the help of the CAPM model.

While other determinants such as debt and capital structure, cost of debt, leverage levels etc., are explicit or evident, it is Cost of Equity in the FRoR formula (that determines WACC), which remains the challenge.

2. Scope of Work

- a) Study of relevant environment, trends in airport capitalization
- b) Study airport-specific determinants of Cost of Capital with specific focus on Cost of Equity
- c) Recommendations on Cost of Equity
- d) Follow-on activities

3. Study of the current environment and trends in airport capitalization

Assist the Authority in:

- a) Study of capitalization structure, funding mechanisms, divestment deals reported in recent projects in Asia/Europe, investor returns and co-relation to their return models in these cases.

⁴⁹ Ref: Annexure 1 of agreement signed between IIMB and AERA on 16 Mar 2020

- b) Study recent airport asset divestment cases witnessed in PPP/Other projects in India and/or region. Understand implication of such deals on stakeholder behavior, impact on return models, passenger tariff & capital gains realized & their co-relation to FRoR & Cost of Equity & reason for absence of co-relation.
- c) Prepare an observation summary stating how and why cases from a) and b) have impacted and influenced the determinants of FRoR, in particular Cost of Equity, CAPM model and its underlying premises.
- d) Trace developments in both Business and Regulatory environment from 2009 (beginning of Airport regulation) to evaluate the impact of change in underlying assumptions for CAPM model.
- e) Study to also cover prevalent trends and developments in other regulated infrastructure intensive industries like Power, Roads, etc.

4. Study airport-specific determinants of Cost of Capital with specific focus on Cost of Equity

In the background of study detailed above, an airport-specific study should be undertaken according importance to all determinants of Cost of Capital, but specifically focusing on Cost of Equity including:

- a) **Capital Employed Structure:** Study the components of the capital employed, suitability to the airport project, its feasibility and sustainability.
- b) **Share-holding pattern:** Study the composition of shareholders, their holding period, their prevalent divestment scenario and opportunities and possible impact on Cost of Equity.
- c) **Cost of Equity:** Study the impact of the cost of equity determined for the previous control periods, suggestions for improvement, impact on the passenger fee/ aeronautical charges. Study of the scenario must also cover expectations on return or cost of equity, risk-free return, equity market risk premium, equity beta, asset beta, taxation, etc.

- d) **Dividend distribution policy:** Study the specific airport's dividend distribution policy, and application of Dividend relevance theory in determination of Cost of capital.

Other Determinants

- a) **Cost of debt:** Impact of actual cost of debt for previous control periods, variance to projections, suggestions for improvement, impact on passenger fee/aero charges.
- b) **Debt Structure, Leverage level:** Assessment of the efforts of the Airport in raising Debt via different avenues, Debt service cost reduction & negotiation efforts.
- c) **Debt standing & Market perception of the Airport/Major shareholder:** Risk profile of the Airport operator and/or its largest shareholder and consequent impact on cost of debt.

5. Recommendations on Cost of Equity

Recommendations to include:

- a) Cost of Equity – Risk-free return, risk premium and beta levels.
- b) Feasibility of adopting a normative approach with regards to the optimum capital structure and debt-equity gearing
- c) Alternative models for determination of cost of equity

6. Follow-on Activities

- a) Assist in drafting of consultation paper for determination of cost of equity and undertaking stakeholder consultations and consolidating comments received from various stakeholders, preparing clarifications on comments thereof.
- b) Assist in drafting the Order on determination of cost of equity.

Appendix 2: Set of Indian Infrastructure Companies

A data set of 37 Indian Infrastructure companies for 5 Years (2014-18) was used to establish the relationship between Market and Book Debt Equity of a company in Equation 3.6. However, not all 37 companies traded in those 5 years. The following table clearly shows which company was traded in the financial year out of such 5 years:

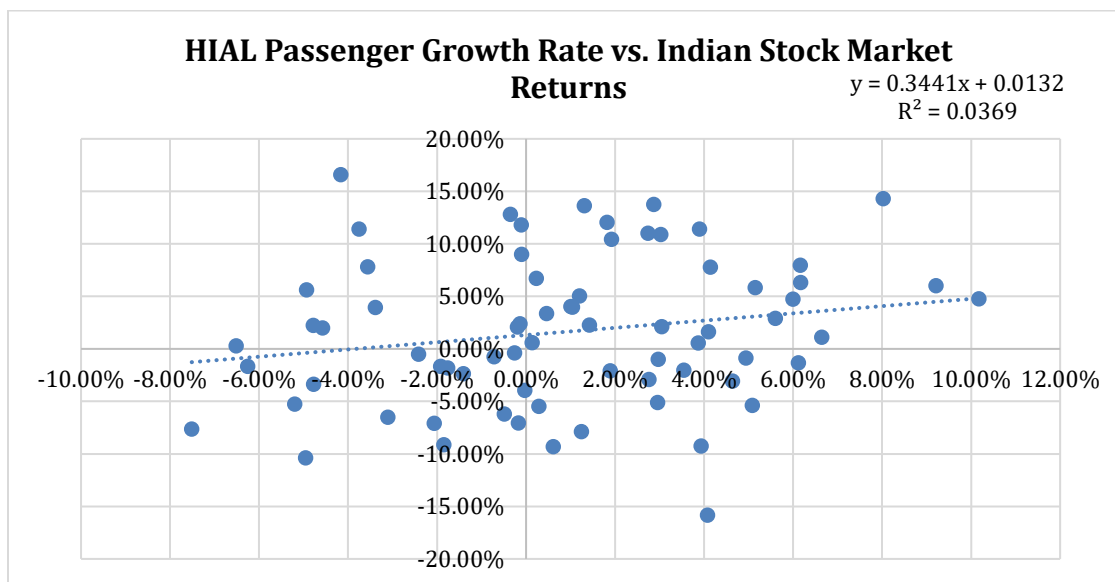
S. No.	Company Name (Col 1)	Traded in Financial Year (Col 2)	Number of years (Col 3)
1	B S Ltd.	2014 - 2018	5
2	C C L International Ltd.	2014 - 2018	5
3	G P T Infraprojects Ltd.	2014 - 2018	5
4	G T L Ltd.	2014 - 2018	5
5	I T D Cementation India Ltd.	2014 - 2018	5
6	Jyothi Infraventures Ltd.	2014 - 2018	5
7	N C C Ltd.	2014 - 2018	5
8	Nu Tek India Ltd.	2014 - 2018	5
9	P N C Infratech Ltd.	2014 - 2018	5
10	Precision Electronics Ltd.	2014 - 2018	5
11	R P P Infra Projects Ltd.	2014 - 2018	5
12	Shriram E P C Ltd.	2014 - 2018	5
13	Vishvas Projects Ltd.	2014 - 2018	5
14	Indo-Asian Foods & Commodities Ltd.	2014 - 2017	4
15	Navkar Builders Ltd.	2014 - 2017	4
16	Sadbhav Infrastructure Project Ltd.	2015 - 2018	4
17	Simplex Projects Ltd.	2015 - 2018	4
18	Excel Realty N Infra Ltd.	2014 - 2016	3
19	Gammon Infrastructure Projects Ltd.	2015 - 2017	3
20	K E C International Ltd.	2014 - 2016	3
21	M B L Infrastructures Ltd.	2014, 2016 - 2017	3
22	Marg Ltd.	2015 - 2017	3
23	Maruti Infrastructure Ltd.	2016 - 2018	3
24	Ruchi Infrastructure Ltd.	2014 - 2016	3

25	Capacit'e Infraprojects Ltd.	2017 - 2018	2
26	Essar Ports Ltd.	2014 - 2015	2
27	G M R Infrastructure Ltd.	2014 - 2015	2
28	P V V Infra Ltd.	2016 - 2017	2
29	Pratibha Industries Ltd.	2017 - 2018	2
30	Suvidha Infraestate Corpn. Ltd.	2014 - 2015	2
31	Atlanta Devcon Ltd.	2016	1
32	Dilip Buildcon Ltd.	2017	1
33	I L & F S Engg. & Construction Co. Ltd.	2014	1
34	Kalpataru Power Transmission Ltd.	2014	1
35	Prime Focus Ltd.	2018	1
36	Valecha Engineering Ltd.	2017	1
37	Yuranus Infrastructure Ltd.	2015	1

Appendix 3: Demand Function in the Indian Context

Charts 1 shows the results for HIAL. The regression comprises month-on-month stock returns from 2013–2018 to the month-on-month passenger growth rate in the same period for HIAL.

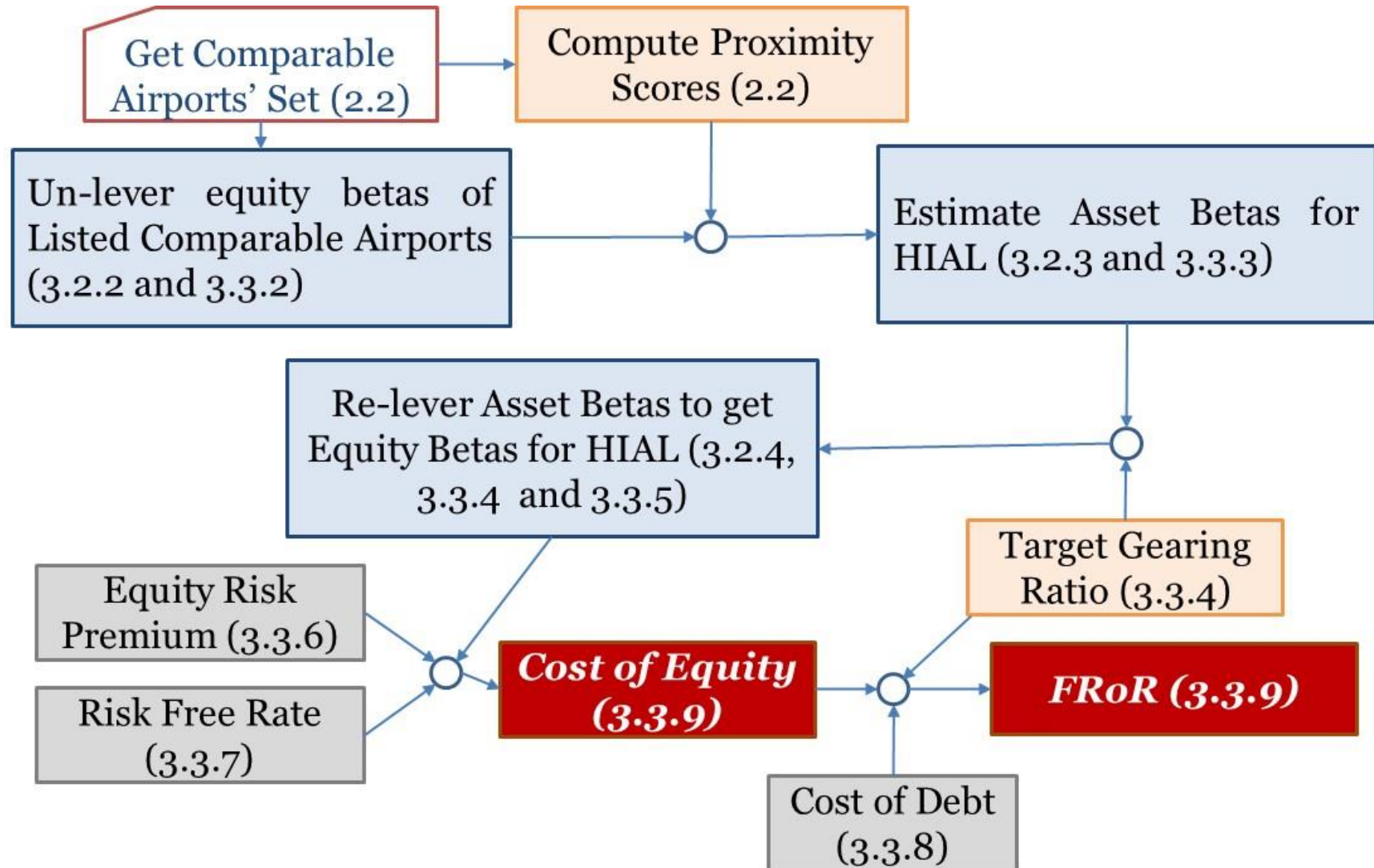
Chart 1: HIAL Passenger Growth Rate vs. Indian Stock Market Returns from 2013–2018



	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 99.0%	Upper 99.0%
Intercept	0.0132	0.0085	1.5612	0.1230	-0.0037	0.0301	-0.0037	0.0301
slope	0.3441	0.2117	1.6254	0.1086	-0.0782	0.7664	-0.0782	0.7664

As highlighted in the charts, the slope (proxy for asset beta) is ~0.34 for HIAL. However, while demand risk is low, there could be other uncertainties playing out.

Appendix 4: Flowchart to compute Cost of Equity (CoE) and FRoR*



* The numbers in bracket indicate the respective section number in the report.

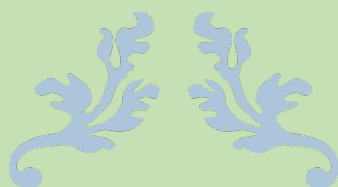
Appendix 5: Section-wise Indexing of Terms of Reference (ToR)

Clause 3a. Study of capitalization structure, funding mechanisms, divestment deals reported in recent projects in Asia/Europe, investor returns and co-relation to their return models in these cases.		
Subject	Section(s) of the Report	Comments/Caveats
Document cases on airport divestments in Asia/Europe with focus on:		
Capitalization	2.2.1	
Funding mechanism	2.2.2	
Investor returns	2.3.1	
Correlation to their return models	2.2.3	The last part of section discusses this and also does a comparative study w.r.t. Indian airports (Ref. Table 2.11 and Table 2.12.)
Clause 3b. Study recent airport asset divestment cases witnessed in PPP/Other projects in India and/or region. Understand implication of such deals on stakeholder behavior, impact on return models, passenger tariff & capital gains realized and their co-relation to FRoR & Cost of Equity and reason for absence of co-relation.		
Subject	Section(s) of the Report	Comments/Caveats
Same as 3a for Indian airport disinvestment in all respects along with	2.2.1 – 2.2.3	
Implications on stakeholder behavior	2.3.2	The case of Bangalore divestment is discussed. MIAL could not be discussed for lack of recent data
Impact on return models, passenger tariff and capital gains and their correlation to FRoR	2.2.3	Indian Airports (DIAL, BIAL, MIAL and HIAL) are compared to international comparables in terms of their IRR
Reason for absence of correlation	Last part of the section 2.2.3	Explicitly gives parameters to find the correlation and the absence currently observed (Ref Table 2.11 and Table 2.12)

3c. Prepare an observation summary stating how and why cases from a) and b) above have impacted and influenced the determinants of FRoR in particular Cost of Equity, CAPM model and its underlying premises.		
Subject	Section(s) of the Report	Comments/Caveats
1. Document Determinants of FRoR (CoE in focus) 2. Impact of 3(a) and 3(b) on the same	2.4	
3d. Trace developments in both Business and Regulatory environment from 2009 (beginning of Airport regulation) to evaluate the impact of change in underlying assumptions for CAPM model	2.1	
3e. Study to also cover prevalent trends and developments in other regulated infrastructure intensive industries like Power, Roads, etc.	2.3.3	Discusses InVITs

Subject	Section(s) of the Report	Comments/Caveats
4a. Capital Employed Structure: Study the components of capital employed, suitability to the airport project, its feasibility and sustainability	2.2.1	
4b. Share-holding pattern: Study the composition of shareholders, their holding period, their prevalent divestment scenario and opportunities and possible impact on Cost of Equity	2.2.1	Refer to Table 2.7 - Table 2.10
4c. Cost of Equity: Impact of the cost of equity determined for the previous control periods, suggestions for improvement, impact on the passenger fee aeronautical charges. Study of the scenario must also cover expectations on return or cost of equity, risk-free return, equity market risk premium, equity beta, asset beta, taxation, etc.	3.2.5 and 3.3.9	
4d. Dividend distribution policy: Study on the specific airport's dividend distribution policy, application of Dividend relevance theory in determination of Cost of capital	2.1 and 2.3.1	Fig. 2.7 and Table 2.11 and Table 2.12
4 (Others) a. Cost of debt: Impact of actual cost of debt for previous control periods, variance to projections, suggestions for improvement, impact on passenger fee/aero charges	3.3.8	
4 (Others) b. Debt Structure, Leverage level: Assessment of the efforts of the airport in raising Debt via different avenues, Debt service cost reduction and negotiation efforts	3.3.4	Table 3.4
4 (Others) c. Debt standing and Market perception of the Airport/Major shareholder: Risk profile of the airport operator and/or its largest shareholder and consequent impact on cost of debt	3.3.8	Table 3.7

Subject	Section(s) of the Report	Comments/Caveats
5a. Recommendation 1: Cost of Equity - risk-free return, risk premium and beta levels	3.4 and Excel Utility provided along with this document.	Excel utility manual is provided in section 3.4.1.
5b. Recommendation 2: Feasibility of adopting a normative approach with regards to the optimum capital structure and debt-equity gearing		
5c. Recommendation 3: Alternative models for determination of cost of equity		
6a. Assist in drafting of consultation paper for determination of cost of equity and undertaking stakeholder consultations and consolidating comments received from various stakeholders, preparing clarifications on comments thereof.	Consultations based on one-on-one interactions with AERA	
6b. Assist in drafting the order on determination of cost of equity		



**ANALYSIS OF CAPITAL
EXPENDITURE ON EXPANSION FOR
THIRD CONTROL PERIOD AT RAJIV
GANDHI INTERNATIONAL AIRPORT,
SHAMSHABAD, HYDERABAD**

EVALUATION REPORT



APRIL 2021



**rites ltd
airports division,
plot no. 144, sector 44 gurgaon**

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LIST OF ABBREVIATIONS

AERA	Airports Economic Regulatory Authority of India
AAI	Airports Authority of India
ATM	Air Traffic Movement
Goi	Government of India
GHIAL	GMR Hyderabad International Airport Limited
HIAL	Hyderabad International Airport Limited
IMG	Inter-Ministerial Group
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IRA	Independent Regulatory Authority
MARS	Multiple Aircraft Ramp System
MoCA	Ministry of Civil Aviation
MPPA	Million Passenger per Annum
Mn	Million
MYTP	Multi-Year Tariff Proposal
PPP	Public Private Participation
PHP	Peak Hour Passenger
TRB	Transport Research Board
UDF	User Development Fee
WPI	Whole sale price Index

1. INTRODUCTION

1.1. BACKGROUND

Development of New Greenfield International Airport at Hyderabad through PPP mode was awarded to Hyderabad International Airport Limited (HIAL) and the concession agreement was signed between HIAL and the Ministry of Civil Aviation (MoCA) on 20th December 2004. The Airport was commissioned in 31 months and designed for a capacity of 12 million passengers per annum (MPPA) and 1,50,000 tons of cargo handling capacity per annum. The airport was inaugurated on 14th March 2008 and started the commercial operations from 23rd March, 2008.

Salient features of the concession agreement relevant to this report are highlighted below:

- **Nature of Agreement**

Concession agreement for Development, Construction, Operation and Maintenance of Hyderabad International Airport between Ministry of Civil Aviation - Government of India and Hyderabad International Airport Limited

- **Concession**

Gol granted HIAL, the exclusive right and privilege to carry out the development, design, financing, construction, commissioning, maintenance, operation and management of the Airport (excluding the right to carry out the Reserved Activities and to provide communication and navigation surveillance / air traffic management services which are required to be provided by AAI)

- **Scope of the Project**

Development and Construction of the Airport on the site in accordance with the provisions of the agreement, Operation and maintenance of the airport and performance of the Airport Activities and Non-Airport Activities in accordance with the provisions of the agreement, performance, and fulfilment of all obligations of HIAL in accordance with the provisions of the agreement

- **Fee**

HIAL shall, in consideration for the grant by Gol of the Concession pursuant to Article 3.1, pay to Gol a fee amounting to four per cent (4%) of Gross Revenue annually on the terms specified.

- **Charges**

The Airport Charges specified in Schedule 6 (Regulated Charges) shall be consistent with ICAO (International Civil Aviation Organization) Policies. The Regulated charges set out in Schedule 6 shall be indicative charges. Prior to Airport Opening HIAL shall seek approval from the Ministry of Civil Aviation for the Regulated Charges, which shall be based on the final audited project

cost. From the date the Independent Regulatory Authority (IRA) has the power to approve the Regulated Charges, HIAL shall be required to obtain approval thereof from the IRA.

- **Term:** 30 years

The shareholding pattern of GMR Hyderabad Airport Limited as on date is as under:

GMR Airports Limited, Holding Company	-	63%
Airports Authority of India	-	13%
Government of Telangana	-	13%
MAHB (Mauritius) Private Limited	-	11%

1.2. SCOPE OF SERVICES

Post Inauguration in 2008, Hyderabad Airport has seen significant growth in passenger traffic and freight supported with the city turning into a major hub for services sector. To match the capacity of the Airport with the growing traffic, GHIAL submitted the expansion plan of terminal building and Apron facility at Hyderabad International Airport to AERA for second control period (01/04/2016 to 31/03/2021). Subsequently, AERA had appointed RITES vide letter dt. 12th June 2017 to examine the same. The report was submitted by RITES to AERA in Sept 2017. This report had discussed CAPEX proposal for increasing the capacity of the Airport from 12 MPPA to 20 MPPA.

GHIAL has now submitted the proposal for Capital Expenditure for expansion for the combined second and third control period (01/04/2016 to 31/03/2026) for enhancing the capacity of the Airport from 12 MPPA to 34 MPPA, to AERA. RITES has been engaged by AERA for evaluation of this follow up proposal vide letter dated 04th Dec 2020.

The scope of services assigned to RITES for the present study include:

- To examine the proposal of the airport and assess the need for the proposed project and its capacity/scope with reference to Passenger growth upto 34 MPPA /Cargo Volumes/Air Traffic Movement and also to suggest cost effective alternatives.
- To examine the building standards and designs proposed by the airport operator in line with IMG norms/IATA/ICAO norms.
- To analyze the reasonableness of the proposed cost with reference to the tentative ceiling decided by Authority vide order no. 7 dated 13/06/2016 based on the details of the rates and quantity as per government/industry approved norms and advise the Authority on the reasonableness of the costs.
- To review designs and specifications proposed in case the costs are assessed to be excessive where the Projects are already in progress or the contracts are already awarded. Further to examine whether proper procedures have been followed in the award of the work.
- To assist AERA in case any litigation arises in future in connection with the reasonableness of the cost estimates.

- f) To review and justify the reasonableness of time schedule of completion of work of proposed by HIAL.
- g) To perform any other duties as may be deemed necessary and specified in the award letter.

1.3. THE STUDY TEAM

The following team has been formed by RITES to undertake the assignment:

Table 1.1 RITES Team Members undertaking the assignment

SN	Name	Designation
1.	Mr. Rakesh Kapoor	Executive Director / Airports
2.	Mr. B S Sehwari	Group General Manager/Airports
3.	Mr. Abhas Kumar	Jt. General Manager/Airports
4.	Mr. Anil Aswani	Jt. General Manager/Airports
5.	Mr. V. S. Solanki	Sr. Dy. General Manager/Airports
6.	Mr. Prateek Dhillon	Manager/Airports
7.	Mr. Saurabh Pareek	Manager/Airports
8.	Mr. Vivek Rai	Assistant Manager/Airports

1.4. DATA COLLECTION

After various email communications between RITES, GHIAL & AERA on dates 09/12/2020, 16/12/2020, 31/12/2020, 07/01/2021, 22/01/2021, 01/02/2021, 16/02/2021 & 18/02/2021, the following data has been received and studied:

- Airport Expansion & Capex Proposal, Project Information File (PIF) for Airport Users Consultation, August 2018 submitted by GMR Hyderabad International Airport Limited
- Concession Agreement for the Development, Construction, Operation and Maintenance of the Hyderabad International Airport between Ministry of Civil Aviation, Government of India and Hyderabad International Airport Limited dt. 20th Dec. 2004
- Order No. 07/2016-17 dt. 13th June 2016 issued by AERA in the matter of Normative Approach to Building Blocks in Economic Regulation of Major Airports –Capital Costs Reg.
- Letter No. GHIAL/2020-21/SPG/1490 dt. 16th December 2020 by GMR forwarding the descriptions for the various elements of the project.
- General Capital Expenditure For the combined 2nd and 3rd control period.
- Bureau of Civil Aviation Security Circulars.
- Detailed airfield pavement analysis at Rajiv Gandhi International Airport Hyderabad.
- Minutes of AUCC meetings of stakeholders held on 07/10/2018 on Airport Expansion & Capex Plan GHIAL.
- Multi Year Tariff Proposal for the third control period (1st April 2021 to 31st March 2026).
- Independent Auditor's Report on the Audit of Special Purpose Financial Statements for the year ended 31 March 2020.

- Reserve Bank of India circular dt. 14/08/14 on prudential norms on income recognition, asset classification and provisioning pertaining to advances – Projects under implementation.
- Geo technical investigation report by Geo Technologies, Nov – Dec 2016
- Planned Work Schedule submitted by GHIAL.
- RGIA master plan development update report March 2018.
- Project expansion Cost summery and area statement details with PO summery.
- Final Report on Hyderabad International Airport Traffic Study by ICF Limited, March 2018.
- Master Plan Review 2016, Final Report, RGIA by Landrum-Brown, April 2017.
- Request made by various Airlines for night parking.
- Details of procedure followed in the award of major works.
- Some lumpsum details of preliminaries, insurance, Design & PMC and contingency.
- Details for considering the inflation, GST etc.

1.5. DISCUSSIONS WITH AERA

During various interactions with AERA, following have been noted:

- That, as per their assessment, traffic at the end of third control period i.e. FY 2025-26, in the Post-Covid scenario, is likely to be 26.85 MPPA. Traffic estimations by GHIAL in the Pre-Covid & Post-Covid scenarios for the FY 2025-26 have been 34 MPPA and 31.4 MPPA respectively.
- That, CAPEX requirements to be evaluated for the aforesaid three traffic scenarios.
- That, in order to optimize the CAPEX requirements for the third control period, keeping in view the reduction in traffic, possibility of shifting the proposed development /CAPEX beyond the third control period may be examined.
- That, through an email dated 07.04.2021, GHIAL has submitted certain clarifications pertaining to the updated status of award of CAPEX works, reasons for increase in IT CAPEX from Rs. 48.9 Cr for 2nd CP to 247 Cr for combined 2nd & 3rd CP and the cost of PMC & design services.

The above have been taken into consideration while evaluating the CAPEX proposal.

1.6. REPORT

This report sets out the evaluation by RITES Ltd of the need for expansion of existing infrastructure and capital cost thereof at Hyderabad International Airport on behalf of the AERA as per scope of RITES. This exercise is undertaken to assist AERA in assessment of capital expenditure. It is important to note that the findings and outputs are provisional, and that the capacity analysis is subject to consultation and refinement.

The remainder of this report is structured as follows. Section Two describes briefly the Proposal submitted by GHIAL; Section Three, Analysis of the Air Traffic; Section Four, the Governing parameters; Section Five, the Evaluation of the proposal and Section Six, the Findings.

2. PROPOSAL BY GHIAL

2.1. EXPANSION PROPOSAL

The submission made by GHIAL has been provided to RITES by AERA. The major components of the proposed capital expenses as per PIF of GHIAL include the following heads:

- **Terminal Forecourt**
 - Expansion of Airport Forecourt leading to additional space of 12,095 Sqm.
 - Provision of 8 entry gates.
 - Central opening at departure level by infilling the space between the two connecting bridges.
 - Increasing the circulation space at Airport Forecourt departure level by providing a cantilever slab on the south side of ramp.
- **Expansion of the terminal**
 - East-side expansion by 60 m, leading to additional space of 27,914 Sqm.
 - West-side expansion by 190 m, with additional space of 69,703 Sqm.
- **Pier Expansion**
 - East-side pier expansion (addl. space of 69,020 Sqm) to accommodate 16 contact stands.
 - West-side pier expansion (addl. space of 70,077 Sqm) to accommodate 17 contact stands.
- **Airside Infrastructure Augmentation**
 - Apron expansion on West-side covering an area of 237,565 Sqm for stands and access taxi provision. Construction of contact stands about 33 nos, in and around Terminal & Remote stands of about 52 nos.
 - Addition of 2 new RETs.
 - Construction of the second parallel Taxiway (Txy-B) from the existing stretch available at Cargo Stand to the full extent possible.
 - 3 lane wide tunnel linkage of about 250 m length to provide seamless connectivity between remote stands & the terminal.
- **Expansion of the approach ramp & Kerb**
 - 8 laning of the departure Ramp & 7 laning of Arrival Ramp.
 - Lengthening of the kerb to 300 m from current 210 m to correspond to a larger terminal processor building.

- Expansion of the departure & arrival approach road to Ramp from current 2 lane to 3 lanes.
- **Allied Infrastructure**
 - Construction of 3 additional fuel farm tanks of 6500 KL each.
 - An elevated flyover to cross the central roadway for the airport bound traffic from the west side.
- **Technological advancements**
 - Upgrade all the screening lane system to ATRS screening lane SBDs, Smart lighting, paper less boarding, self-bag drop, ICT Equipment/Systems, augmentation of Common facilities such as HVAC, BHS, Check-in counters, Security Screening, Toilets, PHE System, etc. as required.

The expansion proposal of GHIAL is summarized as under:

Table 2.1 Expansion Proposal of GHIAL

Capacity Requirements	Design Capacity 12 Million	Design Capacity 20 Million	Design Capacity 34 Million
Peak ATM (Approved peak movement is 33 ATM/hr)	20	34	51
Peak (Departure)	1,836	3,244	6,830
Combined peak	2,855	5,059	14,691
Arrival ramp capacity (Cars/Peak Hr.)	600	1,100	2,899
Departure ramp capacity (Cars/Peak Hr.)	1,100	2,000	3,587
Check-in Islands	2 Islands (30 Counters each)	5 Islands (30 Counters each)	7 Islands (22 Counters each)
In Line Baggage check-in counters	60	150	154
Emigration counters	22	33	48
Immigration counters	20	38	50
Total X-Ray channels required	8+4 (swing)	23	29 (ATRS)
Aircraft apron stands	42	52	101 (incl. night parking stands)
Domestic contact gates	5	17	21
International contact gates	7	12	24 (4 Nos will be swing)
Total contact stands	12	29	45
Baggage carousals/claim unit_ Intr. (90m)	2	4	6
Baggage carousals/claim units_ Dom (90m)	2	3	9 (1 will be swing)
Total baggage carousals/claim	4	7	15
Self Service/ E-boarding	NA	16 (E-gates) 10 (Self bag drop)	E-boarding: 68 E- gates-20 at entry lanes, 88 Self bag drop

Source: PIF report

2.2. CAPITAL COST PROPOSAL

The total capital cost for expansion of the airport during the second control period was estimated by GHIAL for Rs. 1989.00 Crores and for third control period it is estimated for Rs. 3486.8 Crores inclusive of insurance & permits, preliminaries, design development, PMC and contingencies during construction as per the breakup given below.

The table below shows consolidated cost estimates for the capacity augmentation from 12 MPPA to 20 MPPA and subsequently from 20 MPPA to 34 MPPA as composite project cost mentioned in PIF as submitted by GHIAL.

Table 2.2 Projected Capital Expenditure by GHIAL- Rs in Cr taken from PIF report

SN	Particulars	Estimated Capex (12 to 20 MPPA)	Estimated Capex (Incremental capacity 20 to 34 MPPA)	Total Capex (capacity 12 to 34 MPPA)	Remarks
1	Expansion of the Terminal Building	1400.9	1959.9	3360.8	Increase in Terminal Area from earlier proposed 101,175 Sqm for 20 MPPA to 248,809 Sqm for 34 MPPA along with increase in airport systems for enhanced capacity
2	Expansion of the Kerb & Approach ramp	108.5	-	149.0	Based on discovered price of the contract
3	Expansion of Apron & Taxiways	129.4	777.6	907.0	Increase in rigid apron area from earlier proposed 46,000 Sqm for 20 MPPA to 237,567 Sqm to meet additional stand requirements. Increase in earlier proposed taxiway area from 72, 734 Sqm for 20 MPPA to 464,631 Sqm for 34 MPPA on account of requirement of parallel taxiway (2350 mt), RETs and other service road. Additional cost for 3 lane wide tunnel linkage of about 250m length for connectivity between remote stands and terminal
4	Road Infrastructure	0.0	167.0	167.0	Towards 8 Laning of 5 Km stretch of Main Access Road to Departure Junction

SN	Particulars	Estimated Capex (12 to 20 MPPA)	Estimated Capex (Incremental capacity 20 to 34 MPPA)	Total Capex (capacity 12 to 34 MPPA)	Remarks
5	ICT Cost	48.9	227.5	276.4	Towards ICT Equipment/Systems
Sub- Total		1687.7	3132.0	4860.2	
6	Preliminaries	34.0	63.2	97.2	
7	Insurance & Permits	20.0	52.9	72.9	
8	Design & PMC	142.2	100.8	243.0	
9	Contingencies	105.1	137.9	243.0	
	Total	1989.0	3486.8	5516.3	

Note: The above CAPEX estimates are taken from PIF report submitted by GHIAL.

Note: In reference to above data, the GHIAL has submitted details of cost breakup of Rs. 5596.23 Crores as given below for combined 2nd and 3rd control period and the same have been considered by RITES for CAPEX evaluation.

Table 2.3 Details cost breakup of Capital Expenditure received from GHIAL

GHIAL Project Expansion

Rs Crs

SN	Particulars	Revised Budget submitted to AERA	Awarded Contract (B)							Balance to be awarded
			L&T	MW	MVR	VNC	Beumer India	Others	Total Pos issued	
		A							B	C=A-B
1	Expansion of the Terminal Building	2,658.32	2343.44					72.20	2,415.65	242.67
2	Airport Systems	1,070.00		875.04			138.32	15.67	1,029.03	40.97
3	Expansion of the Kerb & Approach Ramp	156.40				146.77		0.98	147.75	8.65
4	Expansion of Apron & Taxiways	895.66	637.73		142.70	58.98		18.11	857.55	38.13
5	Road Infrastructure	167.00				24.23			24.23	142.77
6	GSE Tunnel	82.80	82.80						82.80	-
	Sub- Total (INR Cr.)	5,030.18	3,063.98	875.04	142.70	229.99	138.32	106.96	4,556.99	473.19
7	Preliminaries , Insurance & Permits	120.1						26.51	26.51	93.59
8	Design Development & PMC	202.94						193.51	193.51	9.43
9	Contingencies	243.01						-	-	243.01
	Total	5,596.23	3,063.98	875.04	142.70	229.99	138.32	326.98	4,777.01	819.22

3. TRAFFIC REVIEW

3.1. PROJECT INFORMATION FILE OF GHIAL

The extracts of Project Information File submitted by GMR Hyderabad International Airports Ltd. for August 2018, are as under:

- The airport presently has a design capacity of 12 MPPA and cargo handling capacity of 150,000 MTPA. Over the decade, Passenger traffic has grown from 6.2 million passengers in FY2009 after the airport opened, to 18.3 million passengers in FY2018 (CAGR of 12.8%).
- Earlier in 2015, GHIAL conducted AUCC process (Stakeholder meet) for 20 MPPA expansion and the existing proposal is for 34 MPPA. During the meeting the GHIAL informed to stakeholders that in order to address the growth, the earlier plan of enhancing the capacity to 20 MPPA is revised to 34 MPPA as brought out from the study of L&B, NATS and ICF. Minutes of AUCC are attached at Annexure 1.
- GHIAL is proposing capacity expansion to 34 million to cater to the growth in its 3rd control period.
- GHIAL has relied upon the forecast of ICF Limited, UK, which projected traffic throughput of 34 million by FY2023-24 at a CAGR of 11.3%.
- In view of the projected traffic growth, GHIAL is now contemplating to increase the terminal capacity to 34 million.
- Existing passenger terminal has the capacity to handle only combined peak of 6400 PHP (peak hour passenger) (3200PHP capacity for Departure & Arrival respectively), while as per the current traffic in FY 2017-18, the combined PHP traffic has surpassed 6609 PHP.
- As per projections given in PIF, peak hour traffic shall touch 11511 PHP by FY 2020-21 and 14691 PHP by FY 2023-24.
- To cater to increased traffic and requirements of night parking, total stand requirement as per the traffic will be 101 Apron stands.
- The demand for aircraft stands would grow from current 42 Nos to 101 Nos at 34MPPA.
- Additions of 33 new contact stands are proposed with 16 in domestic and 17 in international zone. This will take overall contact gates numbers to 45 including 7 MARS stands.
- The emigration counter requirement projections indicate that the current provision of 22 counters (which include 2 supervisory counters) is constrained as per current traffic. Beyond this, we need to expand the emigration area to add minimum of 26 more counters to sustain traffic until FY2023-24.
- For catering to demand till FY2023-24, it will require to add minimum of 6 claim belt of 90m baggage claim for domestic and 4 Claim belts of 90m for International.

3.2. HISTORIC TRAFFIC HANDLED AT THE AIRPORT

It has been observed that the year on year (YoY) growth rate in international passengers has declined from 15% in FY 2015 to 8% in 2019, while the domestic and total passenger growth remained at nearly 20% mark since 2015 till 2019. In contrast, in FY 2020 minor decline in International traffic of the order of 2% was witnessed while the domestic traffic grew marginally by 2%.

During the following year i.e., during FY 2021, the operations remained largely closed owing to nationwide restrictions due to COVID-19. Post lifting of restrictions, the air travel has witnessed significant recovery.

The total passenger traffic handled by the airport in the FY 2020 stood at 21.65 million as against the unconstrained forecast of 25 million passengers. The international passengers handled remained at 3.91 million and the domestic 17.73 million as against the forecast of 5 million and 20 million respectively.

The year on year (YoY) growth rate in international Air Traffic Movement (ATM) has reached to maximum 13 % in the year of 2016 from 9% in the year of 2015 and then it declined to 4% in the year of 2019. Domestic ATMs and total ATMs have witnessed growth trend varying between 12 % to 27% over the 4-5 years since 2014. International ATM also grew at a steady rate of nearly 10% over the same period. The ATM growth in the last financial year (FY2020) followed the same pattern as that of total passenger growth rate.

The total Air traffic movement handled by the airport in the FY 2020 stood at 183.45 thousand as against the unconstrained forecast of 201 thousand. The international ATM handled remained at 25.75 thousand and the domestic 157.69 thousand as against the forecast of 30 thousand and 167 thousand million respectively.

The Cargo ATM is growing very slowly, and it varies between 02 thousand to 03 thousand in the year of 2016 to 2019 and the forecasted Cargo ATM in the year of 2020 is 03 thousand.

It also has been observed from the historic data that the year on year (YoY) growth rate of total Freight handled in MT has decline continuously from 14% in FY 2015 to 7% in 2019. In FY2020 total freight transported remained stagnant at the same figure as that of 2019, while domestic freight increased the international freight decreased by almost the same rate resulting in total freight growth rate of 0%.

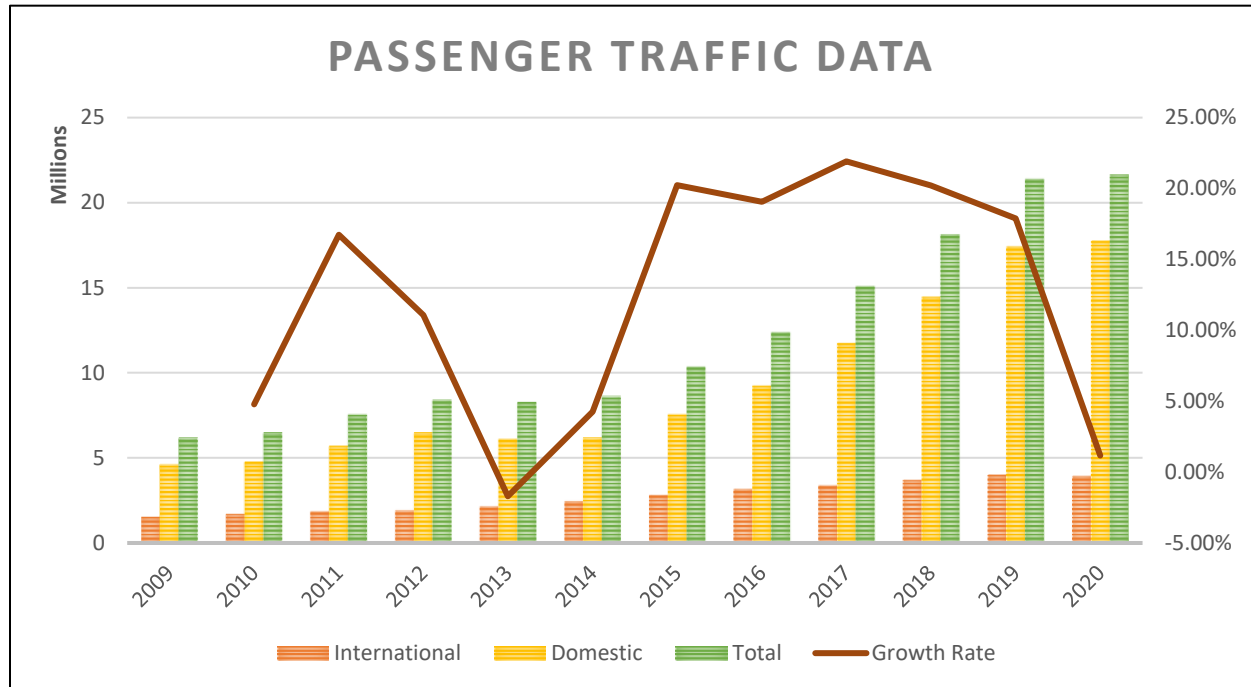


Figure 3-1 Historic Passenger Traffic Growth Rate

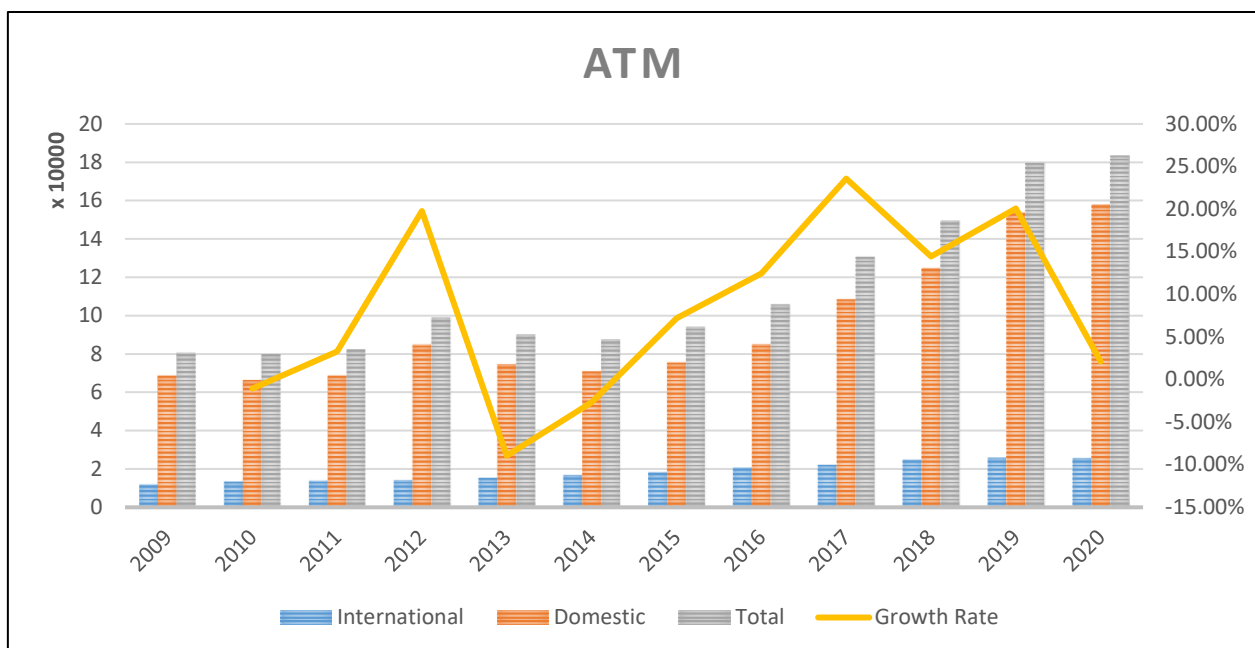


Figure 3-2 Historic Air Traffic Movement Growth Rate

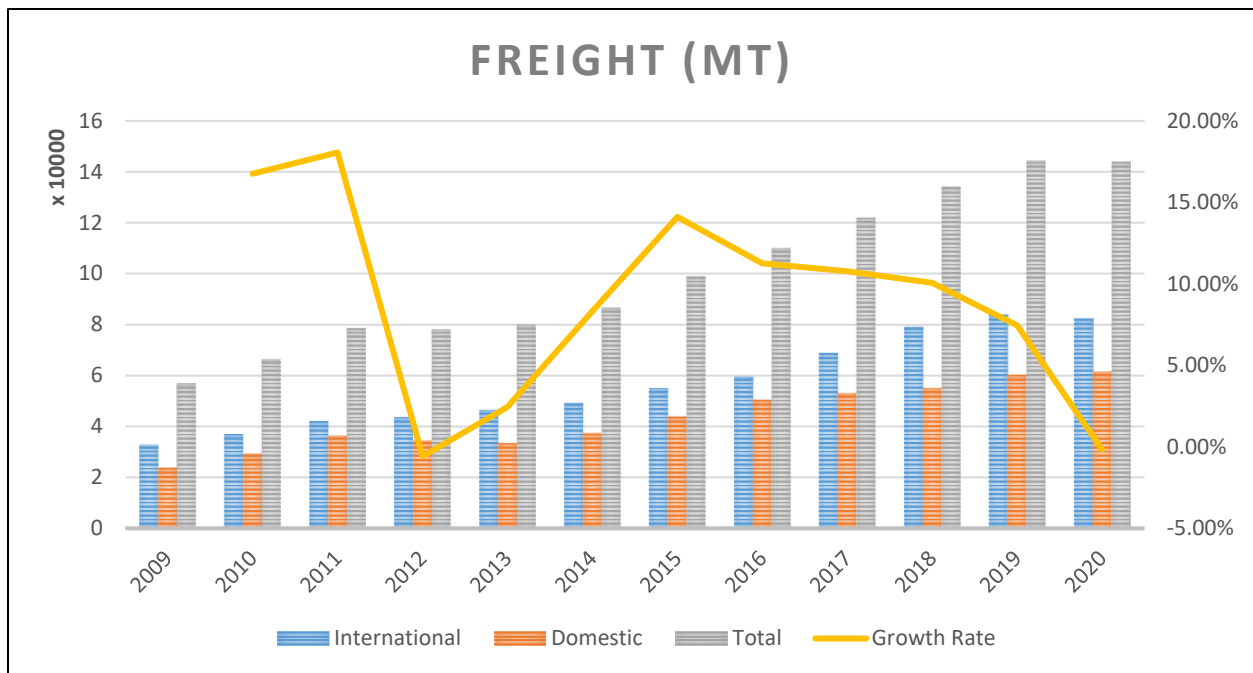


Figure 3-3 Historic Air Cargo Growth Rate

As per the traffic data available for the current Financial Year (FY 20-21), till Jan 2021 from AAI traffic report, the air traffic is on the path of recovery. The comparison of the passenger traffic for Hyderabad International Airport for Financial Year 2019-20 (FY19-20) and FY 20-21 has been reproduced below.

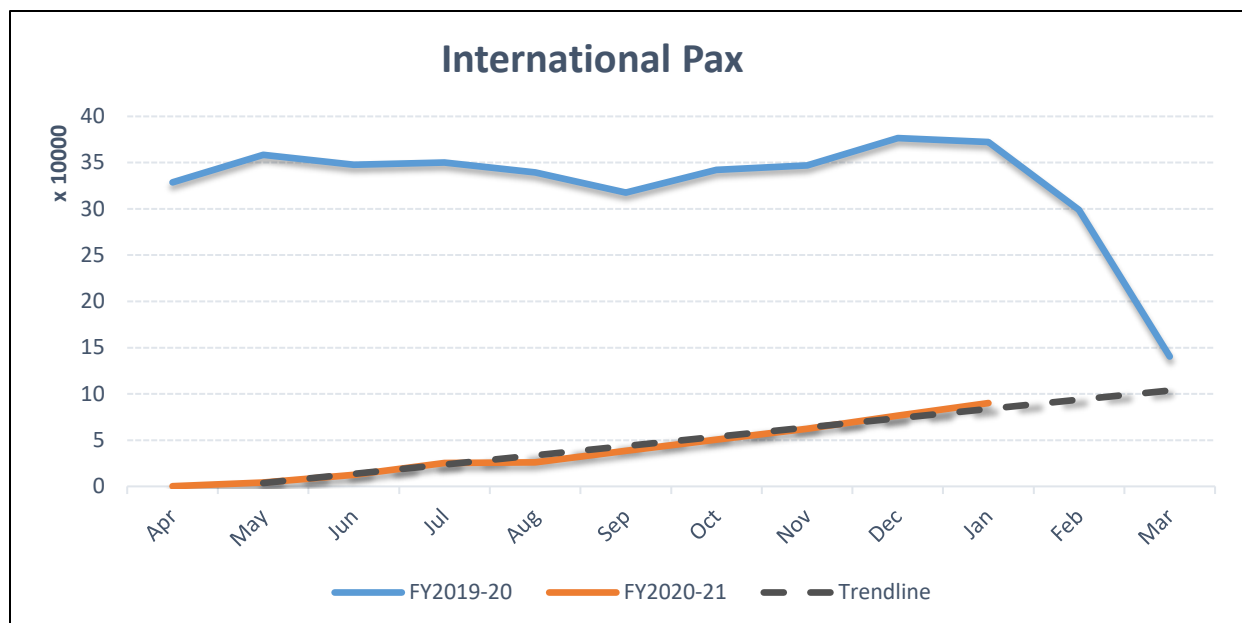


Figure 3-4 Comparison of International Passenger Traffic

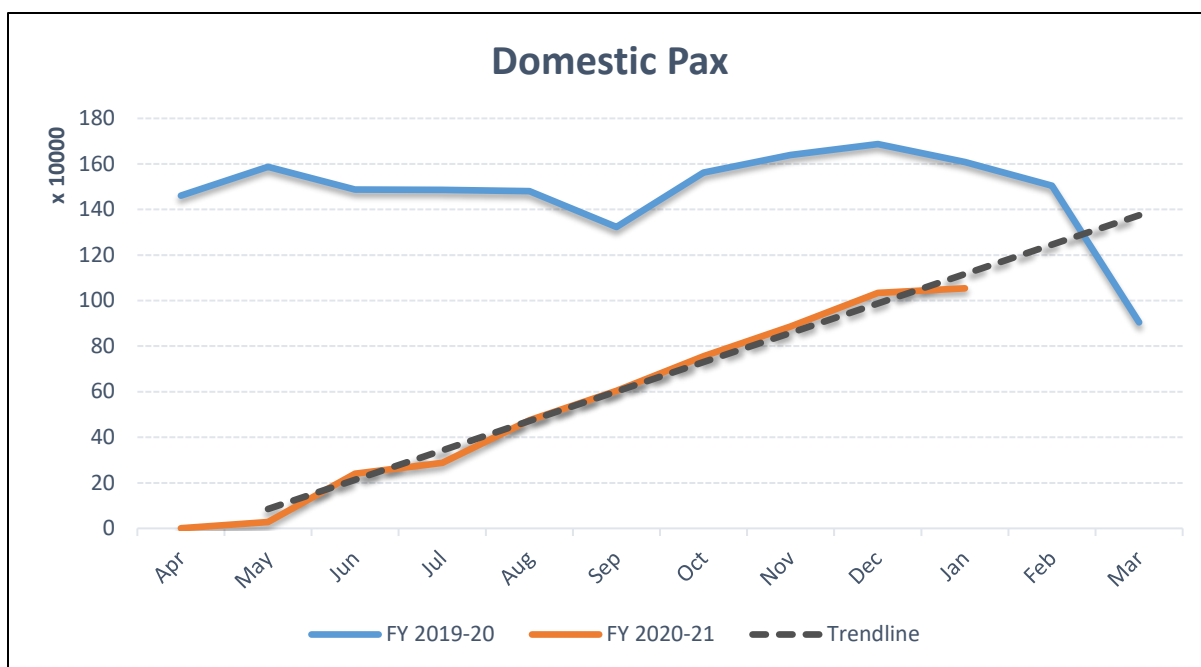


Figure 3-5 Comparison of Domestic Passenger Traffic

3.3. AIR TRAFFIC FORECAST BY ICF LIMITED AND GHIAL

ICF base case, forecasts unconstrained passenger volume reach to 61 million by 2038 at a CAGR of 6.9% from 2017. The growth rate adopted is as given below:

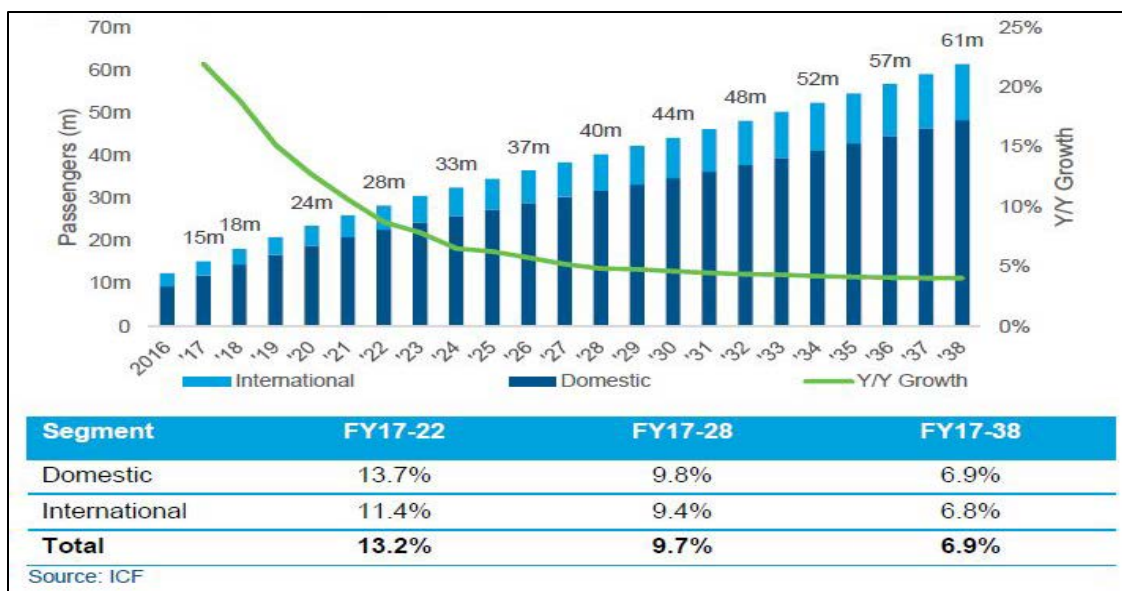


Figure 3-6 Air Traffic Passenger Forecast by ICF

Similarly, as per ICF, ATM forecast which sees annual movements increase from 131k in 2017 to 435k by 2038, at a CAGR of 5.9%.

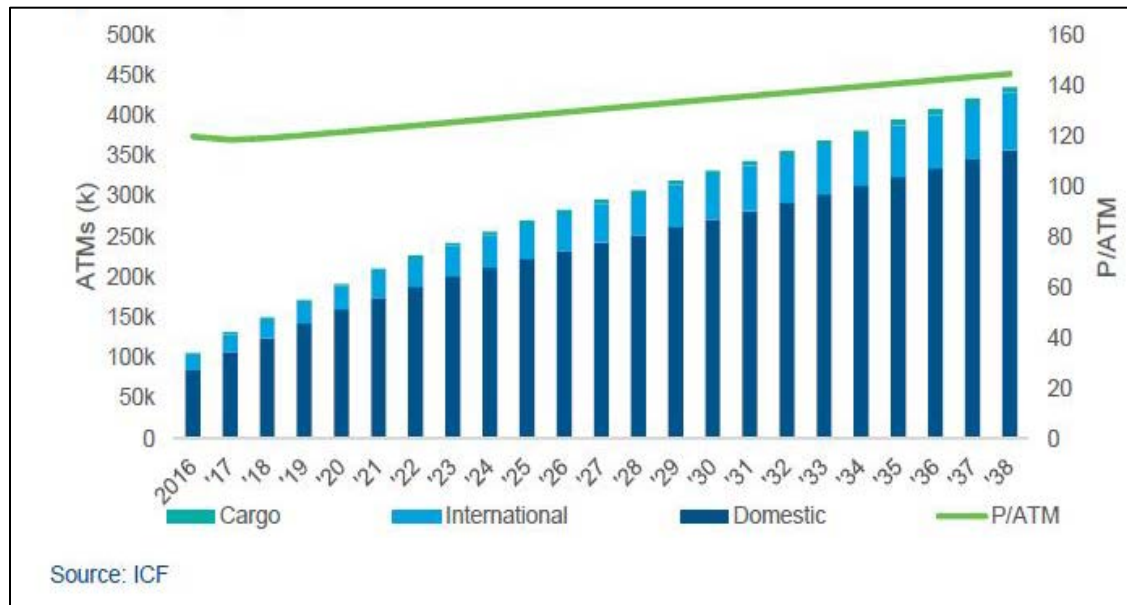


Figure 3-7 Air Traffic Movement forecasted by ICF

As per the forecast study undertaken by GHIAL post COVID, the passenger traffic (domestic + International) will reach 9.8 million by FY 2021 in contrast to the more than 21 million pax for the FY2020. FY2022 is expected to witness unprecedented recovery in passenger traffic clocking a growth rate of 109% YoY. The growth rate will be abated over the years to follow, reaching 17% in 2023 and 7% in 2026. The total passenger traffic project by GHIAL by the end of FY 2026 is 31.4 million in contrast to the 37 Million pax as originally projected by ICF in case of unconstrained growth.

As per traffic forecast in Multi Year Tariff Proposal submitted by GHIAL, according to IATA, it is estimated that the global GDP growth to fall by around 5% this year, before rebounding, and returning to its 2019 level in 2021. To put this decline into context, it is around 4x larger than that of the global financial crisis, where world GDP fell by 1.3% in 2009. In contrast, the expected decline in air passenger volumes is much more severe, with a decline of around 50% in 2020. The recovery is such that a return to the level of 2019 does not occur until 2023, taking around two years longer than global GDP as per IATA

ICF is of the view that domestic and intra-regional traffic would take 4 years and international 5.4 years respectively to recover Pre-Covid 2019 traffic. Although each country would have to deal with economic recession and Post-Covid behavioral changes, however, ICF projected a relatively faster recovery ranging between 3.8 years to 4 years in Asia Pacific region.

The traffic forecast as per projections by GHIAL considering the COVID effect has been reproduced below.

Table 3.1 Post-Covid Passenger Traffic forecast by GHIAL

Passenger Traffic:

Financial Year (Mn.)	2020	2021	2022	2023	2024	2025	2026
International Traffic	3.9	1.4	3.4	4.5	5.0	5.5	5.8
Domestic Traffic	17.7	8.4	17.1	19.5	22.0	24.0	25.6
Total	21.6	9.8	20.4	23.9	27.0	29.5	31.4
Billable Pax*	21.3	9.7	20.2	23.7	26.7	29.1	31.1
Int growth %	-1.7%	-63.9%	141.2%	34.0%	11.5%	10.0%	5.8%
Dom growth %	1.7%	-52.6%	103.4%	13.8%	13.0%	9.0%	6.7%
Total growth %	1.0%	-55%	109%	17%	13%	9%	7%

Table 3.2 Post-Covid Air Traffic Movement forecast by GHIAL

ATM:

Financial Year	2020	2021	2022	2023	2024	2025	2026
International (nos)	25752	11074	20678	27463	30462	33432	35079
Domestic (nos)	157999	84601	164374	184846	207323	224415	238219
Total	183751	95675	185052	212309	237785	257847	273299
Int growth %	-0.50%	-57.00%	86.73%	32.81%	10.92%	9.75%	4.93%
Domestic growth %	2.46%	-46.45%	94.29%	12.45%	12.16%	8.24%	6.15%
Total growth %	2.03%	-47.93%	93.42%	14.73%	12.00%	8.44%	5.99%

Table 3.3 Post-Covid Cargo Volume forecast by GHIAL

Cargo Tonnage:							
Financial Year (MT)	2020	2021	2022	2023	2024	2025	2026
Total Cargo volume ('000 mt)	146	86	136	145	162	177	190
% Growth	-1.25%	-41.00%	58.15%	6.00%	11.72%	9.73%	7.11%

If the above figures are compared to the traffic data available till Jan 2021, it is apparent that realization of such figures would require significantly higher recovery in passenger traffic than witnessed in the previous eight months. It should be emphasized that the growth projection is optimistic than that of IATA and ICF. Since the COVID situation is still evolving, it would be too early to evaluate the reliability of these figures. For the time being it could be safely assumed that at least 80% of the projected figures by considering approx. 6.9% growth rate after achieving Pre-COVID level in FY2023-24 (ICF recommend 6.9 % growth rate for the FY 2017-38) would be realized given the growth potential that Hyderabad has witnessed.

It can therefore be concluded that passenger traffic of 34 million considered by GHIAL for the year 2026 for the expansion of terminal building is not likely to be achieved in FY2025-26 owing to the pandemic effect and it could be realized only by FY 2029-30.

It is noted that the traffic projections of GHIAL for the FY 2025-26 i.e. the end of third control period in the Pre-Covid scenario were 34 MPPA, which has been revised to 31.4 MPPA in Post-Covid scenario by GHIAL. As per the traffic assesment of AERA at this stage, the traffic estimation Post-Covid scenario in FY 2025- 26 is likely to be 26.85 MPPA as against Post-Covid assessment of 31.4 MPPA proposed by GHIAL. Accordingly, RITES has evaluated the Terminal facility requirements for traffic of 26.85 MPPA and 31.4 MPPA also in order to work out the CAPEX requirements upto third control period and to decide on the facilities which can be shifted to the next Control Period. The evaluation as per these requirements have been carried out in chapter 5 of this report.

4. GOVERNING PARAMETERS

4.1. REPORT OF THE INTER-MINISTERIAL GROUP (IMG) ON NORMS & STANDARDS FOR CAPACITY OF AIRPORT TERMINALS (2009)

IMG has deliberated in detail on various key issues and made following recommendations:

A Growth Rate for Traffic Projections

Keeping in view the trend in air traffic in last few years, a span of five years be adopted for the projects planned during the current five-year plan period, i.e., upto 2011-12. Thereafter, as the growth rate stabilizes, the span for making projections should be increased to 7 years for a more realistic assessment.

B Target year for Capacity Creation (Design Year)

Following norms could be adopted for capacity creation:

- Smaller airports (< 5.0 mppa) – 10th year from Planning year.
- Bigger airports (> 5.0 mppa) – 7th year from Planning year.

C Peak Hour Projections

Methodology given in ICAO Manual on Air Traffic Forecasting by finding ratios from historical data and recent studies be adopted. As per ICAO Manual, forecasts of peak period passengers are to be obtained from annual forecasts by applying ratios of busy period traffic to annual traffic derived from actual data at various airports.

Actual data for the past five years should be analyzed to determine the Peak Hour Traffic and the trend growth thereof. Projections for the Design Year should be made based on the trend growth in the past. AAI should make arrangements for data collection of Peak Hour Traffic in respect of all non-metro Airports, so that same is available at the time of planning expansion of these Airports.

Table 4.1 Traffic Ratios at International & Domestic Airports in India

SL.No	Traffic (in mppa)	Ratios for International Terminal		Ratios for Domestic Terminal	
		PD/AD	PH/AD	PD/AD	PH/AD
1	10.0 and above	1.15	0.15	1.10	0.10
2	5.0-10.0	1.2	0.20	1.15	0.15
3	1.0-5.0	1.3	0.30	1.25	0.25
4	0.50-1.0	1.35	0.35	1.35	0.35
5	Less than 0.5	1.45	0.45	1.45	0.45

D Level of Services in Target Year

Level of Services 'C' as per IATA Airport Development Reference Manual (Jan 2004) denotes good service at a reasonable cost. Therefore, this level could be used for design for target demand in the design year. The unit area specified in paragraph E below represents Level of Service 'C'. Net impact of this norm would be that in the initial years, the passengers may experience LOS 'A' or 'B' and as the traffic increases LOS 'C' would be achieved.

E Unit Area Norms

Overall space/area norm should be such as to provide a reasonable level of service for all components required in a Terminal Building. Commercial or Retail area providing amenities like food & beverages, book shops, counters for car rental, vending machines, public rest rooms etc., normally require 8-12 per cent of the overall area, and should be planned and provided accordingly. In bigger airports, i.e., with annual passenger traffic exceeding 10 million, commercial area could be upto 20 per cent of overall area. Keeping in view the IATA norms and discussion above, the norms as given in Table 4, are considered appropriate for Indian Airports.

Table 4.2 Area norms generally adopted in Indian Airports

SL.No	Nature of Terminal	Area Norm – Sqm/php
1	Domestic Terminals	
	a) Traffic upto 100 php	12
	b) Traffic between 100 -150 php	15
	c) Traffic between 150 – 1000 php	18
	d) Traffic above 1000 php	20
2	Integrated terminal for handling both domestic and international	25
3	International Terminals	27.5

F Unit Cost of Construction

IMG recommended that the Appraisal Committee should specify the ceiling unit cost and the architects/engineers of AAI should plan and implement the project within the ceiling, subject to revision on account of increase in WPI.

G Airports developed through Public Private Partnerships

In the case of airports developed through Public Private Partnerships, the project authorities may adopt a case-by-case approach with respect to norms relating to unit area and unit costs. Based on the judicious consideration of international best practices and financial viability, the norms may be specified in each case prior to inviting bids for private participation.

4.2. AERA ORDER NO. 07/2016-17

In the matter of Normative Approach to Building blocks in economic regulation of major airports – Capital Costs, AERA Vide order No. 07/2016-17 issued orders as given below:

- i) Pending finalization of a norm in this regard after going through a more rigorous process, the tentative ceiling cost of Rs.65,000/- per sqm of the terminal building and Rs. 4700 per sqm for the Runway/taxiway/Apron (excluding earthwork upto sub grade level) is approved as a reasonable benchmark for evaluating capital costs to be incurred by Airport Operators of major airports for the purpose of tariff determination on a tentative basis.
- ii) The airport operators are advised to relook at the costs proposed in their submissions and justify the increase, if any, over and above the ceiling rates as indicated above.
- iii) The Airport operators are expected to evaluate the costs in adoption of various alternatives finishes and the corresponding benefits that accrue to users in case of adoption of such alternative higher specifications.
- iv) In case the rates are higher than the ceiling rate approved by the Authority, the justifications, so submitted by the airport operators on actual incurrence of the cost shall be examined by a duly constituted Committee of experts to be constituted by Authority and based on their recommendations the final costs will be adopted.
- v) These ceiling rates shall apply only in case of new projects where the works are yet to be awarded. In case of awarded projects, the capital costs will need to be examined by the committee approved for the purpose.

As per AERA order No. 07/2016-17 dt. 13.06.2016; The cost of construction at Cochin International Airport has been taken as benchmark” at Rs. 65,000/sqm for the terminal building and Rs. 4,700 per sqm for the runway/taxiway/apron (Refer Table below). This was considered for comparison by RITES Ltd. while evaluating the CAPEX proposal of GHIAL for the CP-II. Accordingly, the figures per sqm area for Terminal building and Pavements were evaluated. As the current submission by GHIAL is a combination of CP-II and CP-III, the figures worked out earlier by RITES are considered for evaluation of this CAPEX proposal. The cost breakup of Cochin Airport as provided by AERA for the earlier study (CP- II) is as under:

Table 4.3 Cost Breakup of Cochin Airport

New International Terminal Building Salient features ,Scope, Finish and its cost break up- Cochin Airport				
Sl.no	Approved Scope	Type or specification	Cost break up INR Crore	Remarks / Comments
1	Site Development (earth filling)	Yes		Inclusive in terminal cost
2	Terminal building 1,50,000 SQ. M	3 level (0 to +2 level)	460.99	Separate utility building of 4000 Sq.M
2A	Civil Works RCC + Steelframe	Column free check in and security hold		RCC Framed Column span 12 to 25 M
2B	False ceiling Type			
i	General Public area	Special shape and finish All area		Inclusive
ii	Toilets area	All area		Inclusive
iii	Office area	All area		Inclusive
2C	Floors Finishes -Type			
i	General Public Floors	12mm specially made vitrified Johnson		Inclusive
ii	Toilets Floors	12mm Johnson		Inclusive
iii	Office area Floors	10 mm standard Johnson		Inclusive
2D	Water supply system	Yes		Inclusive
2E	Sewerage treatment	Yes connected with existing system		0.65 MLD STB, 60 Lakhs litre UG tank Inclusive
3	Technical Features of Terminal Building		150.26	
3A	Internal electrification system	Yes		Inclusive
3B	Fire alarm & detection system	Yes		Inclusive
3C	Firefighting system, system	Yes		Inclusive
3D	Signage, Flight Information Display	Yes		Inclusive
3E	Air-conditioning and heating or Air-conditioning	3000TR		Inclusive
3F	Substation, AC Plants, other utility Building – SQ.M and part of Terminal or separate	4 DG Total 9MVA + Transformers		Inclusive
3G	Security surveillance system	Yes		Inclusive
3H	Furniture	Yes		Inclusive
3I	Trolley, Wheel Chairs	Yes		Inclusive
4	Other Equipment		142.44	
4(A)	Aerobridge (10 nos) +VGDS	TIANDA		
4(B)	Escalators (5 nos)	THYSSAN		Inclusive
4(C)	Elevators (16 nos)	THYSSAN		Inclusive
4(D)	Walkalators (total-meters in 3 sections)	THYSSAN for arrival and departure		Inclusive
4(E)	Baggage conveyors, carousal for arrival (90 M loop length, 5 nos expandable to 6 nos) and departure systems (3 Island) 56 Check-in system)			Inclusive
4(G)	Other equipment – specify			
5	Airlines related interface and services		74.66	
5A	CUTE CUPPS CUSS BRS service			Inclusive

5B	Boarding Control service			Inclusive
5C	Passengers data interface with custom and immigration is part of Airlines IT or Airport CUTE			Inclusive
5D	In line screening of baggage	100%		
5E	Standalone X-ray and its screening	Provisioned		Inclusive
6	Car parking and approach road		108.58	
6A	Car park (multi-level or ground level)	Ground level	31.09	Inclusive
6B	Approach road including lighting	4 lane road	66.16	Length – 2.5 KM
6C	Railway over bridge		11.33	
7	Elevated Fly over	In front of terminal	34.57	
8	Apron and pavement –2.5 Lakhs Sq. meters	Code E + Dedicated Apron taxiway code F	165.10	
8A	Pavement Code E+F		108.39	
8B	Rubble ,soil stabilization road Highmast Apron lighting and AGLlighting		56.71	
9	Other services		13.00	
10	Horticatures, Landscape	Not extensive -Minimum		Inclusive
11	Boundary (Compound) wall (operational & others)	Partly enveloped terminal		Inclusive
12	Total likely project cost	As of August 2016	1149.6	12A+12B+12D
12A	Terminal total including equipment		828.35	Total of 2,3,4&5
12B	Apron and pavement including filling		165.1	Sl.no 8
12C	Apron taxiway –only pavement		108.39	Sl.no8A
12D	Carpark, elevated Fly over and other works		156.15	Sl.no 6,7 & 9
13	Abstract cost per Sq.m			
13A	Terminal including all E&M equipment	Total Terminal floor area 150000 +utility floor area 4000= 154000 Sq.M	Rs 53789 per Sq.m	
13B	Apron and taxiway for code E +Partly for Code F		Rs 4336 per Sq.m	Excluding earth filling and soil stabilization

5. EVALUATION OF THE PROPOSAL

5.1. CAPACITY CONSTRAINTS

5.1.1. EXPANSION OF THE TERMINAL BUILDING

GHIAL has submitted its proposal on date 09/12/2020 for the expansion of terminal building with the addition of 2,48,809 sqm area for the combined 2nd and 3rd control period. However, the GHIAL vide email dated 18/02/2021 provided revised expansion area with increasing the PTB area to 2,58,089 sqm from earlier 2,48,809 sqm proposed on 09/12/2020. The area of 2,48,809sqm which was submitted by GHIAL to AERA for consideration in MYTP computation appears to be more authentic as per IGM norms as it comes within 25 sqm per Peak hour passenger for integrated terminal as generally adopted for Indian Airports as per IATA. The area of 2,58,809 sqm is exceeding the upper limit of IMG norms of 25 sqm per PHP for integrated terminal. Hence the area of 2,48,809 sqm has been considered for CAPEX evaluation.

Details of expansion of Terminal Building area by 2,48,809 sqm are explained below-

During 2nd control period, GHIAL had proposed to expand the terminal building by 1,01,175 sqm to handle around 20 million passengers per annum. Taking cognizance of the rapid increase in passenger traffic in last four years, GHIAL has proposed to expand the terminal to handle 34 million passengers per annum. The breakup details of the proposed expansion are as under:

Table 5.1 Area Breakup of proposed Terminal Building

SN	Project	Proposed Addition to Built-up Area for 20 MPPA (in sqm)	Proposed Addition to Built-up Area for 34 MPPA (in sqm)
1	Terminal Forecourt		12,095
2	Terminal Expansion: Eastside	14,806	27,914
	West-side	35,350	69,703
3	Pier Expansion: Eastside	34,507	69,020
	West-side	16512	70,077
	Total	1,01,175	2,48,809

The existing terminal building was built in the year 2008 and is spread over an area of 1,17,339 sqm. The building has been designed to cater 3200 PHP and to handle 12 million passengers per annum. The passenger traffic at Hyderabad International Airport surpassed 12 Million mark in 2016 and grew substantially in the following years to reach more than 21 million in 2019. GHIAL,

as part of short to medium term measures to match the growing demand and decongest the terminal is operating already past its design capacity.

The additional area now proposed is 2,48,809 sqm to handle additional 22 million passengers per annum.

While evaluating the proposal, the following have been taken into consideration:

1. The existing terminal building was commissioned in 2008 before issue of guidelines on area norms by the Inter-Ministerial Group and therefore the area norms of 25 sqm/passenger for the integrated terminal suggested by IMG was not applicable during the initial period of commissioning. However, while evaluating the current proposal, the applicable IMG norms have been considered.
2. The passenger terminal building is a seven level building, two levels for arrival process, two for departures and three levels for baggage makeup/sorting and backup offices/services. The PTB has handled approximately 21 MPPA traffic last year (2020).

The pier expansion is guided by the area requirement of departure lounge for International and Domestic passengers and the gate requirements.

The operations in terminal area are constrained, particularly during consecutive peaks in domestic process at morning & evening hours and at international peaks observed late night/early mornings. These peaks are unlikely to disperse given the high volume of Origin-destination traffic that constitute bulk of the traffic demand. This is also dependent on the peak hour slot availability at the destination and sources, which in this case are mainly metro cities resulting in aggravation during early morning hours when domestic & international peaks overlap.

Also, it was pointed out in the previous report that the domestic & international piers/hold areas are segregated in the existing PTB, thereby reducing utilization for domestic traffic during non-peak hours on the international side. This has been mitigated by using the swing gates. The proposal provides for 4 swing gates to switch the operations between Domestic and International as needed.

The expansion possibilities to the passenger terminal building at Hyderabad airport can be along the sides i.e., parallel to runway as the building depth is restricted by apron on one side and departure/arrival ramps on the other side. Therefore, the proposed expansion has been planned in the areas where expansion is possible.

3. The proposed expansion as shown in the plan below reflects that expansion is planned at 5 distinct locations i.e. East & West sides of PTB , the Forecourt and East & West Piers. Area of proposed expansion at these locations is given in above Table No. 5.1.

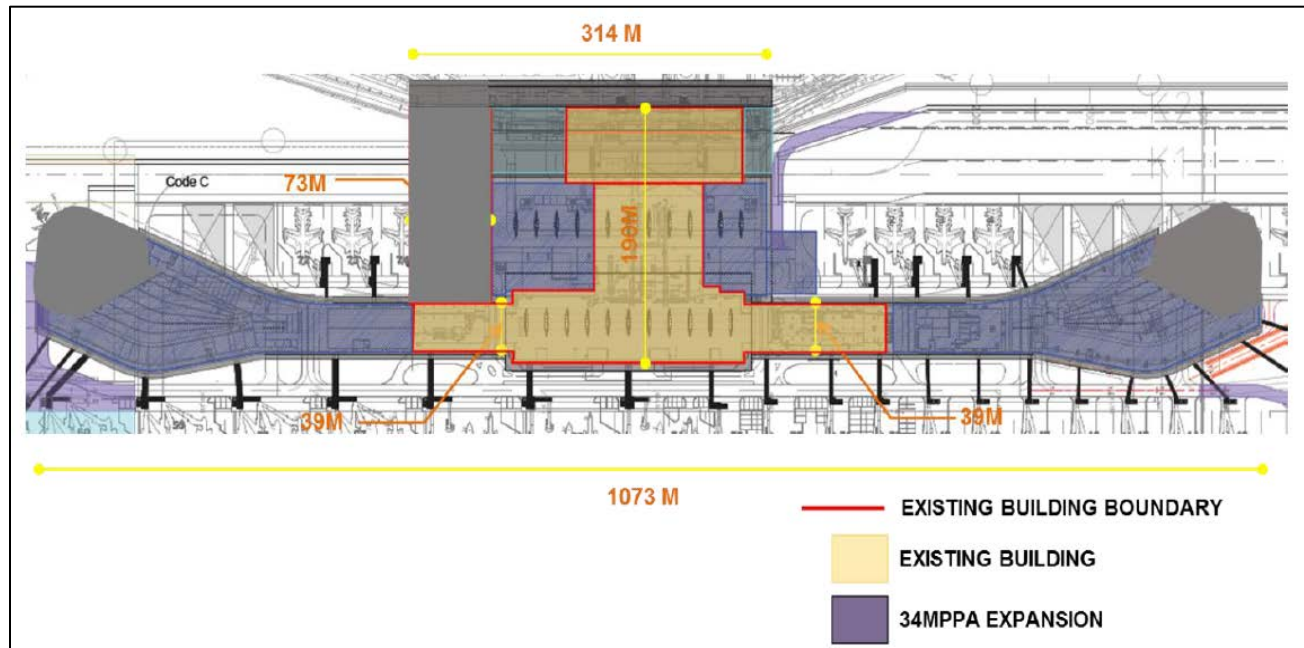


Figure 5-1 Proposed Passenger Terminal Building Expansion

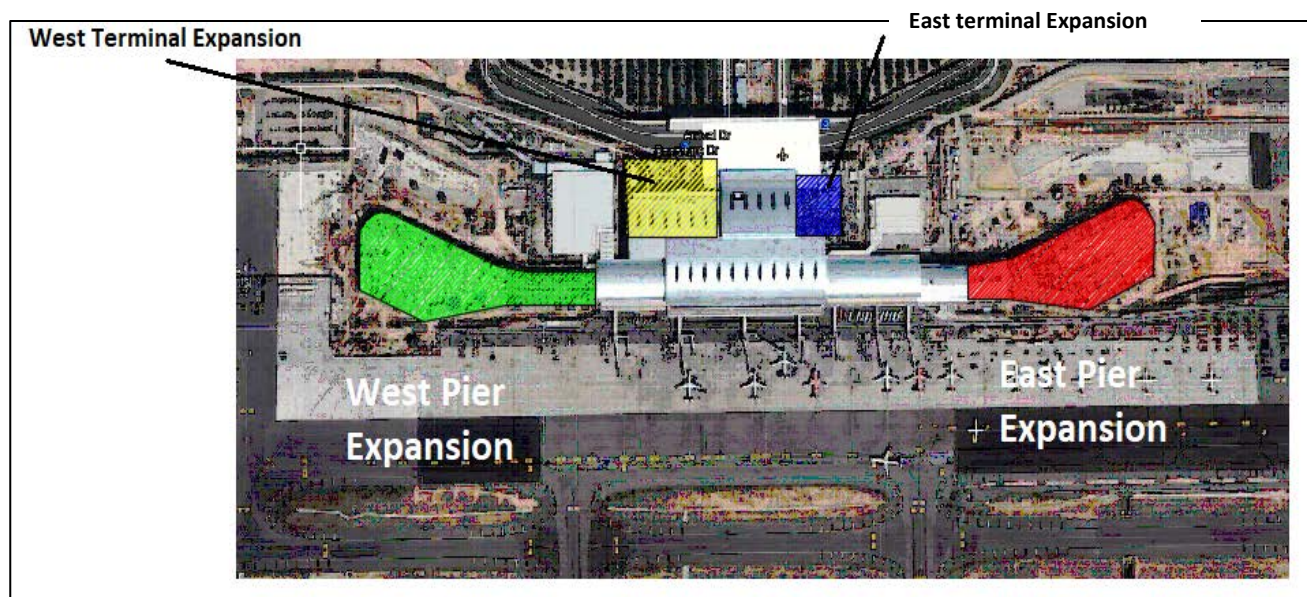


Figure 5-2 Google image of Proposed Passenger Terminal Building Expansion

The google image of the Terminal Building shown at above figure no. 5.2 reflects that the expansion /construction activity at all the above proposed locations is in progress. Hence, reduction in the area of expansion at this stage is an unviable option.

5.1.2. CAPACITY CALCULATION OF PASSENGER TERMINAL BUILDING

Proposed Expansion to Passenger Terminal Building

The existing terminal building was designed to handle 12 million passengers annually or 6400 passengers (combined) during peak hours. In the previous proposal, GHIAL has proposed to expand the terminal building to cater to domestic peak hour pax of 4958 and international peak of 4033 corresponding to 20 million pax.

As per the peak hour pax (PHP) **projections of GHIAL**, the PHP during FY 18 should have reached 7666 (combined) and the same is expected to be around 11511 by FY 21 and 14691 by FY 24.

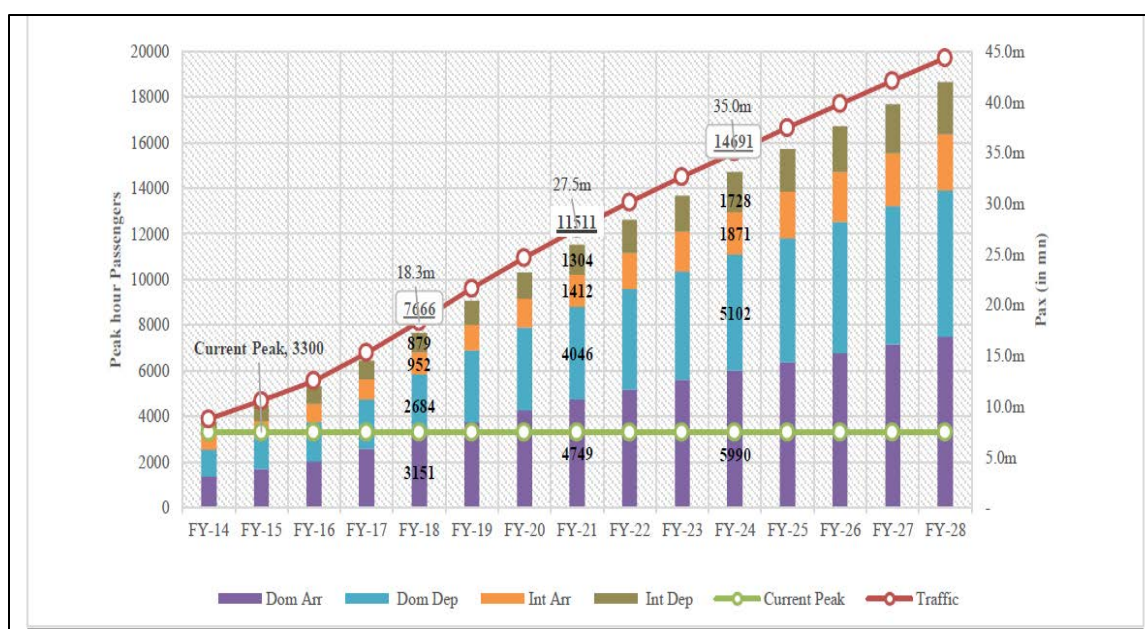


Figure 5-3 Peak Hour Passengers (PHP) forecasted by GHIAL

The breakup of the projected PHP (As per above PHP projection graph of GHIAL) is tabulated below:

Table 5.2 Peak Hour Passenger Details for three different years given by GHIAL

PHP	FY 2018	FY 2021	FY 2024
Domestic Arrival	3151	4749	5990
Domestic Departure	2684	4046	5102
International Arrival	952	1412	1871
International Departures	879	1304	1728
Total	7666	11511	14691

It is worth mentioning that the PHP as reported for FY18 has crossed 6609 as against the projections above. While the figure for the FY 2021 is unlikely to be realized given the widespread pandemic and travel restrictions it is expected that as conditions improve, the traffic growth will pick up pace and projected PHP corresponding to traffic of 34-35 Million pax will be realized but with delay of two to three years past FY 2026.

Terminal Area per PHP

Area proposed by GHIAL Per PHP = Total Built-up Area / Total Peak Hour Passenger

- Existing Building Built up Area = 1,17,339 Sqm
- Proposed expansion of PTB in CP 2 + CP 3 = 2,48,809 sqm
- Total proposed Built-up Area After expansion = 3,66,148 sqm
- Area per Peak Hour Passenger (PHP) = 3,66,148 Sqm / 14691 = 24.92 Sqm.

As per Inter-Ministerial Group (IMG) & IATA norms an area of 25 sqm/PHP is considered appropriate for Indian Airports for Integrated terminal.

It has been evaluated and found that the proposed Total Built-up Area/PHP of 3,66,148 sqm is meeting the requirements of Inter-Ministerial Group (IMG) & IATA norms.

Since the international traffic is very low as compared to domestic traffic and if we do separate analysis for domestic and international traffic as per IMG norms the following is observed:

- As per IMG norms for Indian airports, for domestic traffic, the area of 20sqm/PHP is considered appropriate. Therefore, the total area required for expansion for domestic passenger is $20 \times (5990 + 5102) = 221840$ sqm
- Similarly, the international traffic the area of 27.5 sqm/PHP is considered appropriate. Therefore, the total area required for expansion for international passenger is $27.5 \times (1871 + 1728) = 98972.5$ sqm
- Total area required for PTB is $221840 + 98972 = 3,20,812$ sqm

Hence, Terminal expansion requirement for combined CP -2 & 3, if calculated individually for Domestic and International PHP, works out to $320812 - 117339 = 203473$ sqm as against 248809 sqm proposed by GHIAL. Though the total expansion requirement calculated individually for domestic and international passenger works out to less than the expansion proposal of GHIAL, however, as the terminal is integrated for International and domestic passengers, the proposal of GHIAL for expansion of PTB by 2,48,809 sqm is found to be justified for 34 MPPA as it meets the IMG norms of 25 sqm/PHP for an Integrated Terminal.

Table 5.3 Comparison of Terminal Building Area requirement for proposed traffic by year 2025-26 with different traffic scenarios

By considering 25sqm per PHP				
S No.	Description	GMR Precovid forecast (34MPPA)	GMR Post Covid Forecast (31.4MPPA)	AERA Postcovid Forecast (26.85 MPPA)
a)	Passenger (MPPA)	34	31.4	26.85
b)	Peak Hour Pax. (By straight line interpolation of PHP provided by GHIAL for 34MPPA and 18.3MPPA)	14691	13527*	11491*
c)	Total Area of Terminal Building by considering 25 sqm per PHP (b X 25)	367275	338175	287275
d)	Existing Area (sqm)	117339	117339	117339
e)	Additional Area required (sqm) for combined 2 nd and 3 rd control period by considering 25 sqm/PHP (c – d)	249936	220836	169936
f)	Total Area proposed by GHIAL in 3rd Control Period (sqm)	248809	-	-
g)	Area already proposed in 2nd control period (sqm)	101175	101175	101175
h)	Area proposed for 3rd control period only (sqm) (f – g) & (e-g)	147634	119661	68761

Note:

- 1) PHP for 31.4 MPPA and 26.85 MPPA have been calculated in proportion to the annual traffic.
- 2) The Terminal Building area expansion of 2,48,809 sqm proposed by GHIAL is found to be in order in accordance with IMG/IATA norms for the traffic projections of 34 MPPA.
- 3) The Terminal Building area expansion requirements commensurate to the traffic projections of 31.4 MPPA and 26.85 MPPA comes to 2,20,836 sqm & 1,69,936 sqm respectively.

CONTACT GATE DEMAND

The current number of gates available (12 contact gates in Code C Configuration) are not adequate to cater to the present-day traffic which has already crossed the 21 Million mark.

As per IATA, the required number of gates at an airport can be determined using the following equation:

$$n = \frac{vt}{u}$$

Where:

n = number of gates required, v = design hour flow for departures or arrivals (aircraft / hour)

t = mean stand occupancy (hour) – nearly 1.0 hour.

u = utilization factor 0.6 – 0.8

$$n = 26 \times 1.0 / 0.6 = 43.3 \text{ say } 44 \text{ contact gates.}$$

Gate Demand Based on Enplaned Passenger per gate approach and Departures per gate approach.

The following gate demand has been worked out based on recommendations of IATA and TRB.

It was assumed that most of the international traffic (approx. 90%) and 70% of the domestic traffic would be enplaned through contact gates and the domestic traffic is expected to rise to 85% by the design year. The Number of Contact gates required as worked out using Enplaned passengers per gate and the same is tabulated below.

Table 5.4 Number of Contact gates required using Enplaned passengers per gate

Enplaned Passengers per Gate Approach					
Year	Annual Enplaned Passengers	Annual Departures	No of gates	Enplaned Passenger per Gate	Enplaned Passenger Per Dept.
2013	35,20,494	33,089	12	2,93,400	106
2014	36,49,905	32,391	12	3,04,200	113
2015	44,02,084	34,756	12	3,66,800	127
2023	101,86,538	90,231	31	3,26,900	113
2024	114,81,942	1,01,059	35	3,29,000	114
2025	125,36,759	1,09,585	38	3,31,300	114
2026	133,55,494	1,16,152	40	3,33,000	115

Similarly, the number of gates required were worked out using the Departures per gate approach. The number of gates as calculated based on departure per gates is tabulated below.

Table 5.5 Number of Contact gates required using departure per gate

Departures per Gate Approach					
Year	Annual Enplaned Passengers	Annual Departures	No of gates	Annual Dept. Per gate	Daily Dept. per gate
2013	35,20,494	33,089	12	2,760	7.6
2014	36,49,905	32,391	12	2,700	7.4
2015	44,02,084	34,756	12	2,900	7.9
2023	101,86,538	90,231	35	2,560	7.0
2024	114,81,942	1,01,059	38	2,630	7.2
2025	125,36,759	1,09,585	39	2,780	7.6
2026	133,55,494	1,16,152	40	2,930	8.0

It could be seen that the number of contact gates required works out to 40 from either of the two methods. It has been assumed that the daily departures per gate would go down as the new gates are commissioned and as the traffic will grow the departures per gate will reach the similar levels as prevailing during 2015 keeping in mind that international passengers and majority of domestic passengers will be moved through contact gates by the design year.

Thus, the total demand of contact gates for the demand year works out to be **40 for 34 MPPA**.

In the previous report (CP 2) of RITES, it was brought out that at-least 22 gates would be required for catering to the design traffic of 20 MPPA.

Taking straight line interpolation between the passenger and number of contact gates, the linear equation is derived and accordingly contact gates required for 31.4 MPPA and 26.85 MPPA are worked out as approximately 37 & 31 respectively. However, as the works have been awarded by GHIAL and the construction is ongoing, it is not feasible to reduce the number of gates at this stage.

5.1.3. EXPANSION OF THE KERB AND APPROACH RAMP

The current proposal, projects the total 3587 vehicles in departure and 2899 in the arrivals during the peak hour for 34 Million annual pax. To cater to projected demand the ramp capacity needs to be further increased from the existing 220 m length. The current proposal entails increasing the length of ramp to 300 m to correspond to the expanded terminal building. The expansion of kerb and Approach ramp was proposed for second control period for increasing the kerb by adding lanes to both arrival and departure ramp. It was brought out in the previous RITES report that the kerb length required to cater for 2000 vehicles in departure and 1100 vehicles in arrival would require doubling the effective kerb length by addition of parallel lanes. The increase in length of the arrival and departure ramp is justified. The contract for the subject work was already awarded in August 2017.

FORECOURT EXPANSION

The Departure forecourt area at Hyderabad Airport is utilized mainly for horizontal circulation, retail facilities and common use self service area (CUSS). The departing passengers moving from the ramp to the terminal, crosses the forecourt through two bridges. It has been reported that the forecourt can cater up to 2741 peak hour pax. The design year projection of departures is 6830 pax (combined) and the arrival peak (combined) is 7861 pax. The current entry points at the departure forecourt are three. For an average processing time of 10 sec at entry gate per pax the number of entry lanes required works out to 23. The projected entry gate demand for the design year is 8 number with 23 entry lanes in total which is justified.

Table 5.6 Number of entry lanes required in Forecourt Area

Entry Gates to Terminal			
Peak-hour departing passengers	a	PHP	6,830
Average processing time	b	sec/pax	10
No. of pax throughput per lane per hour	c	pax / lane	360
Efficiency factor	d	%	85%
Entry lanes required including efficiency factor	$a/(c*d)$	lanes	23

5.1.4. PIER EXPANSION

The pier expansion is worked out based on the TRB Models keeping in mind that the expansion if required had to be done in modular templates as the Ultimate Master plan. The calculations for area required are tabulated below.

Table 5.7 Pier Area calculation of Terminal Building

PIER AREA CALCULATION	
No. of Seats on Design Aircraft	196
Load Factor	95%
No. of Design Passengers	186
Percent Seated	80%
Percent Standing	20%
Seated Passenger Space Requirement (sqm)	1.7
Standing Passenger Space Requirement (sqm)	1.2
Seated & Standing area (sqm)	298
High Utilization Factor (Increase)	20%
Holdroom Sharing Factor (Decrease)	5%
Adjusted Seated and Standing Area (sqm)	343
Podium Width/Position (m)	2
Depth of Podium to back wall (m)	3
Podium Queue Depth (m)	10
Area per Podium Position (sqm)	26
Number of Podium Positions	1
Total Podium and Queue Area (sqm)	26
Boarding/ Egress Corridor Width (m)	3
Depth of Hold room (m)	25
Boarding/ Egress Corridor per Bridge / Door (sqm)	75
Number of Bridges/ Doors	2
Boarding Corridor Area (sqm)	150
Total Hold area	519
Width for Circulation including space for travelers	15
Length Circulation area	30
Circulation area sqm	450
Area for Amenities (50% of hold area)	260
Commercial Area (max 20% of Hold room area)	104
Total Hold room Area (sqm) per gate	1333
Total Area of Concourse (sqm) for 33 gates at level F	43989

Total area proposed for east side and west side pier for Level F (Departure concourse for Contact gates is 46710 sqm (23,350 sqm east pier + 23,360 sqm in west pier). This is in line with the calculations above.

Therefore, the expansion on East-side pier and west side pier to accommodate 33 contact stands is justified for 34 MPPA.

5.1.5. AIRSIDE EXPANSION

GHIAL has submitted its proposal on date 09/12/2020 for the expansion of Apron and Taxiways with the addition of 2,37,565 sqm and 4,64,631sqm area (Combined Airside area 7,02,196 sqm) for the combined 2nd and 3rd control period. However, vide email dated 18/02/2021 they have changed the expansion of Airside area with addition of 209073 sqm for Apron and 541776 sqm for Taxiways (Combined Airside Area 7,50,849sqm). The area of 7,02,196 sqm which was submitted by GHIAL to AERA for consideration in MYTP computation has been taken for evaluation of CAPEX.

The airport at present has 42 stands of which 12 are contact stands (6 + 3x2). During the previous proposal, GHIAL has proposed to increase the Apron stands to 52. In the current proposal, GHIAL has proposed to increase the total number of stands to 101. The details of the stands are tabulated below.

Table 5.8 Details of Contact and Remote gates after expansion

Sr No.	Description	Number of Stands
1	Existing Contact stands	12
	New Contact stands (international)	16
	New Contact stands (domestic)	17
	Total Contact stands post Expansion	45 (includes 4 swing stands)
2	Existing Remote Stands	30 (some to be reconfigured for contact stands)
	New Remote Stands	52
	Total number of Remote stands (post expansion)	56
3	Total Stand (contact + Remote)	101

As per ICAO guidelines, the required number of aircraft stands at passenger terminal may be estimated by the following formula:

$$S = \sum (T_i/60 \times N_i) + \alpha \quad \text{where } S = \text{required number of aircraft stands}$$

T_i = gate occupancy time in minutes of aircraft group i

N_i = Number of arriving aircraft group i during peak hour

α = number of extra aircraft stands as spare

Considering total peak hour ATM of 51 in the design year with total peak hour arrival of 20 domestic and 5 international aircraft and a turnaround time of 60 minutes for domestic flight and 120 minutes for international flight the approximate aircraft stand requirement for the design year works out as under:

Number of domestic aircraft stand

$$S = 60/60 \times 20 + 1 = 21 \text{ stands}$$

Number of international aircraft stand

$$S = 120/60 \times 5 + 1 = 11 \text{ stands}$$

The international stands calculated corresponds to larger aircrafts in code E and F, these stands can serve two code C aircraft. In addition, the night parking requirement as projected is in excess of 84 for the design year as projected by GHIAL based on request by various airlines. The demand projection as per GHIAL is reproduced below.

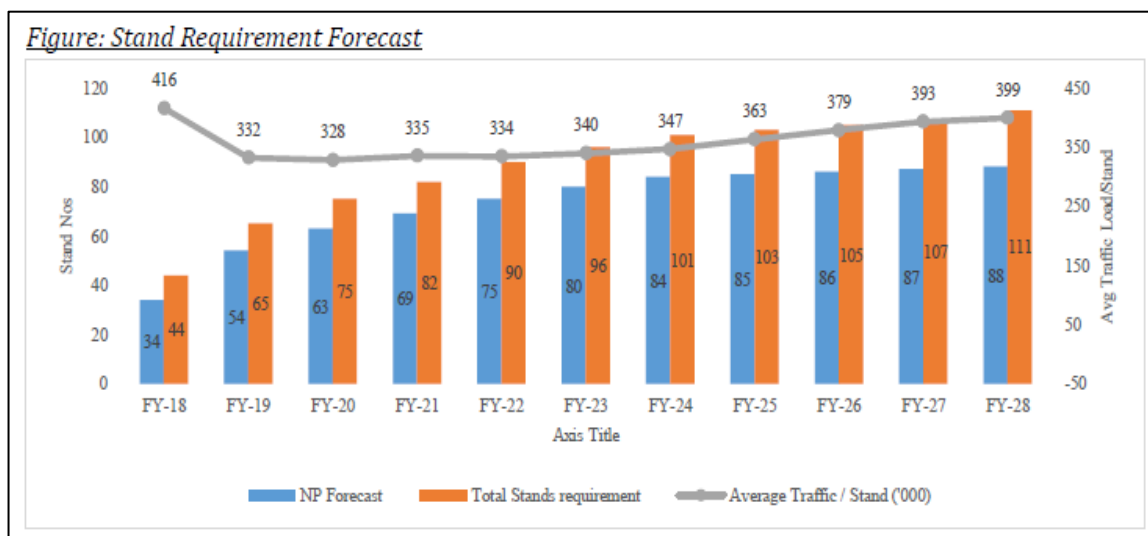


Figure 5-4 Stand requirement forecast by GHIAL

However, in the view of projected reduced traffic of 26.85 MPPA and 31.4 MPPA, the requirement of contact stand can be reduced but the night parking requirement as forecasted by GHIAL is 93 in the design year 2024 which implies that the overall parking requirement is more than the proposed 101 (contact + Remote). Thus, the demand for total aircraft stand requirement of 101 projected by GHIAL is considered reasonable as some of the contact gates will also be utilized for night parking.

Area Requirement for Apron and Taxiways

The approximate area required for remote stands for Code 'C' type of aircraft is 3700 sqm per aircraft. Thus, the total area of additional stands for North East Remote Apron works to 1,55,400 sqm for 40 code C parking stand and 4 code B parking stands. The rest of remote stands are being developed around the proposed terminal building while some of the existing remote stands will be converted to contact stands.

The airside expansion entails extension of taxiway Bravo on east and west side by nearly 2350 m (combined) with shoulder on each side. The total area for taxiway extension is 1,01,050 sqm. The extension of taxiway bravo will facilitate movement of aircrafts in both directions allowing effective utilization of Runway system. The existing taxiway Alpha is being used as secondary runway while the main runway is under maintenance, extension of the taxi Bravo will reduce the excess load during the maintenance period of main runway.

The rapid exit taxiways (RETs) at chainage 1250m and 1800 m are proposed to reduce the runway occupancy time. The peak hour capacity of runway as projected for the design year is 51 ATM during the peak hours. The design capacity is not likely to be achieved with the existing taxiway system. Further, to achieve the 51 ATMs during the peak hour the inter arrival separation distance has to be reduced to 5-6 Nm. Currently the airport is operating with the declared separation of 8 Nm. The area breakup for the airside development is tabulated below.

Table 5.9 Details of proposed Airside area expansion

Sr No.	Description	Area	Remarks
1	Apron Expansion	2,37,565 sqm	Includes expansion of Remote Apron and Expansion of Apron around terminal Building.
2	Taxiway Expansion	4,64,631 sqm	Includes extension of Taxiway Bravo on East and west side, Crossfield taxiways Taxi M and Taxi K, taxi for remote apron, and RETs.

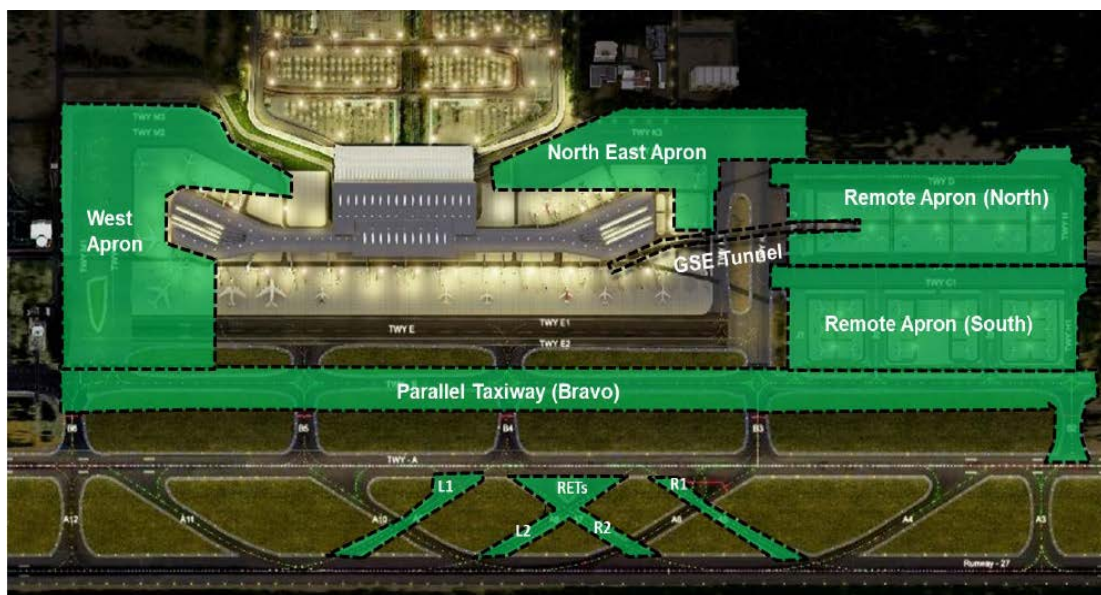


Figure 5-5 Proposed expansion of apron and taxiway system

5.1.6. MAIN ACCESS ROAD

The Existing Main Access Road is a 4-lane dedicated access road from NH-7 coming from the west & from Srisaillam Highway (NH-765) coming from the east with an interphase of 4 rotary junction which regulate the cross movement across the same, on to airport & associated existing facilities.

Main access road caters to both Airport & Non-airport Traffic like that of SEZ, hotel, other commercial establishment etc.

As per project information file capacities of roads is given below:

Table 5.10 Traffic Capacity of Existing Approach and Exit Road

Elements	Feature	Current Capacity, PCU/hr.	Requirement 2014-15, Peak Traffic (PCU/Hr.)
Approach Road	2lane	2400*	1933
Exit Road	2lane	2400*	2027
* Source - Highway Standards: Urban Roads capacity			

As per PIF report, the total Airport road traffic the arriving / departing traffic are split across two main entrances. The broad split traffic across two entrances (excluding two wheelers) are as listed below:

- West entrance (NH - 7): 70%
- East entrance (NH-765): 30%

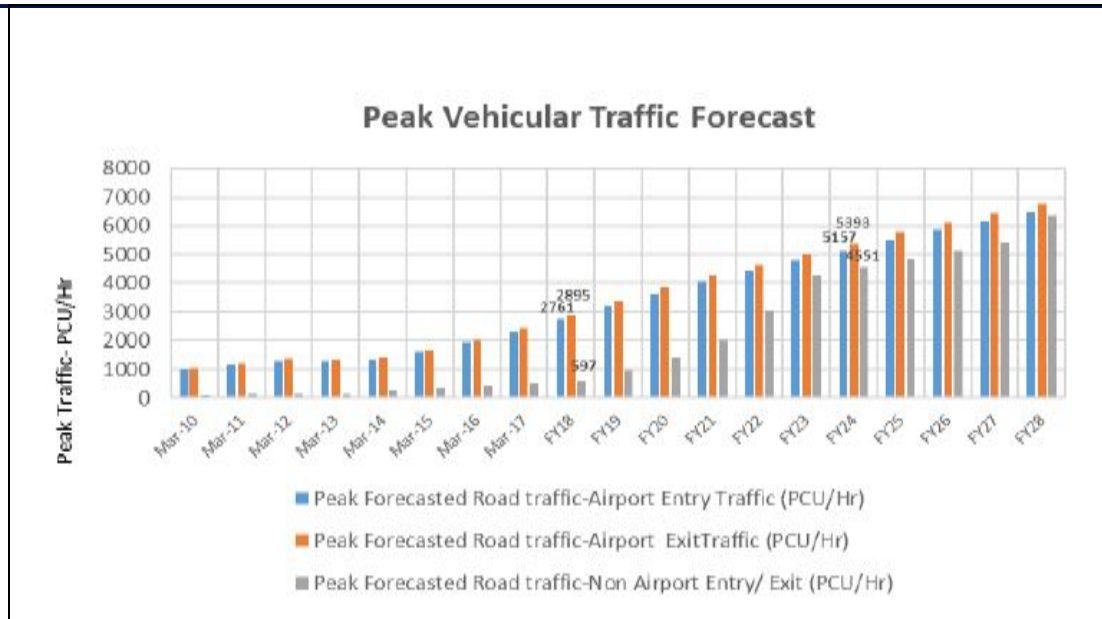


Figure 5-6 Peak Vehicular Traffic Forecast of Main Access Road

In the peak vehicular traffic forecasted graph, when the Airport will approach to the 34 MPPA it can be seen that Peak Airport entry traffic, exit traffic and Non-Airport entry /exit traffic will be 5157 PCU/Hr., 5393 PCU/Hr. & 4551 PCU/Hr. respectively.

As per the above data, the maximum traffic PCU per hour in west direction will be

$$= 0.7 \times 5393 + .5 \times .7 \times 4551$$

$$= 5367.95 \text{ PCU per hour in flow direction from west}$$

With the combined Airport traffic and Non-airport development picking up at airport will see the overall peak in single directional demand exceeding would 5000 PCU/Hr/Flow Direction mainly from western side.

As per information given in PIF, the metro project materializing in next 3-4 years, might cater to about 20% of the traffic demand and the effective road peak traffic will be always in excess of 4000PCU/Hr/ Flow direction from west as passenger approach to 34MPPA airport capacity.

As per the IRC 86 1983 and the above data given, the proposed 8 Lane Main Access Road is justified from NH-7 to Departure Junction against 34MPPA Pax.

As per three different traffic scenarios, the vehicular traffic for the passenger is also evaluated in following three options –

Table 5.11 Traffic in PCU per hour calculations for different traffic scenarios

S No.	Description of Passenger (MPPA)	Airport Entry Traffic (PCU /Hr)	Airport Exit Traffic (PCU /Hr)	Non Airport Entry/Exit Traffic (PCU /Hr)
a)	Traffic available against 18.15MPPA	2761	2895	597
b)	Traffic available against 34MPPA	5157	5393	4551
c)	Equation of Line calculated by linearly interpolation of available data against 18.15 MPPA and 34MPPA	$Y=151.17X+3.62$	$Y=157.60X+34.6$	$Y=249.46X-3930.64$
d)	GMR Pre covid forecast (34MPPA)	5157.00	5393.00	4551.00
e)	GMR Post Covid Forecast (31.4MPPA)	4750.36	4983.24	3902.40
f)	AERA Post Covid Forecast (26.85 MPPA)	4062.53	4266.16	2767.36
g)	As per GHIAL, 70% traffic is coming from west direction. We have considered maximum Airport (Exit direction) traffic for evaluation.			
h)	GMR Pre covid forecast (34MPPA) (d X 0.7)		3775.10	1592.85
i)	GMR Post Covid Forecast (31.4MPPA) (e X 0.7)		3488.27	1365.84
j)	AERA Post Covid Forecast (26.85 MPPA) (f X 0.7)		2986.31	968.58
k)	As per GHIAL 20% traffic demand will be met by Metro			
l)	GMR Pre covid forecast (34MPPA) (h X 0.8)		3020.08	1274.28
m)	GMR Post Covid Forecast (31.4MPPA) (i X 0.8)		2790.61	1092.67
n)	AERA Post Covid Forecast (26.85 MPPA) (j X 0.8)		2389.04	774.86
o)	Total traffic forecast			
p)	GMR Pre covid forecast (34MPPA) (l)		4294	
q)	GMR Post Covid Forecast (31.4MPPA) (m)		3883	
r)	AERA Post Covid Forecast (26.85 MPPA) (n)		3164	

The maximum capacity as per IRC 86 - 1983 can be seen as per below table:

As per IRC 86 - 1983

No. of traffic lanes and widths	Traffic flow	Capacity in PCUs per hour for various traffic conditions		
		Roads with no frontage access, no standing vehicles, very little cross traffic	Roads with frontage access but no standing vehicle and high capacity intersections	Roads with free frontage access, parked vehicles and heavy cross traffic
2-lane (7-7.5m)	One way	2400	1500	1200
	Two way	1500	1200	750
3-lane (10.5m)	One way	3600	2500	2000
4-lane (14 m.)	One way	4800	3000	2400
	Two way	4000	2500	2000
6-lane (21 m)	One way*	3600	2500	2200
	Two way	6000	4200	3600

*For three lanes in predominant direction of flow.

Figure 5-7 Tentative Capacities of Urban Roads between intersections

As per the above table of IRC code, the lane requirement is given below against the forecasted traffic:

Table 5.12 Number of lanes requirement for different traffic scenarios

Description	GMR Precovid Forecast (34MPPA)	GMR Post Covid Forecast (31.4MPPA)	AERA Post Covid Forecast (26.85 MPPA)
Maximum PCU/Hr taken from above table	4294	3883	3164
No. of lanes one way	4 lane	4 lane	3 lane
Total lanes both side	8 lane	8 lane	6 lane

As per the above three scenarios, AERA may decide the selection of any options from above table considering the current scenario and traffic assesment appropriately.

5.2. THE CAPITAL COST PROPOSAL

5.2.1. GENERAL

The capital cost proposal has been submitted by GHIAL by adopting the following methodology:

- GHIAL has submitted combined proposal for both 2nd & 3rd control (2016 -21 & 2021 to 26) period expansion to AERA for cumulative capital cost Rs. 5596.23 Cr.
- GHIAL also stated that the award of 2nd control period work was delayed by one year and implementation of the same will also delayed by one more year i.e. up to 2023.
- Detailed cost is proposed by GHIAL by sub head wise summation of Purchase order (PO's) issued to different agencies for the said work. Balance works for which work order (PO) is not yet issued are provisionally estimated on lump sum basis. No rate analysis to justify the reasonableness has been submitted and it is mentioned by GHIAL that rates/price is based on historical data from GMR and other Airports under PPP.
- For the purpose of justification of cost for combined 2nd & 3rd control period, GHIAL has considered their rate per unit area for Terminal Building & Airside Area enhanced by addition of GST (6%) & inflation (6% per annum) for two years over the approved unit rates by AERA for the second control period instead of detailed estimate.
- GHIAL has bifurcated its estimate in two parts out of which one part is Terminal Building including Civil works, E&M works and the other part is Airside works which includes the Taxiways, Apron , AGL , Drains and Apron works etc.
- In the 2nd control period, provision of GSE tunnel and city side Approach road was not proposed, however the same has been considered in this combined proposal. For this, GHIAL has submitted a summary of PO's of Rs. 82.80 Cr for the GSE tunnel and one PO of Rs. 24.23 Cr. and lump sum estimate of Rs. 142.77 Cr. for the Road works.
- Lump sum details of Preliminaries, permits & Insurance, design, PMC, and contingencies is also given.
- Initially GHIAL has submitted the issued PO's to different agencies for more than 90% of the works, whose details given below.

Table 5.13 Details cost breakup of Capital Expenditure received from GHIAL

GHIAL-Project Expansion Cost Summary										Rs Crs
SN	Particulars	Revised Budget submitted to AERA	Awarded Contract (B)							Balance to be awarded
		A	L&T	MW	MVR	VNC	Beumer India	Others	Total Pos issued	C=A-B
									B	
1	Expansion of the Terminal Building	2,658.32	2343.44					72.20	2,415.65	242.67
2	Airport Systems	1,070.00		875.04			138.32	15.67	1,029.03	40.97
3	Expansion of the Kerb & Approach Ramp	156.40				146.77		0.98	147.75	8.65
4	Expansion of Apron & Taxiways	895.66	637.73		142.70	58.98		18.11	857.53	38.13
5	Road Infrastructure	167.00				24.23			24.23	142.77
6	GSE Tunnel	82.80	82.80						82.80	(0.00)
	Sub- Total	5,030.18	3,063.98	875.04	142.70	229.99	138.32	106.96	4,556.99	473.19
7	Preliminaries, Insurance & Permits	120.10						26.51	26.51	93.59
8	Design Development & PMC	202.94						193.51	193.51	9.43
9	Contingencies	243.01						-	-	243.01
	Total	5,596.23	3,063.98	875.04	142.70	229.99	138.32	326.98	4,777.01	819.22

RITES remarks on the methodology adopted by GHIAL to justify the CAPEX:

- As per the AERA normative approach order No. 07/2016-17 issued on dated 13/06/2016, The Airport operator is expected to determine cost as per publicly available standard like CPWD norms for scheduled items and market rate analysis for non-schedule items. **This is not followed by the GHIAL in this combined 2nd and 3rd expansion proposal.**
- Through the above issued PO's and the lump sum estimates, it is not possible to work out the exact contents and extent of work.
- In view of above, RITES has evaluated the CAPEX of 2nd & 3rd control period based on the already evaluated 2nd control period CAPEX (2016-21) and duly enhanced it by GST & Price variation.

5.2.2. EXPANSION OF TERMINAL BUILDING – COST EVALUATION

AS PROPOSED BY GHIAL

The GHIAL has estimated the CAPEX based on cost per unit area of approved rate instead of detailed calculation-

For the terminal Building, GHIAL has considered the previously worked out basic rate of Rs. 1,22,466/- per sqm as hard cost with addition of 6% per annum inflation for the delay in award & implementation of work and also added 6% for the GST component as old rates were of Pre-GST regime.

The basic rate is inclusive of the Civil works & finishes, Airport system, E&M work, IT system etc. The detailed calculations of estimated of unit cost as per GHIAL is as under:

Basic Rate per sqm of Building	= 1,22,466
Add 6% inflation for the first year	= 1,22,466 x 0.06 = 7347.96
Add 6% inflation for the 2 nd year	= (1,22,466 + 7347.96) x 0.06 = 7788.83
Add 6% GST	= (1,22,466 + 7347.96 + 7788.83) x 0.06 = 8256.15
Total cost per unit area	= Rs. 1,45,858.94

Total cost of Passenger Terminal Building for 2,58,809 sqm area

$$= 2,58,089 \times 1,45,858.94$$

$$= \text{Rs. } 3,764.45 \text{ Crores}$$

GHIAL has stated that they have calculated the estimates for expansion of PTB as per above procedure and submitted their budget estimate of Rs. 3728.32 Crores (PTB + Airport system- As per table in para 5.2.1 above) to AERA which includes Civil works & finishes, Airport system, E&M work, IT system etc.

AS REVIEWED BY RITES

The cost of Terminal Building has been reviewed/scrutinized in the same way as GHIAL has calculated and is summarized below. However, the Terminal area considered for evaluation by RITES is 2,48,809 sqm (Submitted by GHIAL to AERA for MYTP computation) which is as per IMG norms as against area of 2,58,809 sqm considered by GHIAL while justifying its CAPEX.

RITES has calculated the inflation based on the indices issued by Construction industry development council (CIDC indices) on monthly basis for the construction industries. In this calculation RITES has calculated the CAGR = 3.02% per annum.

RITES have considered period of 02 years for inflation/ escalation as proposed by GHIAL due to delay in the award of work by one year and delay in its implementation by one more year. The combined period of construction for the 2nd & 3rd control period is 2018 to 2023.

It has been seen that the cost considered in the 2nd control period was valid upto the year of 2021 which implies that the inflation/ escalation will be applicable over the area proposed in third control period only beyond the year 2021 and upto year 2023 (for 2 years).

As proposed by GHIAL, the GST is considered @ 6 % per annum.

The total cost is calculated as under:

Basic Cost per unit sqm	= 1,22,466/-
-------------------------	--------------

Add Inflation for one year @ 3.02%	= $1,22,466 \times .0302 = 3698.47/-$
Add inflation for 2 nd year @ 3.02%	= $(1,22,466+3,698.47) \times .0302 = 3810.17$
Add GST @ 6%	= $(1,22,466+3,698.47+3810.17) \times .06 = 7,798.48$
Total cost per sqm	= Rs. 1,37,773.12
Basic cost per sqm including GST only	= $1,22,466 \times 1.06 = 1,29,813.96$
Cost of the Terminal Building for the area of 2 nd Control Period	= $1,01175(\text{sqm}) \times \text{Rs. } 129813.96$
Cost of the Terminal Building for the area of 3 rd Control Period	= $147634(\text{sqm}) \times \text{Rs. } 137773.12$
	= Rs. 3,347.39 Crores

As the award of work and implementation is delayed by 02 years, as advised by AERA, RITES has calculated cost for both the cases by considering inflation and without inflation. The case discussed above was after considering the effect of inflation and the case discussed below for without inflation

Basic Cost per unit sqm	= Rs. 1,22,466/-
Add GST @ 6%	= $\text{Rs. } 1,22,466 \times .06 = 7347.96$
The cost per sqm	= Rs. 1,29,813.96
Cost of the PTB for the area of 2 nd & 3 rd Control Period	= $2,48,809(\text{sqm}) \times \text{Rs. } 1,29,813.96$
	= 3,229.89 Crores

Based on the above observations, the cost of the terminal building for 34 MPPA expansion has been worked out for the two cases by considering the inflation and without inflation of Rs. 3,347.39 Crores and 3229.89 Crores respectively against Rs. 3,728.32 as Crores estimated by GHIAL.

Table 5.14 Cost Evaluation of Terminal Building Expansion for different traffic scenarios

S. No.	By considering 25sqm per PHP			
	Description	GMR Pre Covid forecast (34MPPA)	GMR Post Covid Forecast (31.4MPPA)	AERA Post Covid Forecast (26.85 MPPA)
a)	Passenger (MPPA)	34-35	31.4	26.85
b)	Peak Hour Pax. (By straight line interpolation of PHP provided by GHIAL for 34MPPA and 18.3MPPA)	14,691	13,527	11,491
c)	Total Area of Building by consider 25 sqm per PHP (b x 25)	3,67,275	3,38,175	2,87,275
d)	Existing Area (sqm)	1,17,339	1,17,339	1,17,339
e)	Additional Area required (sqm) for combined II and III CP. (c – d)	2,49,936	2,20,836	1,69,936
f)	Total combined Area (II + III CP) proposed by GHIAL in 3rd Control Period (sqm)	2,48,809		
g)	Area already proposed in 2nd control period (sqm).	1,01,175	1,01,175	1,01,175
h)	Area evaluated in 3rd control period only (sqm)	1,47,634	1,19,661	68,761
i)	Cost per sqm for 2nd control period including GST @6% (Rs)	1,29,813.96	1,29,813.96	1,29,813.96
j)	Cost per sqm for 3rd control period including GST @6% but excluding inflation (Rs)	1,29,813.96	1,29,813.96	1,29,813.96
k)	Cost per sqm for 3rd control period by providing the inflation for two years @ 3.02% and GST @6% (Rs)	1,37,773.12	1,37,773.12	1,37,773.12
l)	Cost of Terminal Building for 2nd Control Period (Crores) (g X i)	1,313.39	1,313.39	1,313.39
m)	Cost of Terminal Building for 3rd Control Period without inflation (Crores) (h X j)	1,916.50	1,553.37	892.61
n)	Cost of Terminal Building for 3rd Control Period by considering inflation for two years (Crores) (h X k)	2,034.00	1,648.61	947.34
o)	Total cost of Terminal Building Without inflation for 2nd and 3rd control period (Crores) (l + m)	3,229.89	2,866.76	2,206.01
p)	Total cost of Terminal Building With inflation for 2nd and 3rd control period (Crores) (l + n)	3,347.39	2,962.00	2,260.73

As discussed with AERA, we have evaluated the cost for the above three options. The selection of one of the above options may be decided by AERA.

Details of PO's of Terminal Building submitted by GHIAL is given below:

An amount of Rs. 2658.32 Crores (including Preliminaries, Labour cess and GST) is catered in the proposal for expansion of the passenger Terminal Building. This includes awarded work of 2343.42 Crores to L & T , 71.22 Crores to other vendors (For communication Room, structured cabling system of new PTB, Access control System , PAVA System, SITC of ATRS and other systems) and Lump sum estimated works of 243.67 Crores for additional balance miscellaneous work (Like Airport Village weather Proof and facade ,Artwork, Airport seating, Reserved Lounges ,Furniture ,fit out and Interface ,SOCC, Retail shell & Core, balance enabling work & IT Packages) Thus the gross cost of PTB is **2658.32** Crores,

An amount of Rs. 2343.42 Crores (including Preliminaries (distributed to each subhead of Building), Labour cess @1% and GST @18%) is awarded to L & T for expansion of the passenger terminal building which includes Civil structures & Finishing work ,HVAC System Electrical supply systems, Low & extra Low voltage system ,Plumbing & firefighting systems, Elevators & escalators, Furniture and Signage. It also includes Demolition (8.14 Crores) and Modification (17.56 Crores) works in existing Terminal.

Preliminaries and General Requirement cost is **266.96** Crores (Nearly 16.3 % of basic cost (**1636.68**) of Expansion of PTB).

The break-up of the PO's cost (2343.42) awarded to L&T is as below:

Preliminaries		Rs. 266.906 Crores
Basic Civil structures and Finishing works	-	Rs. 1197.286 Crores.
MEP Systems (Like HVAC System Electrical supply systems, Low and extra Low voltage system, Plumbing and Firefighting systems, Elevators and escalators)	-	Rs. 393.918 Crores
Furniture (15.385) and Signage (4.375).	-	Rs. 19.76 Crores
Demolition (8.147) /Modification (17.564) in existing PTB	-	Rs. 25.711 Crores
Labour cess (19.03 Cr) and GST (346.11Cr)	-	Rs.365.14 Crores
Mezzanine Floor (In east & west pier incl. Taxes)	-	Rs. 73.71 Crores
Additional GST	-	Rs.0.975 Crores

MEP SYSTEMS

A basic cost without loading Preliminaries, Labour cess and GST of Rs. **393.918** Crores has been proposed in the capital cost towards HVAC System (84.767 Crores), Electrical supply systems (18.256 Crores), Low (124.516 Crores) & extra Low (8.109 Crores) voltage system, Plumbing and firefighting systems (92.591), Elevators and escalators (65.679 Crores).

For electrical supply system with low and very low voltage system, combined cost is **150.881** Crores which works out to 12.602% of the estimated cost of civil works (1197.286 Crores). These costs have been arrived at on the basis of statement submitted by GHIAL.

In addition to L&T, 71.22 Crores work is awarded to other 45 vendors (For communication Room (4.733 Cr), structured cabling system of New PTB (9.18Cr.), Access control System (12.036), PAVA System (10.778 Cr.), SITC of ATRS (13.683) and other small works. Out of 72.22 Crores 9.788 Crores are civil works and balance 61.432 Crores are Electrical and allied works.

Lump sum estimated works of 243.67 Crores for additional miscellaneous balance works like Airport Village weather Proof (30.70 Cr.), Artwork (20.00 Cr.), Airport Village facade (27.00Cr.), Airport seating (18.00 Cr.), Reserved Lounges (18.00 Cr.), Furniture (18.00Cr.) , Office fit out and Expansion Interface (14.00 Cr.), SOCC (3.00 Cr.), Retail shell & Core(38.70 Cr.), Landscape (4.00 Cr.) balance enabling work & IT Packages 30.30 and 20.00 Cr. Out of this 243.67 Crores, 50.30 is electrical & allied and the balance 193.37 is for civil related work.

AIRPORT SYSTEMS

A total cost of Rs. 1070.00 Crores is catered towards airport systems including Passenger Boarding Bridges, Screening system, Baggage Handling System, People Movers (Elevators, Escalators & Travellators), VDGS and GPU system.

Out of total work of Airport system, 1029.03 Cr. are already awarded and estimate of 40.97 Cr. is submitted for balance works. Out of 1029.03 awarded value for Megawide (875.04 Crores which includes preliminaries for 94.00 Crores), Beumer (138.32) and other agencies (15.67 Crores for installations and local supplies). The BHS alone amounts to Rs. 365 Crores. The passenger boarding bridge and screening systems put together cost 392 Crores. The costs are based on submission by GHIAL.

5.2.3. EXPANSION OF THE KERB AND APPROACH RAMP

An amount of Rs. 156.40 Crores is catered in the proposal for expansion of the kerb and approach ramp. This constitutes approx. 2.80 % of the total cost proposal (5596.24Crores). Out of 156.40 Crores, **146.767** Crores is awarded contract value submitted by GHIAL to VNC for Construction of 4 lane approach ramp and 0.98 Crores to Godrej for SITC of UVSS, BOLLARD and barriers. Provisional estimate of 5.5 Crores for Airport name signage and Landscaping around Ramp area is kept on Lump sum basis. Main work (146.767 Cr.) catered for Bridge PCC and RCC (58.963 Cr.),

Reinforced earth wall (4.75 Cr.), Fabric roof canopy (14.284 Cr.), Road work (9.996 Cr.), Barricading, temporary road and Preliminaries (15.452 Cr.), Miscellaneous additional & variation work. (12.978 Cr).

5.2.4. EXPANSION OF THE APRON AND TAXIWAY- COST EVALUATION

An amount of Rs. **895.66 Crores** is catered for Airside works out of which the work awarded to L&T for **637.76 Crores**, MVR for 143.95 Crores, VNC for 56.241 Crores, others (20 vendors) for 18.43 Crores and lump sum estimate is submitted for balance work in Bravo Taxiway (39.74 Crores) is taken in the Capital Expenditure for expansion of apron, Taxiway and associated works. The amount is based on statement given by GHIAL.

The major constituents of 637.76 Crores include:

Taxiway, Aprons, Roads and Surface Drainage	-	391.26 Cr
AGL & Apron Electrical System	-	30.83 Cr
Airside firefighting and Fire Alarm Systems	-	9.45 Cr
Aviation Fuel Hydrant System	-	12.03 Cr
Amount of Preliminaries and General requirement for above	-	72.336 Cr
Amount of Labour cess (5.15 Cr.) and GST (93.80Cr.) for above	-	98.96 Cr

Others

(Provisional Sum elected for 2 No. of RET's

Including 1% labour cess and 18% GST)	-	22.900 Cr
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Details of work awarded to MVR for 143.95 Crores are as under.

Drainage work	-	16.521 Cr
Pavements	-	74.337 Cr
Electrical work and AGL	-	8.576 Cr
S/I/T/C CCTV System	-	1.177 Cr
Fire Hydrant System	-	1.052 Cr
Fuel Hydrant System	-	16.80 Cr
Marking & Sign	-	0.151 Cr.
Precast boundary Wall	-	1.341 Cr
Fuel Hydrant & airfield Ground lighting system	-	1.735 Cr
GST	-	21.904 Cr

As per PO details from GHIAL to VNC for 56.241 Crores (includes Apron expansion (35.001 Cr and Southern Apron earthwork (21.240 Cr).

As per PO details From GHIAL to others (20 vendors) for 18.43 Crores (S/I/T/C Fuel Hydrant system at West Apron & various electrical systems).

Lump sum estimate for balance work in Bravo Taxiway (39.74 Crores) is taken in the Capital Expenditure, for expansion of apron, Taxiway and associated balance works like site investigation, Barricading, Earthwork, Pavement Crust Layers, Drainage & Culverts, AGL Signage etc. The amount is based on statement submitted by GHIAL.

The total area proposed for expansion of Apron is 2,37,565 sqm and Taxiway is 4,64,631 sqm. (Total 702196). Total cost is 895.66 Crores (includes preliminaries, taxes). Cost per sqm works out to Rs. 12755.12 per sqm. This is inclusive of all other associated works such as AGL & Apron Electrical System, Airside firefighting and Fire Alarm Systems, Aviation Fuel Hydrant System, Preliminaries and General requirement for above, Amount of Labour cess and GST for above, Provisional Sum elected for 2 No. of RET's with 1% labour cess & 18% GST).

The average cost of aircraft movement area (pavements) works to Rs. 12755.12 Crores as against AERA norms of Rs.4, 700/sqm.

For arriving at the cost, GHIAL has adopted only summation statement for PO's issued for the work.

During the review of cost of Airside works, RITES has adopted the same procedure that has been adopted to calculate the cost as for terminal building (Para 5.2.2) and the per unit area cost of airside works for 2nd control period is worked out as Rs. 9909.55 (including GST) per sqm and for 3rd control period is worked out as Rs. 10517.12 per sqm (including GST and inflation for two years).

The cost of Airside works by considering inflation for 3rd control period:

The cost of Airside works for 2nd control period = 118734 (sqm) X Rs. 9909.55 = 1176600000

The cost of Airside works for 3rd control period = 583464 (sqm) X Rs. 10517.12 = 6136361003

= Rs. 731.30 Crores

The cost of Airside works without considering the inflation for 3rd control period:

The cost of Airside works for 2nd and 3rd control period = 702198 (sqm) X Rs. 9909.55

= Rs. 6958463177

= Rs. 695.85 Crores

Based on the above observations, the cost of the total Airside works has been reworked for both the cases by considering the inflation and without inflation and the cost comes out to be Rs. 731.30 Crores and 695.85 Crores respectively against Rs. 895.66 Crores.

5.2.5. ROAD INFRASTRUCTURE

An amount of 167.00 Crores is catered in Capital Expenditure for Road Infrastructure including main access road & elevated roads (Rotary 1 to VVIP gate). Out of this amount, Rs. 24.23 Crores work is awarded to M/s VNC by GHIAL and for balance works, an estimate of Rs.142.76 Crores is submitted. On preliminary scrutiny the total cost of road infrastructure comes out to Rs. 104.28 Crores.

The cost of widening of existing 4 lane to 8 lane road of length 05 km has been corrected to 42.15 Crore. If the widening is considered as 06 lane road for 26.85 MPPA than the corrected cost of this road will be 21.08 Crores. The combined cost will come out to Rs. 83.21 crores including cost of flyover.

5.2.6. GSE TUNNEL

An amount of 82.81 Cores is considered for GSE Tunnel work awarded to L& T as per statement of GHIAL. Details are as under.

Basic cost of GSE Tunnel	-	59.77 Cr
Preliminaries.	-	9.747 Cr
Labour cess (0.695 Cr.) and GST (12.598 Cr)	-	13.293 Cr

5.2.7. ICT

As reported by GHIAL, the CAPEX proposed towards ICT during CP-2 was Rs. 48.90 Cr, which has become RS. 276.40 Crores during the CAPEX proposal for combined CP – 2 & 3, which is apparently disproportionate in view of the increase in proposed expansion. However, GHIAL has clarified that the above increase in cost due to technology upgradation, like introduction of 4G & 5G, wi-fi infrastructure and full roll out of E-boarding etc. the justification is found to be in order.

However, the ICT does not have a separate cost head in the CAPEX as it has been calculated under the per sqm area cost of CP-2 duly enhanced by inflation and GST component.

Details of ICT equipment is attached at Annexure – 4.

5.2.8. OTHERS

The capital cost proposal submitted by GMR comprise the following provisions:

5.2.8.1. PRELIMINARIES, INSURANCES AND PERMITS

An amount of Rs. 348.99 Crores is provisioned in the capital cost proposal towards preliminaries @ 16.308% of the Basic cost of works excluding Cess & GST etc. This amount of preliminaries refers to Expansion works awarded to L & T for PTB (266.906 Crores), Apron & Taxiway (72.338 Crores) and GSE Tunnel (9.747), whereas the cost of awarded work for these three is 3063.99 Crores. The amount is said to be catered Mainly for Site overheads and running cost(65.156Cr.) ,Head office overheads(62.25Cr.) ,provision of contractor's insurance Professional indemnity in respect of Contractor's design obligations(6.508Cr.), temporary Barricading(11.634Cr), Establishment, Operation, Maintenance and removal of Contractor's labour camp, Contractors equipment, Fabrication yard ,store stock yard ,test labs and other facilities as required for execution of Expansion work(32.071Cr) ,Deployment of consultant (Design services 63.50 Cr.), plant and tools like Tower cranes (8.258 Cr.) and other preliminaries and general requirement (6.030Cr). For Phase 2 part 82.96 Cr. is catered Lump sum basis.

Similarly, Preliminaries are included in Airport System work awarded to Megawide (80.301Crores excluding GST).

However, an amount of Rs. 120.10 Crores is also provisioned towards preliminaries, insurance & permits in the capital cost proposal @ approx. 2.39% of the Proposed Capital hard cost of works (i.e.,5030.19 Crores). The breakup of 26.50 Crores are Building permission fee (7.968 cr.) and various insurances and preoperative expenses are incurred and 93.60 Crores is estimated lump sum basis for future expenses.

After the review of preliminaries, insurance & permits cost restricted to 98.35 Crores against 120.10 Crores.

5.2.8.2. DESIGN DEVELOPMENT AND PMC

An amount of Rs. 202.94 Crores is provisioned in the capital cost proposal @ 4.03% of the Proposed Capital hard cost (i.e. 5030.19 Crores) of works towards design development and PMC work. Out of this 38.56 Crores is towards various design development consignments like APRON consultant (RAMBOLL), Design consultancy work for PTB expansion works (MAINHARDT SINGAPORE PTE LIM/20.932 Crores), Master planning consultant (LANDRUM & BROWN 2.358 Crores), PTB design review (MAINHARDT 1.294 Crores), Legal support services (3.192 Crores), and other miscellaneous works.

Details of the design development as discussed above have been provided in the table No. 5.15 given below.

Table 5.15 Details of 38.56 Crores is towards various design development works given by GHIAL

S No.	Scope	Name of the Consultant	Amount (include Taxes)
1	APRON consultant	RAMBOLL	574,53,009
2	4 lane approach ramp consultant	SUNDARAM ARCHITECTS PVT LTD	81,00,000
3	Design Consultancy Services for PTB Expansion Works	MEINHARDT SINGAPORE PTE LIM	2093,18,536
4	Master planning consultant	LANDRUM & BROWN	235,82,920
5	Fuel hydrant consultant	HARY K60 AVIONICS & CONSULTANT	17,93,425
6	Soil investigation	GEO TECHNOLOGIES	19,97,665
7	Environmental impact assessment study	VIMTA LABS	33,92,500
8	Environmental impact assessment study for 25mppa to 50 mppa	VIMTA LABS	21,24,000
9	Contractor appointment for providing qa & qc services for expansion project	RINA	134,36,282
10	Surveying of taxiway	SURVEYING & ENGINEERING	59,738
11	Survey & Contour survey for demarcated area of around 40 acres	SURVEYING & ENGINEERING	57,500
12	Topographical Survey for RAMP expansion	SURVEYING & ENGINEERING	1,12,499
13	TOPOGRAPHIC SURVEY WORKS ADDNL AREA	SURVEYING & ENGINEERING	95,939
14	For trafic study	IBI Consultancy	15,00,960
15	Providing Consultancy Services for reviewing Contractor's design for PTB structure including structural steel and roof system	MEINHARDT INTERNATIONAL INFRASTRUCTURE PTE. LTD.	129,42,000
16	Design Consultancy Services for simulation modeling of PTB terminal, Rajiv Gandhi International Airport	AIRPORT RESEARCH CENTER GMBH	84,01,181
17	Legal support services for expansion works	Link legal	319,16,640
18	Design Consultancy Services for Passive Network Infrastructure development	Optimetrix integration and Solutions Private limited	64,78,200
19	Consultancy services for the proposed interior landscape works	Oracles	28,32,000
			3855,94,993

Out of the total 202.94 Crores, PMC work done by GMR Airport developers Limited for 154.93 Crores, Lump sum provision for 9.50 Crores is kept for Balance design elements and the details of remaining 38.56 Crores has been provided in the table given above.

5.2.8.3. CONTINGENCIES

An amount of Rs. 243.01 is provisioned in the capital cost proposal @ 4.83% of the proposed hard cost (i.e., 5030.19 Crores). The provision of contingencies is towards physical contingencies including any modification to the scope of the work and unforeseen work. Considering the magnitude of the project the provision of 3% towards contingencies is considered adequate as presently followed by Govt. organization such as AAI & CPWD.

5.3. CONSTRUCTION SCHEDULE

GHIAL has submitted the overall implementation schedule for the 2nd Control period and 3rd Control Period with date of commencement as August 2017 and expected completion in September 2023 i.e., spanning over a period of 6 years.

As per the Program chart provided by GHIAL, the construction of Terminal Building started in Oct 2018 and is expected to be completed in Sept 2022 i.e., spanning over a period of 4 Years. The time period for construction stipulated by AAI in some of the tenders for airport terminal building projects for Project Management Consultancy including design and supervision is 9 months planning & design and 36 months for construction.

Hence the time period of 04 years as proposed by GHIAL for construction of Terminal building is considered to be reasonable.

However, GHIAL has stated that expansion work for 12 MPPA to 20 MPPA was expected to be completed by 2021 but the actual award of work for 2nd control period was delayed by one year and the implementation is also extended by one year for which the cost of construction is increased due to inflation. **The delay in award of work and in the implementation by one year each along with financial implication of inflation may be reviewed by AERA.**

5.4. PROCEDURE ADOPTED IN THE AWARD OF WORK

The GHIAL has submitted the procedure adopted in award of the work for Terminal building for a value of Rs. 3946.39 Crores, wherein it is observed that GHAIL had received 04 bids and out of these, 03 bidders were qualified. After evaluation of the bids, M/s L & T was found as L1 bidder and M/s Megawide as the L2 bidder.

After opening of the bids and various stages of negotiations, the work was split into two parts and both the bidders were instructed to submit the revised proposal. Based on the revised proposal of split packages the package 1 (Civil and Finishes, MEP, Elevators, Escalators, GSE tunnel, Furniture and signages) was awarded to M/S L&T Ltd and package 2 (Airport Systems) was awarded to M/s Megawide construction corporation. The GHIAL has concluded that by splitting the contracts they were able to save Rs. 50.20 Crores.

Splitting of bids after its opening is a deviation from the normal procedure, as the scope of work is not revised after bid opening. Further, had the splitting been done prior to bid invitation, there could have been more participants and thus more competition.

GHIAL has awarded the work of Design & PMC at a cost of Rs. 202.94 Crores. Further, GHIAL has tried to justify the same by comparing the percentage fee in current proposal with the previous CAPEX proposals examined by RITES. The design & PMC fee, which is 4.03 % in the subject proposal would have been acceptable provided the size of project was comparable with previous examples. However, the size of project in the subject proposal is much more and the % age fee was bound to decrease considerably.

Giving PMC of the aforesaid magnitude on nomination is a deviation from standard practice. In this case reducing the PMC & Design fee to 3% of the hard cost (Refer S. No. - 6 of Table No. 6.1, 6.2 & 6.3 for different traffic scenarios) can be considered as justified and the same has been applied in CAPEX evaluation.

6. FINDINGS

6.1. FINDINGS

The findings of the exercise with reference to scope of work are summarized as under:

a) *To examine the proposal of the airport and assess the need for the proposed project and its capacity/scope with reference to Passenger growth upto 34 MPPA /Cargo Volumes/Air Traffic Movement and also to suggest cost effective alternatives.*

1. **As brought out under para 5.1.2, the Terminal Building expansion proposal of GHIAL is commensurate to the traffic of 34 MPPA. However, the same is unlikely to be achieved by the end of third control period.**
2. **However, in accordance with the findings of ICF, discussed under chapter 03, the traffic of 34 MPPA is likely to be achieved by the year 2029-30.**
3. **Since the expansion works have already been undertaken, the option of reduction in area of Terminal Building is technically not feasible.**

b) *To examine the building standards and designs proposed by the airport operator in line with IMG norms/IATA/ICAO norms*

The existing terminal building was commissioned in 2008 before issue of guidelines on area norms by the Inter-Ministerial Group. The IMG norms have been considered for evaluating the present proposal (Deliberated in para 5.1.2)

The expansion area of 2,48,809 sqm for integrated terminal building meets the requirements of IMG norms of an Integrated Terminal for 34 MPPA.

c) *To analyze the reasonableness of the proposed cost with reference to the tentative ceiling decided by Authority vide order no. 7 dated 13/06/2016 based on the details of the rates and quantity as per government/industry approved norms and advise the Authority on the reasonableness of the costs*

As discussed under para 4.2, the unit rates recommended by RITES in its report for the 2nd control period were consistent with the Authority's order No. 7 dated 13/06/2016.

Since the development works have now been clubbed for 2nd and 3rd control period, an annual inflation of 3.02% in accordance with CIDC index has been considered for the portion falling beyond the end of 2nd control period i.e. from 2021-23.

Additional implication @ 6% for GST considered by GHIAL is found to be in order and added to the unit rates. Accordingly, per sqm rate for Terminal Building for 2nd & 3rd control period works out to Rs. 1,29,813.96 and Rs. 1,37,773.12 respectively.

However, GHIAL has considered unit rate of Rs. 1,46,713 per sqm for Terminal Building for the combined development of control period 2nd & 3rd.

The correction in unit rates of Airside works like Apron, Taxiways etc. on account of correction in rate of inflation has also been applied.

The cost of widening of existing 4 lane to 8 lane road of 05 km length has been corrected to Rs. 42.15 Crores. If the widening is considered as 06 lane road for traffic of 26.85 MPPA, then the corrected cost of this road will be Rs. 21.08 Crores. The combined cost will come out to Rs. 83.21 crores including cost of flyover.

The cost of Design & PMC has been reduced as discussed under para 5.4. Cost of Preliminaries and other miscellaneous provision have been also reduced in proportion to hard cost of construction.

Taking into consideration the above, a comparison of CAPEX prepared by GHIAL and the corrected ones by RITES for the three-traffic scenario i.e., 34 MPPA, 31.4 MPPA and 26.85 MPPA has been presented in the following three tables.

Table 6.1 CAPEX Evaluation for Scenario 1 - 34 MPPA

SN	Item	Capital Cost as proposed by GHIAL (in Rs. Crores)	Revision in Capital Cost suggested (in Rs. Crores) (With inflation/Option 1)	Revision in Capital Cost suggested (in Rs. Crores) (Without inflation/Option 2)
1	Expansion of the Terminal Building with Airport System	3728.32	3347.39	3229.89
2	Expansion of the Kerb & Approach ramp	156.40	156.40	156.40
3	Expansion of Apron and Taxiways	895.66	731.30	695.85
4	Road Infrastructure	167.00	104.28	104.28
5	GSE Tunnel	82.81	82.81	82.81
	Sub-Total	5030.19	4422.18	4269.22
4	Preliminaries	120.10	98.35	94.95
5	Insurance and Permits			
6	Design Development & PMC	202.94	132.67	128.08
7	Contingencies	243.01	132.67	128.08
		5596.24	4785.86	4620.33

Table 6.2 CAPEX Evaluation for Scenario 2 - 31.4 MPPA

SN	Item	Capital Cost as proposed by GHIAL (in Rs. Crores)	Revision in Capital Cost suggested (in Rs. Crores) (With inflation/Option 1)	Revision in Capital Cost suggested (in Rs. Crores) (Without inflation/Option 2)
1	Expansion of the Terminal Building with Airport System	3728.32	2962.00	2866.76
2	Expansion of the Kerb & Approach ramp	156.40	156.40	156.40
3	Expansion of Apron and Taxiways	895.66	731.30	695.85
4	Road Infrastructure	167.00	104.28	104.28
5	GSE Tunnel	82.81	82.81	82.81
	Sub-Total	5030.19	4036.79	3906.10
4	Preliminaries	120.10	89.78	86.87
5	Insurance and Permits			
6	Design Development & PMC	202.94	121.10	117.18
7	Contingencies	243.01	121.10	117.18
		5596.24	4368.78	4227.34

Table 6.3 CAPEX Evaluation for Scenario 3- 26.85 MPPA

SN	Item	Capital Cost as proposed by GHIAL (in Rs. Crores)	Revision in Capital Cost suggested (in Rs. Crores) (With inflation/Option 1)	Revision in Capital Cost suggested (in Rs. Crores) (Without inflation/Option 2)
1	Expansion of the Terminal Building with Airport System	3728.32	2260.73	2206.01
2	Expansion of the Kerb & Approach ramp	156.40	156.40	156.40
3	Expansion of Apron and Taxiways	895.66	731.30	695.85
4	Road Infrastructure	167.00	82.31	82.31
5	GSE Tunnel	82.81	82.81	82.81
	Sub-Total	5030.19	3313.55	3223.38
4	Preliminaries	120.10	73.69	71.69
5	Insurance and Permits			
6	Design Development & PMC	202.94	99.41	96.70
7	Contingencies	243.01	99.41	96.70
		5596.24	3586.06	3488.47

- d) *To review designs and specifications proposed in case the costs are assessed to be excessive where the Projects are already in progress or the contracts are already awarded. Further to examine whether proper procedures have been followed in the award of the work.*

The design & specifications proposed for Terminal Building & other works can be considered generally in order keeping in the view the best industry practices.

As informed by GHIAL, in the procedure for the awarding of work, it is noted that major works contract have been awarded based on competitive bids, however, the PMC of value Rs. 154.92 crores has been awarded by GHIAL to its own company without any competition. We are of the opinion that if the GHIAL had invited bids for the PMC work, then due to competition, the GHIAL could have been able to receive lower bid than at the cost at which it has awarded the work to GADL. With PMC of the of such a high magnitude on nomination is a deviation from standard practice. In this case reducing the PMC & Design fee to 3% of the hard cost has been considered as justified.

The best industry practice also demands for detailed cost estimation of work before inviting the bids, which is not provided by GHIAL.

The procedure followed in the award of work is already deliberated in the para no. 5.4 above. We are of the opinion that if the work had been split before call of tenders than it may have attracted more bids in place of 4 bids due to lower qualifying criteria of work.

- e) *To review and justify the reasonableness of time schedule of completion of work of proposed by HIAL*

The time schedule proposed by GHIAL is considered adequate and reasonable. However, the delay in award of work may be reviewed appropriately by AERA.

6.2. ANNEXURES

- 1) Annexure – 1 Minutes of AUCC for third control period.
- 2) Annexure – 2 Procedure of splitting the award of work to L1 and L2 Bidder.
- 3) Annexure – 3 Night Parking requirement of various Airlines.
- 4) Annexure – 4 ICT Equipment Details

Date 15.10.2018

Letter No. GHIAL/2018-19/SPG/1381

भारतीय विमानपत्तन आर्थिक विनियामक प्राधिकरण
सफदरजंग एयरपोर्ट, नई दिल्ली-110003

The Secretary
Airports Economic Regulatory Authority of India
AERA Building, Administrative Complex,
Safdarjung Airport, New Delhi 110003

प्राप्त
डायरी नं० 1305
तारीख 17/10/18

Respected Madam,

Sub: Minutes of AUCC Meeting for Expansion Program of RGIA

Further to our communication inviting you to participate in our AUCC process, we would like to apprise you that we have successfully conducted AUCC meeting on September 7, 2018 apprising the stakeholders of our expansion program to take terminal capacity to 34 million annual passenger (MAP) from present level of 12 million annual passenger together with matching airside and landside infrastructure provisioning.

We would like to highlight that the stakeholders were well appreciative of requirement of creating additional infrastructure to take the capacity to 34 MAP in order to meet the current and future demand.

The minutes of the meeting is attached for your perusal and record.

For GMR Hyderabad International Airport Limited


K Narayana Rao
Authorised Signatory

Encl: Minutes of AUCC meeting

Minutes of the Meeting

Subject: AUCC Meeting on Airport Expansion & Capex Plans of GMR Hyderabad International Airport Limited (GHIAL)	Date: 07 th September 2018
Venue: Novotel Hyderabad Hotel	Time: 10:30 - 13:00 Hrs.

Attendees- Stakeholders	Attendees GMR
1. Anurag Sharma – Executive Officer, CII	1. SGK Kishore – CEO, GHIAL
2. Rajat Kumar – VP, Indigo	2. Pradeep Panicker – Dy. CEO, GHIAL
3. Rajesh V – APM, TRUJET	3. Rajesh Arora – CFO, GHIAL
4. Ujjwal Dey – Associate director, FIA	4. Manish Sinha – COO, GHIAL
5. Naozad Dastur, Director AOCS, Indigo	5. Ravindar Reddy – CDO, GHAIL
6. Laurence Jacobi – Cargo Manager, Emirates Sky Cargo	6. KBS Sarma – CLO, GHIAL
7. Satyan Nayar – Security General, APAO	7. Bharat Kumar Kamdar – Head Security, GHIAL
8. Paul Vijayan I – SM, Malaysian Airlines	8. V.N.V. Bhadra Rao – Head Planning, GADL
9. M Venkateshwarlu – President, TECCI	9. Saurabh Kumar – CEO, HDF
10. Ebenezer M.J. – ASM, Oman Air	10. Venu Madhav – CFO, HDF
11. Srinivas N – Manager, Lufthansa Cargo	11. Sandip S. Ray – GM-F&A, GHIAL
12. Manish S – Director, FICCI	12. Harsh Gulati – Head Regulatory, GAL
13. Dushyant Deep– Sr. Legal Council, Indigo	13. Shweta Saini – Manager- F&A, GHIAL
14. Abdul Raheem – ASM, Flydubai	14. Ramakrishna Allada – Manager- F&A, GHIAL
15. Narayana – DM, Thai Airway	15. Other team members
16. Lily Correa – APM, British Airways	
17. Sunil Menon – ASM, Cathay Pacific	
18. Sreejith Menon – Station Manager, Air Asia	
19. Sonali Chowdhury Khaire – APM, Air India	
20. Ayoob M – GM(ATM), AAI	
21. Yoga Narasimhan – Senior VP, AI SATS	
22. J. Sridhar – Sys Manager, Bluedart	

Summary of the Proceedings

1. Ms. Shweta Saini welcomed the gathering and gave an overview of the proceedings for the day. She then invited Mr. SGK Kishore (CEO, GHIAL) to give his initial remarks on the AUCC meeting.
2. Mr. Kishore welcomed all the stakeholders and service partners. He briefly explained the gathering on the strong growth trajectory and growth of passenger traffic over the years. He deliberated that the Indian aviation sector has seen a continuous double digit growth in the last 50 months. He said that the government has also been very pro- active in addressing the

issues and pain points pertaining to the aviation sector be it airports, airlines, air navigation etc. He further stated that the Government is focused towards sustaining this double digit growth and has identified the following 3-4 major areas, which should be addressed in advance in order to capitalize the potential of India so as to make it the world's biggest aviation market by 2030:

- a. To be future ready in terms of airport infrastructure to supplement the huge order book of airlines.
- b. To optimize the air navigation system in order to maximize the airside capacity
- c. To develop the skilled manpower to cater to this growth – pilots, airside experts, air navigators etc.

He reminded the stakeholders that in 2015 GHIAL conducted AUCC for 20 Million Pax Per Annum (MPPA) expansion plan. However, while the clarity on acceptable level of per sqm capital cost took some time, the airport traffic continued to grow and GHIAL took the following steps towards ensuring provision of sufficient capacity for the immediate future as well as for the longer term:

a) **Revision of Master Plan** - GHIAL has reviewed the master plan considering the anticipated improvements in air navigation technologies and potential to maximize the overall handling capacity in line with the demand trends:

- GHIAL engaged the services of Landrum & Brown, USA, an international consultant in aviation planning and development, to re-assess the airside capacity. L&B reassessed airside capacity of current runway as 34MPPA+ considering 51 peak hour ATMs.
- GHIAL also engaged the services of NATS, UK, a global leader in Air Traffic Control and Airport Performance Consultancy, who also confirmed that the existing runway capacity can be taken to 51 peak hour ATMs.
- ICF Limited, another international consulting firm was engaged to study the traffic forecast which has projected the expected passenger traffic at RGIA to reach 35 million by FY24 which translate to CAGR of ~11.5% over FY18 traffic.
- Therefore, given the current aircraft mix, it is possible to enhance the existing terminal's capacity to 34 MPPA as against the originally planned capacity of 20 MPPA. Post review of master plan the ultimate capacity of the airport is now expected to be about 80 MPPA as against the earlier assessed capacity of 40 MPPA.
- There is a huge demand for night parking stands in Hyderabad from the airlines as they are getting large number of new aircraft delivered in near future;
- In order to address the growth, the earlier plan of enhancing the capacity to 20 MPPA is revisited and revised to 34 MPPA.
- This shall bring in significant efficiency in capital spend as the existing airside infrastructure can be optimally utilized

- b) **Capex Reconfiguration-** The regulator scrutinized the capex to increase capacity to 20 MPPA as submitted by us as part of our tariff application for the 2nd control period and the regulator engaged M/s RITES to assess the reasonableness of capital cost estimates. Based on the recommendations of RITES, regulator indicated per sqm capital cost. Meanwhile, GHIAL worked on the long term solution to offer superior passenger experience and zeroed down on merging of subsequent phases of capex to create capacity little ahead of time as expansion of an operational airport has its fair share of challenges. Considering the master plan and the traffic forecast, the convergent capacity for expansion configured at 34 MPPA.

Endeavor would be to complete the proposed expansion of 34 MPPA broadly in line with the capital cost estimates arrived at by RITES except for the inflationary increase and additional tax implications due to migration of tax regime to GST. The stakeholders were informed by CEO that the cost would be discovered through competitive price discovery mechanism.

- c) **Technology adoption-** Apart from creation of infrastructure, amplified focus is given to embrace technology in a big way to offer smart solutions to the passengers to make the airport future proof. Hyderabad airport has been at the forefront in implementing digital technologies in the past. RGIA has been the pioneer in implementation of removal of hand baggage tag stamping, express check-in and E-Boarding for complete paperless travel. The Government also is keen and pursuing Digi Yatra for promoting seamless and non-intrusive passenger facing processes. In line with government's vision we are also introducing new technological solutions as part of the expansion such as bio metric face recognition, self-bag drop, E Boarding to international passengers which are cost effective and functionally more efficient.

CEO requested the stakeholders to support and cooperate during the expansion to ensure passenger experience and service quality.

Subsequently, Ms. Shweta Saini invited Mr. Manish Sinha (COO, GHIAL) to present the Expansion & Capex plans to the stakeholders.

Mr. Manish Sinha gave a detailed presentation explaining all key aspects of the proposed airport expansion and capex plans. He informed that the Airport is currently handling 150% passenger traffic of its original design capacity and expansion is urgently needed. He explained that the company has reviewed the revised Master Plan and the capacity on the Southern side has been maximized to fully utilize the capacity potential offered by the existing runway and airside. This would also provide significant capital efficiency by doubling the overall airport capacity beyond 80 MPPA. The development/implementation strategy was also detailed highlighting how capacity is to be added ahead of demand followed by the Schematic diagram of the expanded terminal along with complete information on individual elements of the expanded facility. He also gave an overview of the short term interim facilities created /being created to tide over the 3-4 year period while the expansion progresses towards completion.

The presentation included the following topics in detail:

- Background
- Traffic growth & projections

- Need/Rationale for expansion
- Initiatives/Projects undertaken to Address Growth
- Review of Master Plan
- Overall Expansion concept
- Details of the expansion including the following:
 - Ramp & Kerb-side
 - Forecourt & Entry gates
 - Check-in counters incl. self-services provisions
 - Security channels
 - Emigration & Immigration counters
 - Baggage carousels
 - Contact stands /Boarding gates
 - Airside Development Plan
 - Allied Infrastructure
- Summary of infrastructure additions that are part of the expansion
- Estimated Capex for the Expansion
- Other Projects- Metro Connectivity to RGIA

Post the detailed presentation by Mr. Manish Sinha, the floor was made open for Q&A session which was moderated by Mr. SGK Kishore. The summary of the Q&A session is as follows.

Q#1 Mr. Rajat Kumar, (Indigo)

Currently, there are 42 parking stands and 33 (16 international and 17 domestic) upcoming contact stands and also 48 remote contact stand which makes it to 123 parking stand. However, it has been mentioned that there will be only 101 parking stands (slide #16 from the presentation displayed). So, what will be the total number of aircraft stands available?

GHIAL Response:

The expansion entails 101 parking stands which includes 56 remote contact stands and 45 contact stands. Few existing stands would cease to exist due to reconfiguration of the piers.

Q#2 Mr. Rajat Kumar, (Indigo)

There are already code C aircraft compatible parking stand. Is there any other bifurcation in the parking stand for smaller aircraft?

GHIAL Response: Aside from code C stand, there will be 4 small aircraft remote stand. The small aircraft remote stand is provisioned keeping in view the importance of Hyderabad Airport in promotion of RCS.

Q#3 Mr. Rajat Kumar, (Indigo)

Existing runway ATM capacity is considered at 51 - how it is being achieved? What is the inter arrival separation and ROT considered? What is the current inter-arrival separation and what should be the inter-arrival separation and the ROTs?

GHIAL Response: Presently, the per hour peak ATM approved is 36 with declared 8 nautical miles inter-arrival separation. We intend to bring it down in phased manner over the period of time. GHIAL is working with AAI to bring it down to 7 nautical miles within 18 months which will augment the capacity to 42 ATM. For 51 ATM, the inter-arrival movements should be 5-6 nautical miles and around 51 secs ROT for A320/B737.

Q#4 Mr. Rajat Kumar, (Indigo)

What is the timeline for increasing the ATM from 36 to 42 and then to 51?

GHIAL Response: The timeline for increasing the runway capacity from current 36 to 42 is around 18 months and it will be done gradually because there are safety procedures, air traffic control procedures, design and many other things that need to be synchronized. Also, the airside expansion capacity should go in tandem with the infrastructure development.

Q#5 Mr. Dushyant Deep, (Indigo)

After the AUCC, will the new investment (5000+ cr investment for the 34 MPPA expansion) go to AERA for scrutiny or has it been already completed based on the L&B estimates?

GHIAL Response: Post completion of AUCC process necessary capital cost details will be submitted to AERA. The per sq mtr capital cost for 34 million capex is expected to be broadly in line with capital cost (excepting for the inflationary and tax impact) already considered by AERA for 20 million capacity . This was on the basis of Authority having appointed an independent consultant, RITES in 2017 to study the capital cost proposal of Hyderabad airport. The RITES carried out a detailed study and analysis of the estimated capital cost for expansion works and the recommendations of RITES was accepted by AERA in its second control period consultation paper. Since our present cost estimates for 34 MPPA is broadly in line with the estimated unit cost of RITES, we expect regulator's approval of the capital cost. .

Q#6 Mr. Dushyant Deep, (Indigo)

Will the new investment impact the CP2 tariff submissions which GHIAL already made to AERA?

GHIAL Response: Since most of the capex shall get capitalized towards the end of CP2 /early CP3, the proposed capital investment shall not have any major impact on the CP2 tariff.

Q#7 Laurence Jacobi, (Emirates)

Will the mentioned GSE tunnel be provided for ULDs moving with all dimensional cargo when freighter are parked on the passenger terminal?

GHIAL Response: We are expecting that most of the freighters will be parked in front of the cargo terminal. The tunnel planned under the taxiway side is for connecting the eastern apron with the domestic aircraft.

Q#8 Laurenz Jacobi, (Emirates)

As the main access road is expanding from 4 to 8, is GHIAL making any provision for dedicated truck access road as at present cargo trucks cover lot of space?

GHIAL Response: Along with the expansion of the main access road (MAR), GHIAL is also planning for a dedicated cargo road (as per the cargo master plan) which will take a deviation from the MAR.

Q#9 Ujjawal Dey, (FIA)

Where does airport stand with respect to mandating the ground handling regulation 2017? Do we have 3 ground handling agents already?

GHIAL Response: The 3rd ground handler will be on-boarded by the end of October along with the AAI airports in line with the latest directions issued by MoCA. Also, we will give them another 5-6 months to be ready to start the operation.

Q#10 Naozad Dastur, (Indigo)

Could you share the phase wise timeline for the terminal building or will it be completed in 1 phase only i.e. at the end of 4 year period?

GHIAL Response: There will be a phase wise release of capacity, however, that is expected to start post 24 months from the date of award. However, GHIAL has taken some interim measures to address the growth of both international and domestic passengers. Since majority of the congestion in passenger processing are experienced at pre-SHA area, the interim measure taken to decongest pre-SHA area through creation of an interim international departure terminal which shall shift the entire international departure operations, shall address both the domestic and international growth in coming 3 years.

The Stakeholders appreciated the management for the detailed presentation and the Q&A session.

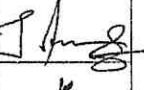
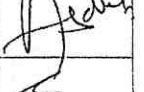
Vote of Thanks:

Concluding the AUCC meeting, Mr. Kishore thanked all the stakeholders for attending the AUCC Meeting and endorsing the Expansion and Capex plans of GHIAL and informed that any further questions or suggestions can be sent through email and the same will be responded appropriately.

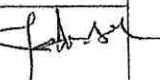
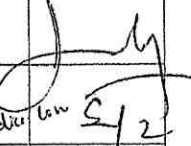
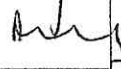
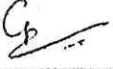
Meeting ended with vote of thanks by Ms. Shweta Saini followed by Lunch.

XXX

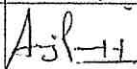
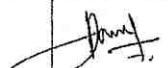
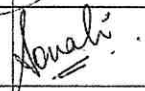
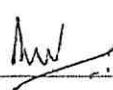
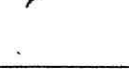
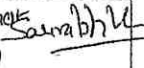
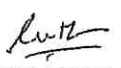
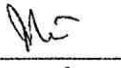
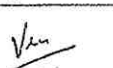
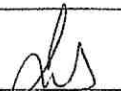
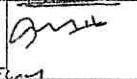
GHIAL AUCC MEETING – September 7, 2018

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12.	S. Bala Vinod	Head Real Estate	Ficci Telangana	98480 20964	vinod@ficci-telangana.in	
13.	NARAYANA	DM	THAI AIRWAY	988522 3707	HYDKETG@THAI.CO.TH	Nalays..
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GHIAL AUCC MEETING – September 7, 2018

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17.	Sauvech	Ass. Director	Indigo	—	—	
18.	Rajitha Menon	Station Hnd	HMACPL	9886443926		
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20.	Ramakrishna Akula	Manager	GHIAL	9701871558		
21.	BENU KUMAR	DT MGR OPS	HMACPL	9866799304		
22.	Sripad	ASSIST MGR	HMACPL	9704951176		
23.	Limy CORREA	APM	British Airways			
24.	SATYAN NAYAR	Secy. General	APAO	9610049639	snayan@apaoindia.com	
25.	SUNIL MENON	ASM	Calicut Pacific	9886443926		
26.	Ganesh Bhat	Prod-BE	GHIAL			
27.	MONTO BHOLA	STATION MANAGER	SRILANKAN AIRLINES	9886443926		
28.	Shelar kauri	ASM	SMV Kalas			

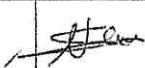
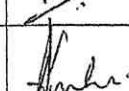
GHIAL AUCC MEETING – September 7, 2018

S. No	Name	Designation	Company	Mobile No	Email ID	Signature
29.	Venu Madhavan	CFO	Hdp. Duty Free	800811083		
30.	Anj Pandey	DM-ops	HDF	900050158		
31.	Paul Vijayan I	SM	Malaysia aisin	970317725		
32.	SONALI CHOWDHURY KHAIRE	Officiating APM	AIR INDIA	-		
33.	M. Venkateshwarlu	President	Telangana Chamber of Commerce & Industry			
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39.	V.N.V. Bhadrarao	Head planning	GADL	8897508647	nayavensha.bhadrarao.vakechula@gmgroup.in	
40.	K. Anand	MGR. OSA	MGRHS	745122094	anand.k@anandkumar.com	
41.	Raveesh Kumar	CIBO	MGRHS	9900889346	raveesh.kumar@mcgla-better.com	
42.	Ms LATIQ KHAN	ADM	GULFAIR	8142345860	Mohammed LATIQ KHAN@Gulfaair.com	

GHIAL AUCC MEETING - September 7, 2018

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55.	P. S. Ravi Kumar	Sr Vice President	CBA - Hyderabad	9848120477	psr.kumar@arklogistics.com	
56.	Adil Khan	President	CBA - Hyderabad	9245828011	adil.khan@arklogistics.com	

GHIAL AUCC MEETING - September 7, 2018

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58.	N. Surana	M.D	Surana Group	9849070000		
59.	MANISH J.	Director	FCCCI	8008070000		
60.	Lavinder Ladda	COO	GHIAL	994999108		
61.	Pradeep Pandey	by CEO	GHIAL	9910382828		PP
62.	RAJESH ARORA	CFO	GHIAL	9958895684		
63.	KBS SARMA	CLO	GHIAL	9701444856		
64.	P. Bhavani	A.M.	GHIAL	8008001673		
65.	SAR Kishore	CEO	GHIAL	9949999060		
66.	Manish Saini	COO	GHIAL	8978055222		
67.	Shuchi Saini	Manager	GHIAL	9701964442		
68.						
69.						
70.						

PROCEDURE FOLLOWED FOR APPOINTMENT OF EPC (ENGINEERING PROCUREMENT AND CONSTRUCTION) CONTRACTOR FOR DEVELOPMENT AND CONSTRUCTION OF TERMINAL BUILDING EXPANSION AND AIRSIDE INFRASTRUCTURE EXPANSION AT RAJIV GANDHI INTERNATIONAL AIRPORT, SHAMSHABHAD, HYDERABAD

Request for Qualification (RFQ) for EPC Hyderabad Expansion Works was published in the leading newspaper on 26th September 2017 to obtain expression of interest from interested applicants having prior experience in EPC of similar nature of works. (Refer Annexure-17)

In response to RFQ notification, RFQ submissions from 04 firms were received on 26th October 2017 as detailed below:

1. M/s. Larsen & Toubro Limited, India
2. M/s. Megawide Construction Corporation, Phillippines
3. M/s. Limak As, Turkey
4. M/s. Shapoorji Pallonji & Company Pvt Ltd., India

The RFQ's were opened on 01st Nov 2017 and all the submissions made by the applicants were scrutinized by the evaluation committee members. Based on the details furnished in the response to the RFQ, an evaluation was carried out to determine compliance with eligibility criteria as detailed in RFQ.

Based on the evaluation, the following Bidders were Pre-qualified to participate in the bidding:

1. M/s. Larsen & Toubro Limited, India
2. M/s. Megawide Construction Corporation, Phillippines
3. M/s. Limak As, Turkey

[The detailed evaluation report is attached as **Annexure – 18**]

Subsequent to Pre-qualification process, GHIAL had floated ITT (Invitation to Tenderer) bearing tender no. **GHIAL/EXP/EPC/2018/01** on **01st December 2017** to qualified bidders to participate in the Tender with deadline for submission of bid as **15th Jan 2018**. (Refer Annexure-19)

As per ITT, a Pre-bid meeting was conducted on **12th December 2017** with above qualified bidders and followed by site visit. An amendment (01) to the tender was issued to the bidders on **02nd January 2018**.

Post pre-bid meeting, bidders have raised 1026 queries in different phases on the Employer's Requirement and GHIAL have responded to the queries and made some amendments in the ER Drawings and Reports. Based on the above responses to the queries, bidders sought Extension of Time, the extension was granted up to 22nd march 2018.

In accordance with the RFQ requirement, following bidders had submitted their bids through Sealed Envelopes (Both Technical proposal & Price proposal) on **22nd March 2018**.

Sr.no	Name of Bidders	Bid Status
1	M/s. Larsen & Toubro Limited, India	Submitted
2	M/s. Megawide Construction Corporation, Phillippines	Submitted
3	M/s. Limak As, Turkey	Submitted

Technical proposal were opened on **24th March 2018** in the presence of Technical Committee. The Technical committee had examined the technical Proposal for completeness of submissions and found that the tenders were in order.

Committee recommended that all bidders were technically qualified as detailed below:

Sr	Qualification Criteria	NAME OF BIDDERS			
		Weightage	L&T	Megawide	Limak
	Technical rating	10.00	8.90	8.30	7.10
	Qualified		Yes	yes	Yes

Note - Details of Technical evaluation report is attached as **Annexure-20**

During the process of technical evaluation, the Committee noticed certain discrepancies in terms of understanding of Employer's Requirement. Hence, the Bidders were requested to provide Technical Presentation on scope of understanding of the Project.

The Technical presentation was made by the Bidders to the senior management of GMR and the Technical evaluation committee. Subsequent to Technical presentation from Bidders, the discrepancies/deviations noticed during technical presentation was clarified to the Bidders on **20th April 2018**. Further to the Technical Clarifications provided as stated above, Bidders raised queries on the same, seeking few additional clarifications and the same was further clarified on **25th April 2018**. There were various rounds of discussion and exchange of clarification on the Employer's requirement, all the clarification could be provided by 6th Jun'2018 and accordingly GHIAL had notified bidders to submit revised supplementary proposal by 13th June'2018.

On receipt of revised Supplementary Proposals, technical committee members reviewed Supplementary Proposal and recommended that proposals are in compliance with Employer's Requirement. As per directives of management, Price Proposals (Original and Supplementary) of EPC were opened on **04th July 2018** in the presence of Financial Committee.

Summary of first cut Pre-Negotiated Financial Comparative Statement is detailed as below:

Sr	Items	L&T	Megawide	Limak
1	Phase -1 Works			
1.1	Basic	2,445.99	2,660.85	3,348.26
1.2	Labour Cess	24.46	26.61	33.48
1.3	Taxes	440.28	478.95	608.71
1.4	Total Amount of Original Price Proposal for Phase 1 Works	2,910.73	3,166.42	3,990.46
1.5	Supplementary Price Proposal 1	36.62	47.07	-72.56
1.6	Supplementary Price Proposal 2	-36.62	3.46	-
1.7	Total incl Supplementary Proposals for Phase 1 Works	2,910.73	3,216.95	3,917.90
2	Phase - 2 Works			
2.1	Basic	1,031.53	1,090.39	1,232.88
2.2	Labour Cess	10.32	10.90	12.33
2.3	Taxes	185.68	196.27	224.14
2.4	Total Amount of Original Price Proposal for Phase 2 Works	1,227.52	1,297.56	1,469.35
2.5	Supplementary Price Proposal 1	15.02	-9.70	-
2.6	Supplementary Price Proposal 2	-1.02	-5.81	-
2.7	Total incl Supplementary Proposals for Phase 2 Works	1,241.52	1,282.06	1,469.35
	Total excl Provisional Sum	4,152.25	4,499.01	5,387.25
3	Provisional Sum	-	-	-
3.1	Total Incl all taxes, duties, cess	61.32	139.49	196.77
3.2	Supplementary Price Proposal 1	-	-2.95	-

3.3	Supplementary Price Proposal 2	-	-	-
3.4	Total incl Supplementary Proposals for Provisional Sum	61.32	136.54	196.77
4	Grand Total (1.7+2.7+3.4)	4,213.57	4,635.55	5,584.02

First round of negotiation was conducted on **11th July 2018** with L1 and L2 Bidder's. During negotiations with the bidders, various techno commercial points were discussed and clarification given. After negotiation, minutes of meeting was circulated to the bidders stating the clarification to the actual scope of Expansion Works wherever necessary and informed to submit the revised offers on or before **13th July 2018**.

Revised offers (R1) were received on **13th July 2018** and the comparative statement for revised offer (R1) is detailed below

1st round of Negotiated Financial Comparative Statement is provided below:

Sr	Items	L&T (R0)	L&T (R1)	Megawide (R0)	Megawide (R1)	Limak (R0)
1	Phase -1 Works					
1.1	Basic	2,445.99	2,453.46	2,660.85	2,574.54	3,348.26
1.2	Labour Cess	24.46	24.53	26.61	-	33.48
1.3	Taxes	440.28	446.04	478.95	463.42	608.71
1.4	Total - Original Price Proposal for Phase 1 Works	2,910.73	2,924.04	3,166.42	3,037.96	3,990.46
1.5	Supplementary Price Proposal 1	36.62	-	47.07	-	-72.56
1.6	Supplementary Price Proposal 2	-36.62	-	3.46	-	-
1.7	Total incl Supplementary Proposals for Phase 1 Works	2,910.73	2,924.04	3,216.95	3,037.96	3,917.90
2	Phase -2 Works					
2.1	Basic	1,031.53	1,034.92	1,090.39	1,021.92	1,232.88
2.2	Labour Cess	10.32	10.35	10.90	-	12.33
2.3	Taxes	185.68	188.15	196.27	183.95	224.14
2.4	Total -Original Price Proposal for Phase 2 Works	1,227.52	1,233.42	1,307.51	1,205.87	1,469.35
2.5	Supplementary Price Proposal 1	15.02	-	-9.70	-	-
2.6	Supplementary Price Proposal 2	-1.02	-	-5.81	-	-
2.7	Total incl Supplementary Proposals for Phase 2 Works	1,241.52	1,233.42	1,282.06	1,205.87	1,469.35
	Total excl Provisional Sum	4,152.25	4,157.45	4,499.01	4,243.82	5,387.25
3	Provisional Sum	-	-	-	-	-
3.1	Total Incl all taxes, duties, cess	61.32	61.32	139.49	136.54	196.77
3.2	Supplementary Price Proposal 1	-	-	-2.95		-
3.3	Supplementary Price Proposal 2	-	-	-		-
3.4	Total incl Supplementary Proposals	61.32	61.32	136.54	136.54	196.77
4	Grand Total (1.7+2.7+3.4)	4,213.57	4,218.77	4,635.55	4,380.37	5,584.02

Based on the revised offer (R1), L1 and L2 Bidders were invited for second round of commercial negotiation on **16th July 2018**

The comparative statement with revised offer (R1) was tabled to the financial committee members and Mr. IP Rao and Mr. SGK Kishore.

Based on the discussion, it was recommended to split the contract into two Packages viz., Package 1(Civil and Finishes, MEP, Elevators, Escalators/ Travellators, GSE Tunnel, Furniture and Signages) & Package 2 (Airport Systems comprising of Baggage Handling Systems, Security Systems, Passenger Boarding Bridges, GPUs,

PCAs and VDGS) that would yield substantial saving. Also separating major plant and machineries in to a standalone package would substantially help GHIAL in increasing the probability of obtaining GST input credit based on the advice from indirect tax team and consultants.

As recommended above, thorough negotiation was carried out with L1 and L2 Bidders who were instructed to submit revised proposal and optional proposal (split options) before **19.07.2018** as detailed below:

- Option -1 : Proposal with entire Scope of Works
- Option -2 : Proposal Excluding Airport Systems
- Option -3 : Proposal for Only Airport Systems

The revised offers (R2) were received on **18th July 2018**. The details of revised price proposal for split package are as mentioned below:

Sr	Description	L&T	Megawide
1	Original Proposal (Phase 1+Phase2)	✓	✓
2	Proposal Excluding Airport Systems (Phase 1+Phase2)	✓	✓
3	Proposal for only Airport Systems (Phase 1+Phase2)	Regretted	✓

Based on the revised price proposal (R2) for Split packages, the comparative statement was forwarded to the financial committee on **19th July 2018** for review and final recommendations.

Summary of Financial Comparative statement for Split Package are tabulated as below:

Sr No	Items	L&T	Megawide	L&T	Megawide	L&T	Megawide
		Option 1 (entire Package)		Option 2 (Excludes Airport system)		Option 3 (Only Airport system)	
1	Phase 1 Works	2,355.52	2,523.04	1,768.62	1,978.57	Regretted to Quote	591.51
2	Phase 2 Works	997.86	1,001.48	720.38	779.30		230.81
3	Sub Total	3,353.38	3,524.52	2,489.00	2,757.87		822.32
4	Taxes and Cess	643.17	634.43	477.39	528.96		157.72
5	Total	3,996.55	4,158.95	2,966.39	3,286.83		980.04
6	Provisional Sums (in tax)	61.32	138.32	61.32	138.32		NA
7	Final Cost incl Provisional Sum	4,058.57	4,297.27	3,027.71	3,425.15		980.04
	Rank	L1	L2	L1	L2		

Based on the above, it was agreed by the management to split the contract as per Option -2 which results in:

- Saving of Rs. 50.2 Crore
- Possibility of tax gains by way of input tax credit on Plant and Machineries.

Sr No	Considerations	Bidder	Final Contract Sum (INR in Cr)
1	Cost of L1 bidder (Option 1 – Full Package)	L&T	4058.57
2	Cost of Split contracts		
	a)Excluding Airport Systems (including provisional sum for election item)	L&T	3027.71
	b)Only Airport Systems	MW	980.04

3	Total Cost of Contract Sum (2a +2b)	4007.75
4	Savings (1 - 3)	50.82

Based on the above it was recommended to the management to award package 1 & Package 2 with the scope as below .

- a) Package -1 (Phase 1 + Phase 2): Contractor – **M/s. Larsen and Toubro Limited**
Civil and Finishes, MEP, Elevators, Escalators/ Travellators, GSE Tunnel, Furniture and Signages
- b) Package -2 (Phase 1 + Phase 2): Contractor – **M/s. Megawide Construction Corporation**
Airport Systems comprising of Baggage Handling Systems, Security Systems, Passenger Boarding Bridges, GPUs, PCAs and VDGS.

Final Cost:

Total Cost to Company and Budget approval required for the proposed Expansion Works are as detailed below:

Sr	Details of Particulars	Package -1 (Phase 1 + Phase 2)	Package-2 (Phase 1 + Phase2)
	Amount in INR (Crore)	(A)	(B)
		Larsen and Toubro Limited	Megawide Construction Corporation
1	Basic value	2,489.00	822.32
2	Sub Total	2,489.00	822.32
3	Taxes and Cess	477.39	157.72
4	Sub Total (include Cess & taxes)	2,966.39	980.04
5	Provisional sum for election items (Include Taxes & Cess)	61.32	NA
6	Sub Total (Including Provisional sum)	3,207.71	980.04
7	Grand Total (A + B) (Inclusive of all applicable taxes, duties, charges, cess and all similar levies)	4,007.75	

Basis above Contract with M/s L&T for package-1 was signed on 19th October 2018. M/s Megawide requested for considering as below explaining the reasons :

1. Limiting the Megawide's scope to overseas design and supply of Package-2 equipment
2. Local design, local supply (within India), installation, testing & Commissioning of Package-2 works shall be performed by the Contractor appointed by GHIAL
3. Megawide would take ultimate responsibility for performance of all systems as per Employer's requirement
4. Megawide would also be responsible for all defect rectification and warranties for the systems

The team of GHIAL has discussed on above arrangement with Megawide's representatives and after internal deliberations it has been agreed to

1. Sign a overseas Supply Contract with M/s Megawide
2. M/s Megawide would provide detailed design from their overseas office for supply and implementation of the Package-2 works.

3. GHIAL Will appoint a local Contractor for supply of local materials, local design, installation, testing and commissioning, trial operation and handing over.

The team was of the opinion that –

1. Splitting of Contract would not affect the performance of the systems as major scope of Package-2 works shall be import of equipment
2. M/s Megawide has guaranteed the performance of the systems and has assured they would take ultimate responsibility for performance of the systems
3. Previous arrangement was EPC (Works Contract) and chances of availing input tax credit are limited. With M/s Megawide scope limited to supply of Airport systems, GHIAL would be able to maximize the input tax credit for IGST components.

As per negotiation with M/s Megawide and L&T, the final contract sum based on the split of Package-2 works has been agreed as below:

Sl. No	Package	Contractor	Contract Sum	TAX	Total
1	Package-2 (Imported works) Design and supply of overseas components	M/s Megawide	741,56,09,926	133,48,09,787	875,04,19,713
2	Package-2 (Local works) Local design, local supply, installation, testing % commissioning	Local contractor to be appointed by GHIAL	88,98,43,954	16,01,71,912	105,00,15,866
	Total (Rs.)		830,54,53,880	149,49,81,699	980,04,35,579

Conclusion: Based on above analysis Management has felt that by splitting the order , we can save amount as well as tax implementation on project . Finally it was decided to award the contracts as below .

1. Package 1 –

For all Civil & Finishes works as detailed above to M/s L&T for **Rs 2966.39/- Cr .**

2. Package 2-

Design & Supply of Airport systems (Imported works) to M/s Megawide for **Rs 875 /-Cr .**

3. Package 3 –

Local supply & Installation, Testing & Commissioning to Local contractors for **Rs 105/- cr**

Total	Rs 3946.39 /-Cr
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By splitting the contracts as above it was beneficial to conclude the contracts for **Rs 3946.39/- cr** as against lowest negotiated with L&T for full scope for **Rs 3996.55 cr /-**

Letter No: GHIAL/ 2020-21/SPG/1497
Dated: 7th January 2021

The Director (P&S, Tariff)
Airports Economic Regularity Authority of India
AERA Building, Administrative Office
Safdarjung Airport
New Delhi 110003

Subject: Request for information for CP III MYTP for GMR Hyderabad International Airport for Capex study conducted by RITES.

Reference: Email dated 9th December'2020
Email dated 16th December'2020
Email dated 31st December'2020

Dear Sir,

This is with reference to the MYTP for third control period for RGIA Hyderabad submitted by us vide letter dtd. 23rd July'2020. The Authority has sought information vide email dtd. 9th December'2020 and 31st December'2020, regarding the proposed capital expenditure study conducted by M/s RITES. A part response to the data requirement was sent via email dtd. 16th December'2020, the response to remaining queries are as follows:

1. Request made by various Airlines for additional day and night parking:

Please find below the Airline wise night parking count for FY'21:

Airlines	Current Night Parking(Approved)	
	A320/B738	ATR/DH4
Air India & Alliance	3	4
Go Air	4	0
IndiGo	21	8
SpiceJet	6	8
TruJet	0	5
Vistara	1	0
Total	35	25
Total (A320/B738 + ATR/DH4)	60	

Further, based on input received from airlines following is the stand utilization demand (forecast) for the remaining period of the control period:

Status (Demand Forecast)	Domestic Usage	International Usage	Total
Current (FY20-21)	60	13	73
FY21-22	65	15	80
FY22-23	71	16	87
FY23-24	76	17	93

2. **Draft Indian Standard Doc. CED 29(7906) WC dt. Oct.2013 (Guidelines for Construction Project Management Part 7 Procurement Management):** We are unable to locate the referred document. You may please provide further clarity on the requirement.
3. **Projected traffic forecasting report of ICF Ltd UK:** Please find attached the excel back up and the final report by ICF Ltd UK for traffic forecasting as Annexure-1 and Annexure-2 respectively.
4. **Master planning report worked out in consultation with Landrum & Brown:** The Master Planning report worked out in consultation with Landrun & Brown is saved at the FTP link under “3. Master Plan, PTB & Airside Layout” folder. The link and the credentials to open the link are follows:

External link:

<ftp://61.95.188.11>

Credentials:

User Name: GHIAL-CDO

Password: Passw0rd@123

5. **Bill of Quantity of awarded cost and balance cost estimates** – The detailed price schedule of the awarded contracts (L&T, Megawide, VNC, MVR and Beumer India and others) and basis of estimates of balance work with details of BOQ is provided in excel format as desired (Annexure-3). The summary of the same is as below:

Particulars (Rs. Crs.)	Awarded cost	To be Awarded	Remarks
Expansion of the Terminal Building	2414.64	243.67	- Details of Rs.2343.42 Cr. of L&T Contract are attached in Schedule-A (Annexure 3). The Detailed Price schedule of L&T is attached separately (PDF Version, Annexure 3.1) - Details of Rs.71.22 Cr. is already submitted vide our email dated 31/12/2020 - Details of Rs. 243.68 Cr. are attached in Schedule-B (Annexure 3)
Airport Systems	1,029.03	40.96	- Details of Rs. 875.04 Cr (Megawide price schedule) is attached separately (Annexure 3.2) - Details of Rs.138.32 Cr (Price Schedule of Beumer India) is attached separately (to be adjusted for GST, Annexure 3.2) - Details of Rs.15.67 Cr. is already submitted vide our email dated 31/12/2020 - Details of Rs.40.97 Cr. are attached in Schedule-C (Annexure 3)
Expansion of the Kerb & Approach Ramp	150.91	5.50	Details of Rs. 149.93 Cr (VNC Price schedule) is attached separately (Annexure 3.3)

			- Details of Rs.0.98 Cr. is already submitted vide our email dated 31/12/2020 - Details of Rs.5.49 Cr are attached in Schedule-D (Annexure 3)
Expansion of Apron and Taxiway	856.02	39.74	- Details of Rs.637.76 Cr. are attached in Schedule-A (Annexure 3). Detailed Price schedule of L&T is attached separately (Annexure 3.1) - Details of Rs. 143.59 Cr (MVR price schedule) is attached separately (Annexure 3.4) - Details of Rs. 56.24 Cr (VNC price schedule) is attached separately (Annexure 3.4) - Details of Rs.18.43 Cr. is already submitted vide our email dated 31/12/2020 - Details of Rs.39.74 Cr are attached in Schedule-E (Annexure 3)
Road Infrastructure	24.23	142.76	- Details of Rs.24.23 Cr. (VNC Price Schedule) is attached separately which is part of main road Infrastructure estimate of Rs.167 Cr. (Annexure 3.4) - Details of Rs. 167 Cr. estimate is attached as Schedule-F (Annexure 3)
GSE Tunnel	82.81	0.00	- Details of Rs.82.81 Cr. are attached in Schedule-A. (Annexure 3). - Detailed Price schedule of L&T is attached separately (Annexure 3.1)
Total	4557.65	472.64	

Yours Faithfully,

For **GMR Hyderabad International Airport Ltd.**

K Narayana Rao
Authorized Signatory

Annexure 4

		20 MAP (IT COST)		GHIAL EXPANSION - ESTIMATED IT COSTING		
S.No	IT System	20 MAP (Rs. Crs)	Description of Items included in 20 MAP	Overall Package Cost (In Cr)	Description of Items included in 34 MAP	34 MAP (Submitted to RITES - Rs. Crs)
1	Structured cabling system	8.63	3300 data points	9.18	17000 data points	9.18
2	Active Network			34.50		
3	Wi-Fi	-	Wifi cost not provisioned under 20 MAP	5.22	Active infrastructure on account of 4G and 5G	0.06
4	IP Telephony	1.28	700 nos fo telephone connections	5.43	4200 nos	
5	CUPPS	19.19	70 nos - Cute; 20 nos- retro fitted SBD (in 34 MAP cost SBDs are forming part of Airport Systems); 27 nos CUTE Systems; 32 nos of CUSS Systems; 18 - E-Boarding Gates	8.85	62 nos.	
6	CUSS			6.17	50 nos.	
7	BRS			1.32	10 counters	
8	E-Boarding			53.27	126 lanes	
9	CCTV	7.61	471 nos of CCTV cameras; 26 nos of LCD screens for AOCC and SOCC	31.97	2968 cameras	20.32
10	ACS		65 nos ACS	12.04	494 ACS	12.04
11	FIDS	3.65	177 nos	12.81	526 nos	7.43
12	MATV	1.10	54 nos	2.75	131 nos	2.25
13	Video wall	2.45	3 nos	5.43	4 nos	
14	In-Building solution	1.25	1 /2" & 7/8" Copper cabling	16.99	Hybrid Active solution for 4G and 5G	
15	TETRA (TMRS)	1.80	60 nos	7.00	400 nos	1.06
16	PAS	1.58	70 nos of MA 12 speakers; 180 Nos of Ceiling Speakers and 26 Nos of Wall mount speakers	18.41	Distribuated IP based PA system with larger footprint with Speakers MA 12 – 140 nos, MSA 12 – 147 nos, Ceiling – 1690 nos and Wall Mount – 65 nos	10.78
17	Master Clock	0.34	40 nos	0.70	2 nos+40 nos	
18	Immigration Displays & P-Gates	-	Not provisioned under 20 MAP	2.07	diplay 48 , P Gates 76 gates	
19	Feed Back kiosk			4.82	105 nos	
20	Wayfinding Kiosk			0.83	4 nos	
21	NPCR			6.38	Construction of primary communication room- New Provision (was not in 20 MAP)	4.73
22	Design consultancy works for SCS			0.76	Design Consultancy	
23	Rerouting of OFC cables			0.47	Laying of optical cabiling works in ATC area	0.37
24	Others					1.05
Total		48.88		247.38		69.28