MIAL/CFO/858

8th December, 2014

The Secretary,
Airports Economic Regulatory Authority of India,
AERA Building, Administrative Complex,
Safdarjung Airport,
New Delhi – 110 003

Sir,

Ref: Consultation Paper No. 5/2014-15 dated 12th June, 2014 issued by the Airports Economic Regulatory Authority of India ("AERA/ Authority") 'In the Matter of Normative Approach to Building Blocks in Economic regulation of Major Airports'

With reference to the above, enclosed please find comments of MIAL.

It may be noted that our comments are without prejudice to our contention that "Normative Approach to Building Blocks in Economic Regulation of Major Airports" ("Consultation Paper") proposed by the Auhtority should not be applicable to CSIA/MIAL since Principles of Tariff Fixation are already specified in the Concession Agreement (i.e. State Support Agreement) entered into between MIAL and Govt. of India and tariff determination for 1st Control Period has already been done by the Authority in accordance with the provisions of the Concession Agreement and AERA Act, 2008.

Further our comments hereunder are without prejudice to the stand taken and contentions made by MIAL in any proceedings before a judicial / regulatory authority, including the appeals pending before the AERA Appellate Tribunal.

The Authority is requested to go through our attached responses and we believe that it, in light of the reasons given, would not make such normative approach to building blocks in economic regulation of major airports, applicable to MIAL.

MIAL would like to thank the Authority for providing an opportunity to give its comments for the Consultation Paper.

Thanking you,
For Mumbai International Airport Private Limited

Vinod Hiran
CFO & Company Secretary
Enclosed: as above

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1. Introduction

Authority has issued Consultation Paper No. 5/2014-15 entitled 'In the Matter of Normative Approach to Building Blocks in Economic regulation of Major Airports' ('CP').

At the outset it is submitted that the exercise undertaken by the Authority under the present CP is against the very intent and the provisions of the AERA Act and the principles of equality and fair play enshrined under the Constitution of India. The Authority is required, in discharge of its functions, to determine the tariff for aeronautical services in respect of major airports taking into consideration the various factors specified in section 13(1)(a) of the Act.

Further, the expression "aeronautical services" as defined under section 2(a) of the AERA Act clearly indicates that each of these services need to be considered in relation to a particular airport. Various services listed out in the definition of "aeronautical services" are qualified by the term "at an airport". This when read with proviso to section 13(1)(a) makes it clear that in the context of tariff determination for aeronautical services each airport has to be considered as a distinct and independent entity. There cannot be common normative parameters and a generic tariff determination for different airports. As a matter of fact, all the airports in India have different backgrounds of establishment and/or operation, which position has been clearly acknowledged by AERA in the CP itself. This difference in background regarding economic risk and reward sharing, and resultantly the need for different tariff structures, is statutorily recognized in the proviso to section 13(1)(a) of the AERA Act.

Having regard to the diversity amongst different airports operating in India, the principle of *'Equal treatment of unequals'*, which AERA is proposing to introduce by having a *'one size fits all'* normative approach, is not only unfair and arbitrary in the context of airport regulations, but it is also impermissible in law. There is a long line of decisions of the Hon'ble Supreme Court holding that while similar things must be treated similarly, dissimilar things should not be treated similarly. In this regard, it is relevant to reproduce the following observations made by Hon'ble Court in the case of ***Murthy Match Works v. Asst. Collector, AIR 1974 SC 497***:-

"In brief, equal treatment of unequal groups may spell invisible yet substantial discrimination with consequences of unconstitutionality. That dissimilar things should not be treated similarly in the name of equal justice is of Aristotelian vintage and has been, by implication, enshrined in our Constitution."

"We agree that bare equality of treatment regardless of the inequality of realities is neither justice nor homage to the constitutional principle. Anatole France's cynical statement comes to our mind in this context "The law, in its majestic equality, forbids the rich as well as the poor to sleep under bridges, to beg in the streets, and to steal bread.""

Hence, in the respectful submission of MIAL the proposals of the Authority made in CP No. 05/ 2014-15 in the matter of "Normative Approach to Building Blocks in Economic Regulation of Major

Airports" are inconsistent with the AERA Act, 2008 and also Article 14 read with Article 19(1)(g) of the Constitution of India.

However, without prejudice to the aforesaid contentions /submissions, given below are MIAL's comments on the proposals made by the Authority in the CP No. 05/2014-15.

2. Normative Approach for MIAL

In 2004-2005, the Airports Authority of India (hereinafter referred to as 'AAI') invited tenders from private participants competent to and desirous of operating, maintaining, developing, designing, constructing, upgrading, modernizing, financing and managing CSIA. GVK led consortium emerged the successful bidder and accordingly subscribed to 74% equity of MIAL and has taken over these functions from AAI wef. 03.05.2006. Pursuant tobidding process, following agreements (collectively referred to as "Project Agreements"), inter-alia, were executed between MIAL, MoCA and AAI :

1. Operation, Management and Development Agreement dated 04.04.2006 (hereinafter referred to as "OMDA") between MIAL and the AAI;

2. The State Support Agreement (hereinafter referred to as "SSA") dated 26.04.2006 between the President of India, acting through the Ministry of Civil Aviation (hereinafter referred to as 'MoCA'), and MIAL;

Further, as per Section 13(i)(a)(vi) of 'The Airports Economic Regulatory Authority of India Act, 2008' (AERA Act), the Authority shall determine the tariff for aeronautical services taking into consideration the concession offered by the Central Government in any agreement or memorandum of understanding or otherwise. Aeronautical Tariff for MIAL is to be determined as per the Schedule 1 "Principles of Tariff Fixation" of the SSA.

At the outset, MIAL would like to state that, development, expansion and operations at CSIA, Mumbai are governed by certain agreements including, OMDA and SSA. MIAL has to adhere to the design and service quality requirements prescribed under OMDA. Further, aeronautical tariffs are to be calculated based on Schedule 1 of SSA. Schedule 1 of OMDA, "Development Standards and Requirements" states as under:

"11. In respect of quality standards with regard to any facility at the Airport, the benchmarking will be the prevailing quality standards as observed in the top five international airports in the Asian region (as ranked on AETRA or analogous rating) of a similar scale and size."

On plain reading of the above, it may be noted that, the OMDA makes it mandatory for MIAL to achieve the objective and subjective service quality requirements, which are higher than the other airports in India and hence resulting requirements of the concession agreements conflict, in particular, with the space standards proposed by IMG. This may lead to a situation where airport is penalized unfairly and unreasonably for incurring certain expenditure for provision of passenger facilities in compliance with the provisions of OMDA but those facilities may not be in accordance with the proposals under CP.

The IMG report itself recognizes the limited application of any norms:

> ***"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."

On the face of it, therefore, the IMG norms would not appear to be applicable to MIAL and other PPP airports.

Even the Preface to Norms & Standards for Capacity of Airport Terminals penned by Mr. Gajendra Haldea, Adviser to Deputy Chairman, Planning Commission on April 20, 2009 also states that the norms and standards specified in the Report of the IMG are expected to serve as a guideline for formulation and implementation of projects by AAI, which implies that airports under PPP are outside the purview of its recommendations.

The bidding process for the award of CSI Airport, Mumbai was carried out on the basis of certain assumptions and parameters, which formed the basis of bidding. Further the SSA and the OMDA sets out certain specific norms and parameters for the operation of the Mumbai airport, including determination of aeronautical tariff, revenue sharing with the AAI, the identification of aeronautical, non-aeronautical and essential services etc. At para 3.1.1 of the SSA it is specifically provided that the Govt. of India *'shall make reasonable endeavours to procure that the Economic Regulatory Authority shall regulate and set/ re-set Aeronautical Charges, in accordance with the broad principles set out in Schedule 1 appended hereto'.*

Further, as stated above, Section 13(i)(a)(vi) of AERA Act requires the Authority to determine the tariff for aeronautical services taking into consideration the concession offered by the Central Government. The AERA in recognition of such provision has considered various provisions of the SSA read along with OMDA for the purpose of tariff determination for the 1st Control Period i.e. FY 10 to FY 14. It is, therefore, respectfully submitted that a deviation from the SSA and OMDA will fall foul of the bidding process and also the statutory provisions under the AERA Act. The proposed approach should not be applied to existing privatized airports where specific Concession Agreement exists.

To the extent that issues associated with norms (including for example the cost of equity) are currently subject to judicial processes, MIAL strongly believes that no decision should be reached by the Authority until the results of those proceedings are known and the Authority is able to reflect on the findings of the courts in reaching their decisions.

MIAL vide its Letter No. MIAL/CEO/134 dated 3rd December, 2014 to MoCA has stated that AERA has already finalised tariff for 1st Control period for the period FY 10 to FY14 for CSI Airport vide its Order No. 32/2012-13 dated 15th January, 2013 dealing with debt/ equity ratio, cost of equity, capex, opex, allocation of capex and opex between aeronautical and non-aeronautical. Now proposing norms divergent from already adopted position, at this juncture, is not justified. According to MIAL this Consultation Paper issued by the Authority should not be applicable to CSI Airport. Without prejudice to the above, even if the Authority decides to go ahead with proposed norms, these should be made applicable prospectively and only for the projects where work will commence after issue of final norms by the Authority and not for the past periods and for projects which are already underway.

Without prejudice to the above, any benchmarking exercise can be useful only if the airports being benchmarked are similar in nature in terms of factors such as: size, service quality requirements, demography and mix of passengers, traffic peaks, culture, climate, income level of passengers, availability of land, future requirements, and other issues, or at the very least, that all of these factors have been fully adjusted for.

Some industries have found it possible to incorporate norms more formally. To work effectively, however, the use of norms in the regulation of a specific industry such as water or electricity generation requires a set of reasonably homogenous companies; allowance of a reasonable amount of time for catch up in performance to occur and prospective implementation to the new projects.

Airports have wide characteristics, each airport differs from the other, on a range of factors such as size of airport, type of development required, type of traffic, activities undertaken and the way done, complexities of facilities, service priorities of users and service levels achieved, different climatic zones, traffic peaks, minimum wages, Indirect and Local taxes, age of assets, specific terms as per concession agreements, special requirements and obligations put by Government, capacity utilization and indexing of costs etc.

Due to reasons given above, any benchmarking exercise cannot be conclusive without demonstrating that the airports being benchmarked are similar in nature in terms of above factors or that all of these factors have been fully adjusted for.

Even Central Electricity Regulatory Commission (CERC) has recognized the differences between various generating stations (auxiliary energy consumption) viz. size of the generating stations, different type of fuel based stations etc. and has accordingly prescribed different norms.

In our view, without this, the precise benchmarking of elements of capex and opex, needed for fair and effective regulation, is not possible. MIAL is not aware of any airport regulator, worldwide, who has attempted to use this approach.

Application of norms for airports in India would lead to micro management of airports whereas worldwide the trend is towards deregulation of the airports. In UK, Stansted is completely deregulated and Gatwick is subject to lighter touch regulation.

3. PROPOSAL NO. 1 : REGARDING THE DEBT-EQUITY RATIO AND WACC

(a) The Authority proposes to follow a normative debt to equity ratio of 70:30 for the purposes of calculation of the Weighted Average Cost of Capital with 30% as ceiling and true up of WACC at the end of the control period depending on the actual proportion of equity (net worth) in the capital structure (based on the capital structure from year to year)

(b) The authority notes that in this approach, truing up is required for (i) debt: equity ratio and (ii) cost of debt.

The Use of Debt: equity Ratio for the Cost of Capital

In our view, the use of a normative debt to equity ratio of 70:30 for the purposes of calculation of the WACC is best avoided. Debt equity ratio as per actual of the airport operator company should be used, for the cost of capital or any other purpose. This allows the regulatory decisions to align with the actual financial positions of the regulated airports on the ground, and avoids the danger of the regulator making decisions on the basis of assumptions which could in practice be entirely impractical and potentially imprudent.

As stated earlier, MIAL is governed by specific concession agreements which include OMDA and SSA. Concession agreements of the MIAL do not contain any aspirational level of debt and equity. Even Chapter XIII of OMDA on Financing Arrangements & Security refers to meeting requirements through suitable debt and equity contributions without specifying any such aspirational level of debt : equity.

However, if a norm is to be adopted, the point chosen by the regulator should be intended to be prudent and efficient. In other words it is expected that neither the users nor the owners would gain by a significant shift. If, for example, more debt is adopted, then shareholders face: a higher degree of risk, a higher cost of debt, and the likelihood of more exacting covenants and other terms. It is for the owners to make reasonable decisions in this area; the basic regulatory concern is that the airport company should not encounter financial distress during the period concerned, so as to impact the interests of users. Whether lenders will agree to finance the entity at the proposed debt equity ratio without imposing exceptional restrictive conditions is an important test.

In India, fixing any norm would have to take into account the existing debt: equity ratios of the existing concessionaires. Any move to the new norm now proposed would be difficult in practice as this would potentially lead to huge restructuring costs. The regulator would also need to consider whether the cash flows are sufficient to support the debt: equity levels proposed. Some Indian airports are constrained in the debt they can finance by the high revenue shares in their concessions agreements (which were, of course, entered into before the norms proposed by AERA were envisaged). Finally the definitions used by the regulators may need to reflect the practicalities of the lender's views of financing. Lenders have treated real estate deposits as quasi equity while the Authority views them as debt without any cost (this issue is currently the subject of appeal).

Normative Debt Equity ratio in UK

The amount of debt which can be appropriately taken on, is dependent on the level of operational risk, as lenders seek to ensure there are sufficient margins to secure repayment. Higher the level of operational risk, lower the level of debt which can be justified. In line with this CAA, the regulator for BAA assumed different notional gearing for Heathrow, Gatwick and Stansted as 1.5, 1.22 and 1 respectively, based on advise by PWC .

Source: Estimating the Cost of Capital in Q6 for Heathrow, Gatwick and Stansted. Report Prepared for the Civil Aviation Authority PWC 2013

Even Heathrow, widely regarded as an example of a very low risk (by airport industry standards) the privatized airport only has a debt: equity ratio of 60:40.

The fixation of a single debt: equity ratio apart from being theoretically incorrect is also inappropriate in practice. As noted previously, quite apart from other practical issues, lenders will be reluctant to issue high levels of debt to high risk projects, and indeed may simply refuse to lend at all.

If a norm is adopted, this has an effect on other regulatory decisions. For example, having set the debt: equity ratio, it is important that the other assumptions made are consistent with this:-

- Cost of equity should be consistent with the debt level assumed, and an adjustment should be made through the beta re-leveraging formula. NIPFP also had recommended a debt: equity ratio of 1.5.
- While specifying the debt: equity ratio, the regulator would be expected to look into the credit rating and the riskiness of the project consistent with this rating (which would have originally been set based on a specific assumption on the debt burden). This in turn would determine the interest levels implied by the regulator's decision. It is this, effectively regulator determined interest rate, which would then be used for forward looking debt in the WACC, rather than the borrowing rate to be anticipated by the company at the gearing level it actually applies. This does leave some potential problems with the existing 'embedded' debt of the company which also needs to be taken into account.

Normative Debt Equity ratio applied in Power Sector by CERC

In addition to the submissions made hereinabove regarding the applicability of norms in other regulated sectors, it is submitted that AERA appears to have adopted DE ratio from CERC. However, CERC follows a very different overall approach to that adopted by AERA. The norm adopted by CERC is not applied retrospectively.

The norms of CERC in the case of electricity generation are shown below:-

"19. Debt-Equity Ratio:

1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD.

[...]

(3) In case of ... commercial operation prior to 1.4.2014, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.

(4) In case of ... commercial operation prior to 1.4.2014, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt: equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be

Source : Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014

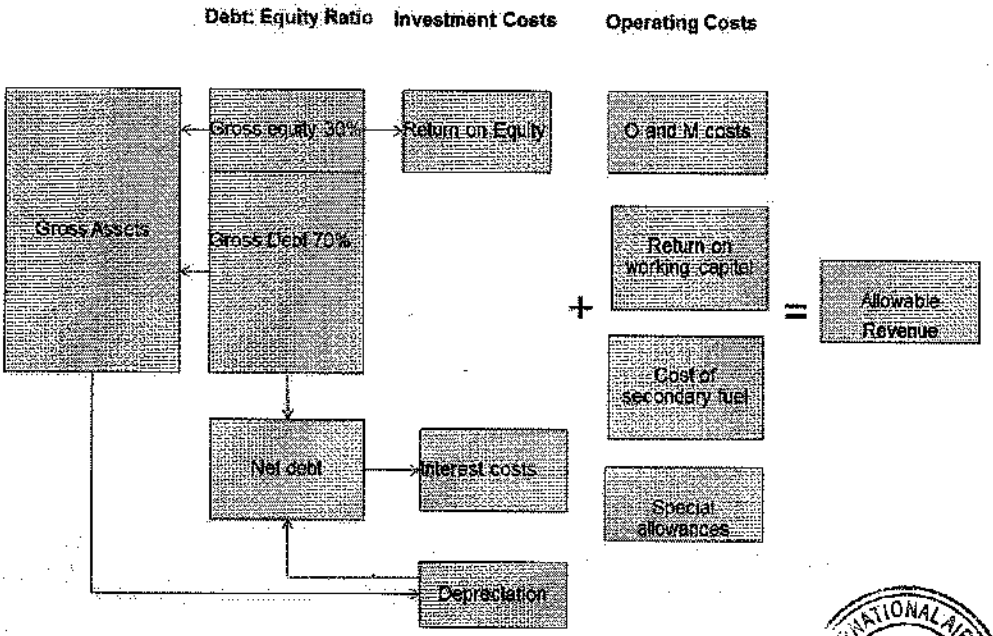
Normative ratio would lead to imposing levels of debt which may ultimately be associated with financial failure. It should be noted that NIPFP in its advice to AERA recommended a debt: equity ratio for MIAL of 1.5 – (equivalent to 60% debt: 40% equity)

Approach of CERC to regulation is based on a completely different regulatory paradigm, and is applied to individual power projects/assets rather than a power company as a whole.

CERC itself, in contrast, adopts a methodology based on a return on equity approach with a pass through of interest cost where, as a result, the building blocks do not include a return on RAB component. This approach is different from that described by AERA in its paper. CERC uses a gross fixed assets approach and does not vary equity levels unless additional capital is expended.

The 70:30 debt: equity level is simply an assumption made at the outset of the project. Hence, truing up against the norm is not a problem to CERC. The equity levels do not normally vary and certainly do not respond to accounting net worth calculations. At the same time, although the notional net debt reduces with depreciation, this is not taken account of in the regulatory process, except through lower interest charges. There is no requirement for any truing up. Our understanding of the overall approach is shown below.

Chart 3: Outline of CERC Approach



Debt: equity ratio at any established airport also needs to take into account existing arrangements, including the covenants made to existing lenders and the practicality of moving to a position of more, or less, debt as required. Proposals by AERA do not clarify the treatment proposed for other means of finances such, government grants, interest free loans from infrastructure development institutions, and refundable security deposits from real estate developments. These are specifically intended to assist the investors and not to subsidize users/customers. The current approach by AERA makes no provision for how these should be treated and how the intended assistance can be maintained.

Further, AERA should remove accumulated losses while measuring net worth. Company will suffer twice; once in the form of past losses and secondly by further reduction in earnings by reducing the return in future over the earnings deployed.

Due to above problems with applying the approach to existing airports, (and consistent with the findings in other areas in the IMG report) MIAL believes that CSIA should be exempted from application of normative debt equity ratio.

As per the Airport Benchmarking report – 2014 published by Air Transport Research Society (ATRS) average Debt Equity Ratio varies significantly from airport to airport, the average debt-equity ratio in 2012 was 1.51 for Asian airports (Asia Pacific).

MIAL View

Our overall conclusions on Proposal 1 are that:-

- MIAL believes that the simplest and most defensible approach to the debt: equity ratio would be to reflect the actual position of the company as decided by the Authority in MIAL Tariff Order for the first Control Period.
- Regulator will need to ensure that other regulatory assumptions, such as those covering cost of equity and assumed credit rating (and the associated cost of debt) are consistent with the ratio adopted.
- Level of appropriate and efficient debt: equity ratio will vary with the level of risk faced by individual airports.
- Even if a normative approach were to be adopted, the universal assumption of 70% debt borrowed from the electricity generation and transmission industry, is not appropriate to the airport industry. Application of Return on Equity approach based on CERC approach with pass through of interest to power sector is quite different to WACC on RAB/price cap approach in Airport sector which cannot be equated.
- Even CERC has not applied the 70:30 norm to all the projects but to the projects commenced on or after 1.4.2014, as against retrospective coverage proposed by the Authority applicable to all the airports.

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- For CSIA with financing arrangements which are already in place, the debt: equity ratio applied should reflect those arrangements. They should also take into account specific regulatory provisions.
- OMDA of CSIA refers to financing requirement through suitable debt and equity and does not fix any such ratio between the two.
- Such restrictive debt equity ratio fixed shall act as a deterrent and shall discourage the flow of investments towards development and privatisation of airports.
- AERA should remove accumulated losses while measuring net worth. Company will suffer twice; once in the form of past losses and secondly by further reduction in earnings by reducing the return in future over the earnings deployed.

4. PROPOSAL NO. 2 : REGARDING FAIR RETURN ON EQUITY

The Authority proposes to consider fair rate of return on equity (Shareholders funds, sometimes called Net Worth) at 16% as reasonable and on a normative basis.

MIAL would like to state that estimate of the cost of equity at CSIA is currently subject to appeal before AERAAT. In view of such appeal, MIAL believes that it is inappropriate to fix the fair rate of return at this stage and would be better to await the decision of the Appellate Tribunal and to reach at any view thereafter.

Without prejudice to the fact mentioned above, MIAL would like to point out that Cost of equity proposed at 16% by AERA, is too low in the context of emerging country airports operating in conditions where retail inflation is currently 7.31% (having previously been higher) and the current 10 year interest rate on Government debt is 8.5%.

AERA has reached its estimate of the cost of capital using the Capital Asset Pricing Model (CAPM). The CAPM formula can be expressed as:-

Cost of Equity = Risk free rate + (mature market risk premium + country risk premium) X equity beta

Different components of CAPM are nominal Risk free interest rate, Mature market equity risk premium, Country risk premium, Debt: equity ratio, Asset beta, Tax and Equity beta.

None of these are static numbers. Most vary at the very least with time, and the CAPM methodology adopted by AERA implies directly that these variations impact the cost of equity. Regulators in other countries would expect to state different costs of capital for different companies.

A number of consultants have estimated significantly higher costs of capital. This is not surprising given Indian inflation rates and the risks associated with investing in Indian infrastructure. Cost of equity of 16% as determined by CERC, leads to effective cost of equity much more than 16%, reflecting the fact that the notional equity is not depreciated while it is depreciated for airports.

Table 4 Consultant Estimates of Cost of Equity at Indian Airports

Sr No.	Name of Consultant	Cost of Equity
1	Crisil Infrastructure Advisory	18.16-20.44%
2	KPMG India Private Limited	23-24%
3	SBI Capital Markets Limited	18.5%-20.5%
4	NIPFP	11.64 – 13.84 %

AERA has derived its cost of capital from the Capital Asset Pricing Model (CAPM). However, Cost of Equity as estimated by Consultants are way higher than cost of equity of 16% as proposed by AERA.

Any cost of equity derived from the CAPM model must vary with the level of debt. We provide below illustrative figures for the cost of equity using the recommended debt: equity norms originally proposed by NIPFP in its advice to AERA on the cost of capital, and the 70:30 debt: equity ratio now proposed by AERA. It should be stressed that the figures used are selected entirely to illustrate the effect of leverage, which is not a newly proposed derivation of the cost of equity.

The Effect of Leverage on the Cost of Equity

The Table below shows two cost of equity determinations for illustrative purposes, differing only in the debt: equity ratio.

Column A is the cost of equity with assumptions adjusted to produce a cost of equity of 16% under the normative debt: equity ratio of 1.5 proposed by NIPFP. In column B the assumptions are identical but an adjustment has been made to equity beta to reflect the new debt proportion of 70%. In column C, Rf and ERP is updated based on the methodology prescribed by AERA.

	As per Order No 32 (AERA) (A)	**Updation of D/E ratio (B)**	**Updation of D/E ratio+ERM+Rf (C)**
Asset Beta	0.59	0.59	0.59
Debt Equity Ratio	1.5	2.33	2.33
Tax rate	33%	33%	33%
Equity Beta	1.18	1.51	1.51
Rf	7.25%	7.25%	7.97%
Equity Beta	1.18	1.51	1.51
Rm-Rf (ERP)	7.50%	6.10%	8.30%
Cost of Equity	**16.12%**	**16.48%**	**20.52%**

It may be noted that, a mere updation of numbers in CAPM model and following the methodology given by AERA leads to a far higher cost of equity of around 21%. Hence, MIAL believes that cost of equity should be higher than 16% which is proposed by AERA.

It is self-evident fact that not all airports face the same level of risk, and this is reflected in the investment market. For example continuation of operations at Amsterdam is not the same in investment terms as a speculative greenfield project in Columbia.

UK CAA has adopted different levels of geared and ungeared beta levels for Heathrow, Gatwick and Stansted which arguably have significant amount in common as large capital city airports serving broadly the same market.

Generally airport risk is expected to vary with a wide range of factors such as airport size, traffic mix and stage of airport development etc. These differences in risks get reflected in different asset betas for every airport. Same scale of risk across all airports is improbable.

MIAL View

MIAL overall view on Proposal 2 are that:-

- MIAL would like to state that estimate of the cost of equity at CSIA is currently subject to appeal before AERAAT. In view of such appeal, MIAL believes that it is inappropriate to fix the fair rate of return at this stage and would be better to await the decision of the Appellate Tribunal and to reach at any view thereafter.
- AERA has not given any reason or justification in support of its proposal on return on equity. The proposal of AERA is, therefore, non-speaking in nature and hence arbitrary.
- Even otherwise, we believe that the cost of equity proposed by AERA at 16% is too low and would make airport businesses non-viable. Low rate of return coupled with restrictive debt equity ratio proposed shall act as a deterrent and discourage the flow of investments towards privatisation of airports.
- Even if the initial cost of equity were correct, it would need, under the CAPM methodology, to rise significantly to reflect the new assumption about the debt equity ratio. Our illustrative example demonstrates that this could increase the cost of equity by 4% or more at the least with updation of all the numbers.
- The suggestion that the cost of equity should be constant across all airports is clearly unreasonable; asset and equity betas will also vary between companies in the same business depending on their levels of risk
- The final cost of equity capital derived from these parameters at individual airports should be calculated on the basis of their equity betas which properly reflect the combination of the relative risk of the airport and its debt: equity ratio.

5. PROPOSAL NO. 3: REGARDING USEFUL LIFE OF ASSETS AND DEPRECIATION

The Authority proposes to lay down, to the extent required, the depreciation rates for airport assets, taking into account the provisions of the useful life of assets given in Schedule II of the Companies Act or may have a useful life justifiably different than what is indicated in the Companies Act 2013 (Act 18 of 2013), assets that have not been clearly mentioned in the Schedule II of the Companies Act, 2013 in the specific context of the airport sector. The Authority has initiated the process to enable it to issue a notification as appropriate, pursuant to the provisions of Part B of schedule II of the Companies Act for this purpose.

When applying depreciation to regulatory accounts, AERA should accept that there may be some circumstances where airport owners will wish to apply different lives for specific reasons.

These could include:-

- Climate – for example exposure to Monsoon related damage;
- Maintenance approaches – which may be employed to lengthen asset lives – though possibly requiring higher operating costs
- Finance packages: the need to meet specific financing requirements may need to be taken into account when determining the depreciation profile

MIAL View:

- MIAL would like to comment on useful life of assets once Auhtority provides the clarity over the same.
- MIAL would be keen to work in cooperation with AERA, and other stakeholders, to establish a consensus on practical and prudent asset lives in the Indian context.
- When used for regulatory accounts, there should be provision for a degree of flexibility on the part of airports to vary asset lives to reflect for example: financing profiles, climatic conditions, or maintenance approaches adopted.

6. PROPOSAL NO. 4 : REGARDING OPERATIONS AND MAINTENANCE EXPENDITURE

a) The Authority proposes to true up O & M expenditure in respect of major airports in the process of its tariff determination

AERA itself has observed that efficient expenditure per passenger at airports would be expected to vary between airports on number of factors including:-

- Activities undertaken, and in particular whether key areas are performed directly, outsourced, or left to third parties;
- Traffic levels and capacity utilisation;
- Age and Extent of facilities;
- Varying Configuration of different airports like Cost of approach road.

AERA also accepts that, while the principles of CPI-X regulation support the airport retaining any gains or losses - the Indian airport industry is currently an immature one undergoing a wide range of changes with results which cannot be precisely estimated, at this stage. As a result, the difficulty in forecasting costs, and the negative impact of the uncertainty will significantly outweigh any positive benefits from incentives at this stage. MIAL therefore supports AERA's suggestion that initial charges should be set based on a reasonable charging forecast and that there should be a truing up process.

As the Indian airport system becomes more mature and costs more stable and predictable, cost forecasting will become more straightforward and the 100% true up process can be phased out, allowing the proper functioning of the CPI-X process in driving improved performance to come back into play.

In the AERA document it is proposed that the airport should be offered a target such as WPI+1% in the short term. MIAL suggests that growth rates in operating expenses should be linked more closely to cost drivers. Additionally, there should be provision for adjusting the forecasts for known changes, which might include forthcoming Government measures or the opening of major new facilities.

MIAL feels that truing up process should reasonably include all costs including the impact of foreign exchange on debt principal repayments, interest payments, bad debts written off, provision for bad debts, etc.

MIAL view :

- MIAL supports AERA's proposal for truing up of costs at this stage.
- It would be generally desirable for cost targets to be realistic in order to minimise the burden on the truing up system. MIAL therefore believes that costs should be driven by appropriate cost driver.
- Keeping in view the uncertainties faced in financing activities, the truing up process should reasonably include all costs associated including the impact of foreign exchange on debt principal repayments and interest payments.

Proposal No. 5 : Regarding Norms for Capital Costs

AERA's Proposal No. 5 proposes the following norms for capital costs.

a. **The Authority expects that while finalizing the scope of future capital works, the Airport Operator would abide by the indicated norms. As illustration,**

   I. **IMG Norms for Terminal Building(for e.g., 25m²per passenger for integrated Terminal Building**

   II. **Design criteria for Runway/taxiway/Apron (Airside works)as maybe available in published literature on the subject (ICAO Documents, DGCA CARs as may be applicable)**

b. **The Authority proposes to consider capital costs of terminal building at a ceiling costs of Rs. 65,000 per square meter or actuals whichever is lower.**

c. **The Authority Proposes to consider capital costs of Runway/Taxiway/Apron at a ceiling cost of Rs. 7,000 per square meter or actuals whichever is lower (excluding earth work upto the sub grade level). The expenditure on the earth work will be carried out as per the CPWD methodology.**

d. **The Authority proposes to consider the capital costs of other works based on publicly available standard like the CPWD methodology (for Scheduled items CPWD schedule rates and for Market Items proper market rate analysis in line with CPWD framework and methodology)**

MIAL's submissions are as follows:

1. Introduction

1.1. OMDA describes among other things, the service standards and requirements by which CSIA, Mumbai shall be developed. The OMDA also specifies Development Planning Principals like "move to common user terminals, use of swing gates to economies on number of gates, reservation for rail link, provide international range of retail and other passenger service, terminal planning to be as per IATA Airport Development Reference Manual (ADRM)" and more.

1.2. MIAL's OMDA agreement also defines the Service Quality Requirements categorized into "Objective Service Quality Requirements" like minimum connect time for transfers, maximum queuing time at check in/boarding/immigrations etc. and "Subjective Service Quality Requirements" such as sign posting, walking distances, connections, etc. through use of latest design techniques in terminal design.

1.3. The OMDA's 'Objective' and 'Subjective' service quality specifications defined are higher than IATA level of service C envisaged in IMG norms. For reference, major influencing provisions of areas and costs as per the concession agreement for Mumbai airport are as below:
Check-in – Maximum queuing time – 5 minutes for Business Class;
Check-in – Maximum queuing time – 20 minutes for Economy Class;
Lift Escalators etc. – 98% availability;
Baggage Trolleys - 100% availability;
Availability of flight information – 98%;
Security Check- 95 % passengers wait less than 10 minutes;
Passenger served by Aerobridges- 90% of annual International and Domestic passengers;
Gate Lounges – Seating availability for 80% of lounge population;
Separate International and Domestic terminal process with island concourse; and

Such provisions, being part of the OMDA, are regulatory and binding in nature for the airport operators and thus, they have significant impact on the design considerations, possibly resulting in increases in area per peak hour passenger, additional equipment, infrastructure requirements and costs thereof.

1.4. Further the OMDA specifies that in respect of quality and cost standards with regard to any facility at the airport, the benchmarking for MIAL will be the prevailing quality standards as observed in the top five international airports in the Asian region (as ranked on AERA analogous rating) of similar scale and size.

1.5. As the Authority has well noted in Consultation paper on Normative approach MIAL & DIAL projects are large scale and different from other private airport developments due to the nature of its OMDA agreement. And thus MIAL and DIAL are exceptions for proposals recommended in the Consultation paper no 5/2014-15.

1.6. MIAL has already completed majority portion of its large capital projects upon approval from its Board of Directors which includes three senior level representatives from Airports Authority of India, one of whom is Joint Secretary, Ministry of Civil Aviation (MoCA), also noted by AERA in point 1.11 of the Consultation Paper no 5/2014-15.

1.7. Further as duly mentioned by the Authority these completed projects have been audited by Independent Technical experts and financial consultants. The Authority has noted the project costs for MIAL T2, after disallowing certain elements on basis of the audit. MIAL's Terminal development cost is established in AERA's Development Fee order no. 29/2012-13 dated 21-12-2012.Further to avoid "gold platting" MIAL's OMDA defines process of vetting the benchmarking report by the Independent Engineer for international airport projects.

1.8. MIAL has duly completed the benchmarking process established to avoid any padding of costs and submitted the Benchmarking Report to AAI in compliance with OMDA agreement.

1.9. MIAL is currently completing the remaining works of its new Terminal 2 and associated works. These works include extension of the existing Terminal building processors with

concourse/piers and connecting aerobridges which are designed in line with the development standards and requirements of OMDA for gate seating's and the quality standards established in the completed portion of Terminal 2.

2. Summary of MIAL's observations and recommendations.

2.1 MIAL believes that the normative proposals in its current form restricts MIAL' performance under the OMDA with respect to the quality of standards. MIAL also believes that the normative norms being considered by the Authority will have adverse impact on safety, levels of services and passenger experience. Furthermore it will restrict the growth potential of MIAL and the development of large international standard airports in India.

2.2 The AERA consultation paper intends to introduce "one size fits all' approach. When it comes to airport infrastructure, no two airports are the same because airport planning, design and quality and services provided will depend on airport's business strategy as to whether it is an Origin-Destination airport, Hub, LCC terminal, profile of its traffic, rate of growth, engineering and geological conditions, local conditions etc.

2.3 The IMG report has acknowledged that Airport terminals are highly complex pieces of infrastructure and their configurations and layouts respond to the target markets and proposed levels of service but also reflect local constraints and challenges. For example, construction of a high international mix passenger terminal on a constrained terminal development site will require a different solution to the construction of a low international passenger mix terminal (dominated by domestic passengers) on a less constrained site. The outcomes in terms of area per mppa or peak hour passenger are likely to be very different for these two scenarios. Therefore flexibility in space provision and not 'one size fits all approach' is required to allow airport operators to respond to the local market and conditions.

2.4 With regard to Unit Area Norms, the 2009 IMG Report referred to in CP too acknowledges that one size fit all approach cannot be adopted. The IMG report states "An airport terminal should be capable of handling peak hour passenger traffic at the target level of service standard in the design year. The terminals should be sufficient not only for passengers processing but should be able to meet other requirements like travellers requisites, commercial activities, food courts, bank, post office etc. Different bodies / authors have suggested different values for Unit Area per php. It is for these reasons no international regulator or the long established international governing bodies such as IATA, ACI, ICAO have adopted any prescriptive "one size fits all" approach as envisaged in AERA's consultation paper.

2.5 AERA has suggested that integrated terminals in India should be constructed using the IMG norm of 25 sqm per Peak Hour Passenger (PHP). It is understood that this norm originated from AAI, although there does not seem to be any background analysis available on how this norm was derived, and therefore how it should be applied. Without a clear basis showing how the 25 sqm/PHP has been derived and how it should be applied could result in misinterpretation and incorrect application by different airport operators. For example, some airport operators might assume that this norm applies to the total airport area, whereas others

may assume that it applies to the passenger processing areas only.

2.6 AERA may note that there is already an answer to this problem of adopting a blanket 'top-down' area space standard across different terminal types at different locations with different operating models, goals, service standards and business objectives. There is an internationally recognized approach to airport terminal planning that can accommodate all this natural variability; this is enshrined in the IATA Airport Development Reference Manual (ADRM). The advantages to using the IATA method for defining the required space within a passenger terminal are very clear:

- It is the internationally recognized method;
- It is based on a clear and scientific 'bottom-up' methodology;
- It allows local traffic characteristics to be taken into account;
- It allows the space to be provided to vary according to target levels of service; and
- It is a methodology recognized and supported by airports key customers – the airlines.

The ADRM passenger terminal space calculation methodology is a 'bottom-up' process using locally specific parameters. However, ADRM also does give some 'top-down' guidance on the space that should be provided on a PHP basis. ADRM9 says that "Experience has shown that, when designing facilities for purely domestic or charter passengers, the corresponding maximum sqm/PHP figure should not exceed 25 sqm and 30 sqm respectively." ADRM10 indicates that 35m2/PHP should be provided for international passengers.

MIAL therefore recommends that international IATA Airport Development Reference Manual (ADRM) should be used as the guide for terminal planning and unit areas planning.

2.7 2009 IMG Report very clearly acknowledges the need for airports to remain competitive. More specifically, the IMG Report states "The design and approach towards Airport Terminals has undergone a radical change. Earlier, a terminal was a building where a passenger commenced and concluded an air journey. In the present times, a lot more is expected from Terminal- not only it should be functionally efficient, it should also be aesthetically and architecturally appealing. It encompasses a wide variety of activities related to aviation leisure, comfort, shopping and business apart from Customs, Immigration, and Security etc. Comparison with a 'World Class' airports in neighbouring countries is also a crucial factor in planning Airport Terminals".

2.8 With regard to Unit Cost of Construction, Authority may note that Airport facilities can reasonably vary in specification and price for a number of compelling reasons including traffic type, degree of peaking, facility specifications, the needs of users, and local costs and conditions etc. There are a wide range of such issues influencing the cost of airport terminals, most of which may account for legitimate differences between the costs of airport passenger terminals across India. It appears that AERA may not have accounted for all these factors while proposing Rs. 65,000 per sqm. Authority may also take note that the indexed construction costs expended for all the recently developed major airports in India show that construction cost varies from location to location and from trade to trade due to various factors is in the range of Rs. 112,000 – 148,000 per sqm, significantly above the suggested

Rs. 65,000 per sqm.

2.9 With regard to Unit Cost of Construction, again 2009 IMG Report too very clearly acknowledges that one size fit all approach cannot be adopted. The IMG report states "Construction cost is mainly driven by the target Level of Service Standards. The location is another important factor. The cost of construction generally increases by about 10% in difficult and remote areas".

2.10 IMG report concludes "In an airport terminal, the cost of construction is 'facilities' and 'finishes' driven. It is, therefore, imperative for planners to achieve a judicious balance between design specifications and cost associated with each element. 'Value for the Money should be the motto'. Since the architects, project engineers and contractors of a project may have the tendency to over-design and use expensive finishes, there should be some institutional check and balance for specifying an indicative / benchmark unit cost within which an airport should be designed and constructed. The cost of construction is, however, dependent upon various variables. It is easily impacted by location factors. Therefore, it may not be possible to lay down any general norms in this regard. It is, at the same time, important to benchmark the cost of construction across projects being implemented with similar planning horizon. IMG is of the opinion that for appropriate benchmarking, an in-house appraisal mechanism could be established in the Ministry of Civil Aviation. The Appraisal Committee established by MoCA should assess the reasonableness of the proposed unit cost of Airport Terminals costing more than Rs.150 crore. 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. 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 costs".

Authority may note that a similar process is already in place for MIAL where the review and oversight is performed by MIAL's Board of Directors. This is further supported and strengthened by provisions in SSA with Government of India and OMDA with AAI wherein parameters for Review of Major Development Plan (MDP) have been set out in para 3.8 of SSA for incurring capital expenditure in MIAL and para 8.4 of OMDA.

2.11 MIAL therefore submits to AERA that it does not support any arbitrary and restrictive approach of establishing ceilings for Area and Unit costs for the following reasons:

a. IMG Reports was issued in 2009 and needs to be updated. IMG report also does not recommend one size fit all approach. No AAI airports appear to have been built in full compliance with the said area norms.

b. AERA has not provided any detailed calculation for the Area or Unit Cost ceilings. However, we understand that AERA has used CIAL cost while proposing the ceiling cost. We strongly believe that establishing unit cost ceiling using CIAL is incorrect, since it is relatively a small O&D airport and positioned by its own management as a Low Cost Terminal whereas MIAL has to serve multiple market segments to establish itself as the Regional Hub. The construction of CIAL's low costs terminal has just commenced and the cost of Rs. 43,333 per sqm indicated in the CP does not include complete fit out costs.

The complete build out costs is estimated to be in the range of Rs. 67,000 per sqm to Rs. 92,000 per sqm depending on the year of construction. Furthermore it is not an integrated Terminal which will require additional processors and facilities and therefore costs.

c. Terminal costs are clearly related to the quality/specifications and performance/ operations. Terminals with lower cost/sqm would vary from Terminals with higher cost/sqm on either of these parameters. Thus cost/sqm factor cannot guarantee a value for money but lowers quality of the infrastructure in terms of appearance or performance. "Value for money" or " cost effectiveness" should be analysed on basis of the throughput/ productivity. Terminal costs should be analysed on basis of cost/ mppa to assess the spend per passenger in line with the tariff determination process which also considers annual passenger throughput.

d. The proposed norms have the risk of constraining MIAL's ability to meet its OMDA obligations specifically with regard to quality standards and development guidelines. Furthermore "one size fit all" approach will severely curtail MIAL's growth prospects and its ability to compete in India and in the global stage.

e. GOI and AAI have established very clear parameters for MIAL for finalising future project costs in SSA (para 3.8) and OMDA (para 8.4.1 and para 8.5.8). Accordingly AAI can validate the reasonableness of area and costs by appointing its own independent auditors and Independent engineers.

2.12 **MIAL's View on Proposal no. 5 are as follows:**

a. With regard to area norm MIAL strongly recommends that international IATA Airport Development Reference Manual (ADRM) should be used as the guide for terminal planning and unit areas planning in line with OMDA requirement.

b. MIAL does not support or recommend to fix the Terminal ceiling cost of Rs. 65,000 per Sqm.

c. With regard to Runway/Taxiway/Apron ceiling cost of Rs. 7000 per sqm, MIAL recommends that normative design and specifications should be established along with the proposed unit cost. Appropriate cost adjustments should be made where there are deviations from the normative design and specifications.

3. MIAL's detailed comments on Proposal No. 5a are as follows:

3.1 MIAL's OMDA agreement also defines the Service Quality Requirements categorized into "Objective Service Quality Requirements" like minimum connect time for transfers, maximum queuing time at check in/boarding/immigrations etc. and "Subjective Service Quality Requirements" such as sign posting, walking distances, connections, etc. through use of latest design techniques in terminal design.

3.2 As mentioned in para 1.4 above, the OMDA's 'Objective' and 'Subjective' service quality

specifications defined are higher than IATA level of service C envisaged in IMG norms.

Such provisions, being part of the OMDA, are regulatory and binding in nature for the airport operators hence they have significant impact on the design considerations, possibly resulting in increases in area per peak hour passenger, additional equipment, infrastructure requirements and costs thereof. In essence, the achievement of the service standards defined in the concession agreements is in part, a direct result of the amount of space provided. So it seems a somewhat perverse arrangement to restrict space provision whilst at the same time imposing service quality levels (with financial penalties for under-performance) on the airport operators.

The likely impact of the above provisions on the terminal areas and costs is indicated in **Table below**:

OMDA Provisions	**Likely Impact**
Check-in – Maximum queuing time – 5 minutes for Business Class	▪ Increased areas due to higher number of check-in counters to meet the requirement ▪ Cost impact
Check-in – Maximum queuing time - 20 minutes for Economy	▪ Increased areas due to higher number of check-in counters to meet the requirement ▪ Cost impact
Lift, Escalators, etc. availability – 98%	▪ Increased areas due to 98% being served through Vertical and horizontal transfer (VHT) systems ▪ Cost impact
Baggage Trolleys - 100%	▪ Increased areas for high stacking requirement ▪ Cost impact
Availability of flight information – 98%	▪ Cost impact
Security Check- 95 % passengers wait less than 10 minutes	▪ Increased areas due to higher number of security check counters to meet the requirement ▪ Cost impact
Passengers served by Aerobridges- 90% of annual International and Domestic passengers	▪ Increased areas due to increased length of piers required for in-contact stands ▪ Increase in number of Aerobridges ▪ Cost impact
Gate Lounges – Seating availability for 80% of lounge population	▪ Increased areas for higher seating requirements ▪ Cost impact
Incorporate reservation for rail link	▪ Major impact on the designs, circulation, service facilities resulting in increased areas ▪ Cost impact
Separate International and Domestic	▪ Increased areas for higher and segregated

terminal process with island concourse	check-in requirements ▪ Cost impact
In respect of quality standard with regard to any facility at the airport, the benchmarking will be the prevailing quality standards as observed in the top five international airports in the Asian region (as ranked on AETRA ACI analogous rating) of similar scale and size	▪ High standards requiring more area provisions ▪ Cost impact to meet high standards and specifications

3.3 Thus, IMG norms for unit area and unit cost for private airports should benchmark relevant / equivalent projects. MIAL's benchmarking report developed on mandate given in OMDA and similar lines as mentioned in IMG clearly indicates an integrated terminal building of larger scale has an average area of 45sqm/php. The reason being the OMDA performance standards have significant impact on the design considerations, resulting in increases in area per peak hour passenger, additional equipment, infrastructure requirements and costs thereof.

3.4 Authority may note that the IMG norm was established in 2009 as guidance for AAI airports. The IMG report 2009 clearly states that "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."

3.5 MIAL has discovered that this norm is used as a "guiding factor" for sizing of terminals, while the actual design is based on IATA's Airport Design Reference Manual (ADRM) to calculate peak hours and individual processors at AAI airports.

3.6 It is observed that none of the new airports constructed by AAI recently have integrated terminals and furthermore even Kolkata has only a partially integrated airport.

3.7 IMG Report 2009 has not considered any international airports in arriving at the norms and hence they cannot be considered as international standard. However, IMG report section G clearly states that International best practices should be considered for establishing norms relating to area or cost for PPP projects. Hence if the AERA wishes to establish area norms for PPP projects, such norms should be established only after conducting a detailed benchmarking exercise including relevant international airports and making the report available for consultation. IATA latest ADRM version indicates average of 46sqm/php upon benchmarking airports across the world.

3.8 As IMG norm were recommended in 2009 and since then various changes to Airport operations and passenger requirements have occurred. Therefore, Authority may note that these new requirements need to be taken into account if IMG is to be used as a yard stick for

future terminal designs. Some of the changes at Indian Airports since 2009 that affect the area planning of Terminal:

1. Visa on Arrival for 180 Countries (July 2014)
2. 100% Screening for level 2 of the inline BHS system (Nov 2011)
3. Security screening at entry of Terminals (Aug 2011)
4. Dog Squads established at airports since (Jan 2011)

3.9 Authority also needs to note that IMG norms of 2009 are based on IATA ADRM edition 9 which defined Level of Service C. The latest IATA ADRM edition 10 now completely redefines level of services and also indicates average of 46 sqm/php upon benchmarking airports across the world.

IATA ADRM 10th edition says that "experience has shown that, when designing facilities, the maximum SQM/PHP figure should not exceed 25 sqm for purely domestic passengers, 30 sqm for charter passengers and 35 sqm for international passengers." However, IMG norm recommends pure Domestic terminals with traffic above 1000 php should not exceed 20 sqm/ php and International Terminals shall not exceed 27.5 sqm/ php. This is far lower than the International standards and hence IMG norm cannot be referred as "international standards".

If IMG norm is to be referred in its current form it will restrict the Airport operator's ability to comply with the mandate of following IATA norms for designing Terminal buildings.

4. MIAL's detailed comments on Proposal No. 5b & 5c are as follows:

4.1 Authority has not provided any rationale and detailed calculation on how the ceiling of Rs.65000 / Sqm for Terminal costs when most of the recently completed Terminals including that of AAI are in the range of Rs.1,10,000 / Sqm and upward.

4.2 Terminal cost is dependent on various factors i.e. geographical, design specifications, etc and hence there cannot be a single cost for all. Terminal developments within India unless there is a normative design and normative specifications established for all terminal developments.

Table below lists few prominent elements which impact the construction cost.

Sr. No.	Factors	Reasons for Impact on cost
A	**Design Requirements: Building Structural design conditions**	Many parameters affect the construction design. Not only does a building need to be appealing to the eye, it has to be structurally sound. Wind loads, high water areas, seismic zones, coastal regions, cyclone prone zones, soil conditions / soil bearing capacity, loading capacities etc all impact on the design. The type of construction such as structural steel or RCC framed conventional building is a major factor. All types of construction design will differ based on the material or combination of materials used. Other important factors are the building code guidelines and fire safety guidelines in effect in a particular area.

B	**Statutory Requirements and Economic Factors**	Reasons for Impact on cost
i	Exchange rate fluctuation	This fluctuation has a significant effect on the cost of materials imported for the construction of terminal buildings., considering that the cost of imported materials for the terminal building development ranges between 20% to 25%
ii	Indirect taxes, levies, Octroi, warehousing charges, Minimum wages etc	Construction Cost includes the purchase price of the goods/services, indirect taxes, levies, Octroi, warehousing charges, etc. The incidence of the costs is directly related to various parameters which change interstate & intra state. There is no tax uniformity across India. Mumbai is subject to additional burden of octroi ranging from 5.5% to 7%, likewise Bangalore is subject to entry tax. Further, cities like Mumbai wherein the incidence of local body taxes as well as the State Taxes are among the highest in the country and also all other expenses like warehousing, labour, logistics, space constraints which affects all aspects of business, etc are considerably higher than other cities. This significantly increases the cost of construction. The supply chain links i.e. the sourcing of the materials and services also has an impact on the variation in the costs. **Minimum wages applicable to different locations are not uniform across India** and shall vary from city to city and from state to state, likewise the cost of living is not uniform; impacting the cost of managing the project. Cost is also subject to variations due to change in codes, laws, economic factors, taxations, currency variation, change in technology, new directives from airport authorities, ICAO, DGCA, BCAS, Home Ministry, Aviation Ministry and other applicable authorities.
iii	Price escalation in materials and labour due to inflation	The Construction cost in India has increased in last few years, mainly due to rising labour and materials costs. Hence, the terminal building developments completed at different periods are not comparable for construction costs since inflation impacts the final construction cost.
iv	Increase in fuel prices	The fuel price in India is highly unstable. Fluctuations in fuel prices have affected the cost of construction significantly.
C	**Airport design and facility requirements**	
i	Capacity, facilities and size of the airport	The extent of facilities required in the terminal buildings of airports differs greatly. Hence, the cost per sqm of construction is incomparable between the facilities. The facilities and equipment assessed include the following: ▪ Check-in facility - Counters for Domestic & International ▪ Conveyor belts at arrivals for Domestic & International ▪ Aerobridges ▪ Equipment

		✓ Baggage Handling System ✓ Scanners/Material screeners/Metal detectors ✓ Other Equipment such as Elevators, Travellators, Escalators ✓ Chiller, DGs, Transformers ▪ Additional requirements – which include demonstrable energy efficiency (with LEED Certification), baggage handlings systems incorporating baggage reconciliation systems and sorting systems, and space for secondary services and systems. ▪ Multiple use of facilities - Usage of CUSS counters along with traditional check in counters, CCTV surveillance systems, Airport Operations Control Centers, transfer facilities, day hotels or sleeping pods, kids play areas, food courts etc. Each of the above mentioned airport systems, equipments and facilities has direct impact on cost depending upon the capacity, size and facilities requirement of any particular terminal building; as such it is very difficult to fix up one cost of such facilities for all terminals.
ii	Terminal configurations	The terminal configuration (integrated terminal or non-Integrated terminal) significantly affects the cost per sqm of the terminal building development. The incorporation of swing facilities for both domestic and International use within a truly integrated airport terminal increases the efficiency of the facility so that it can handle more passengers per given area. Therefore, any cost per sqm comparison between an integrated terminal building and non-Integrated terminal building is not appropriate. Terminal mode of operations such as Domestic requires lesser facilities, so lesser space and hence lesser cost. International operations on the other hand require more facilities and cater to longer dwell period passengers. As such International Terminals need more facilities, more space and subsequently more cost.
iii	Requirements of Airlines and passengers	The types of flights and airlines served will determine many of the principal design features of a terminal, including airport wide services, baggage handling, IT, gate design and retail requirements etc. Terminals dealing primarily with low cost or regional passengers may, for example, have different facility requirements and different demands for check in desks, gates or aerobridges.
iv	Sourcing of materials and equipment	The sourcing of the materials and equipment for the construction of the airport terminal buildings considerably impacts the cost of construction.

		The cost of imported materials or equipment used in the construction significantly impacts the overall costs. There cannot be a defined measure, as this would depend on the material, its volume and the source. As per discussion with Kolkata airport, AAI placed bulk order to Bukaka to supply aerobridges, which, as per feedback obtained from Kolkata airport, resulted in cost advantage to AAI due to economies of scale. Private operators do not get cost advantage due to single order with fewer numbers of aerobridges, a reason for cost escalation of the terminal building of the private developers.
v	Building finishes level / specifications	A wide range of finishes and material specifications exist for the choice of construction and fit-out of the terminal building. Such choice of materials, finishes and specifications impacts the cost of construction. The foundation of the building may be piling or footings as per the local soil conditions and structural design for stability will therefore vary. Similarly the flooring may be granite, marble or verified tile flooring which results in different costs. A wide range of choice is available for wall and ceiling finishes as well.
vi	Selection of right and efficient combination of MEP equipments	The selection of Chillers, DGs, Transformers, Light fixtures, CP & Sanitary fixtures significantly impacts due to cost differences between products. Some of the capex are discretionary but have a trade off with the lower OPEX like LED lighting, lighting control system, automation, efficient chillers and transformers etc. Degree of automation, integration of system, complexity of system changes accordingly to the size of airports and therefore impacts the cost of equipments like VHT, HVAC etc. Building components that use significantly less energy or have a higher life expectancy may well result in lower total costs for users to bear, when compared to products which are initially lower cost. Life-cycle cost studies are essential to compare the initial costs, and the repair, maintenance and replacement costs of alternative specifications. Specification of components with shorter life-spans, such as services and finishes, must be carefully considered, not only in terms of cost effectiveness but also to reduce

		maintenance that might obstruct airport operations. With operations and maintenance (O&M) costs being one of the largest elements in every airport's budget, it is critical to consider the long-term implications of making short-term cost reduction decisions.
D	**Other factors**	
i	Locational factors	The construction cost varies for each location like disposal area, amount of excavation, differing site conditions like applicable seismic zone, water table height, rock strata or poor load bearing condition of soil, availability of raw material for construction like sand, Murom etc (due to banned mining the cost of sand had unreasonably gone up beyond imagination), access to port for bulk imports, construction water availability, local construction norms etc.
ii	Climatic / weather conditions during construction period	The adverse weather conditions will affect the progress of construction projects. Hence, additional time and costs are expended due to the delays caused by the adverse climatic conditions during the course of the construction. For e.g. in Mumbai, during monsoon for a period of almost 3-4 months, significant progress cannot be achieved due to heavy rain conditions.
iii	Presence of already operational facilities / development of brown field airports	In a brown-field project like Mumbai Airport's T-2, the total terminal building cost also included the cost of relocating existing operational and functional uses, assets of Airport Operator /Airlines/etc. In a land-constrained airport like CSIA, a large amount of enabling / relocation work is associated with any new construction. Furthermore, the relocation process dependent on existing user agencies is time consuming and leads to cost escalation. It should also be noted that, the cost of enabling works and cost for maintaining continuity in ongoing operations boosts construction costs for brown-field projects or expansion/ enhancement projects compared to a green-field construction. Thus, setting a single benchmark of costs for all terminal construction works is not appropriate. The availability or unavailability of space for a labour camp and on-site fabrication affects the construction cost. In the case of CSIA Mumbai, due to the need to work around an operational airport, there was limited availability of space for storage of construction materials and for provision of a labour camp close to the work site. So CSIA was forced to store the materials at warehouses at distant locations.

		Additional cost is therefore incurred for such warehousing, labour accommodation and transportation of materials and labour back to the site, which may not be the case with green-field airports. Furthermore, due to space constraints at operational airports, changes in construction methodology different from conventional methodology require additional scaffolding, use of heavy cranes for longer period, and other resources, which impacts the overall cost of terminal development.

4.3 The cost of recently built major terminal buildings is presented below, which have also been referred in AERA CP 05/2014-15.

For purpose of comparison, corrected Terminal costs and areas have been considered:

- Mumbai Airport - Revised cost to completion and area has been considered.
- Bangalore Airport – based on BIAL inputs for corrected area and cost.
- Kolkata Airport – based on AAI submission to AERA vide letter no: AAI/CHQ/REV/AERA/AS/2012 dated 8th August 2012.
- Chennai Airport - based on AAI submission to AERA vide letter no: AAI/CHQ/REV/AERA/AS/2012 dated 8th August 2012.

The changes are as in Table below:

Sr. No.	Airport	Area as per AERA report in Sqm	Corrected Area in Sqm	Cost as per AERA CP No. 5 (in Rs. Million)	Corrected Cost (in Rs. Million)
1	Mumbai - New Terminal T2	4,39,512	4,31,672	50,830	54,000
2	Bengaluru - Terminal 1 Expansion	85,000	161,110	12,352	19,454
3	NSCBIA, Kolkata – New Integrated Terminal Building			15,530	21,546
4	Chennai – New Domestic and Int. Terminal.			15,470	14,765

Further, as the construction of these terminals have been undertaken at different period of time, the costs have been indexed to the current period (June 2014), so as to enable comparison of these costs. The indexed cost is presented in Table below.

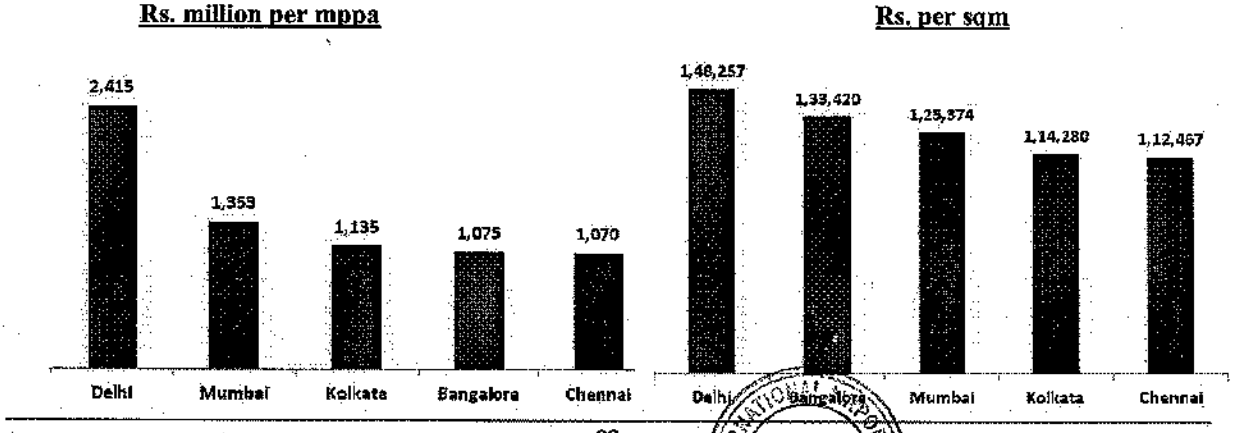
MUMBAI INTERNATIONAL AIRPORT PVT. LTD. MUMBAI 400 099.

Summary of Completion and Indexed Costs for Recently Constructed Major Terminal Buildings in India

Particulars	Unit	Delhi	Mumbai	Bangalore	Kolkata	Chennai
Terminal compared		T-3	T-2	Upgraded T-1	New Terminal	New Terminal
Terminal Building Area	Sqm	553,887	431,672	161,110	198,692	133,142
Terminal Capacity	Mppa	34	40	20	20	14
Total completed cost	Rs. million	68,360	54,000	19,454	21,546	14,765
Indexed Cost (June 2014)	Rs. million	82,117	54,120	21,495	22,706	14,974
Indexed cost/Sqm	Rs. per sqm	148,257	125,374	133,420	114,280	112,467
Indexed Range for Terminal Building cost	Rs. per sqm	112,467 – 148,257				
Indexed cost/mppa	Rs. mn per mppa	2,415	1,353	1,075	1,135	1,070
Indexed Range for Terminal Building cost	Rs. mn per mppa	1,070 – 2,415				

Note: The Cost Indices related to the Mumbai, Delhi, Bangalore, Chennai and Kolkata Airport development periods under 'Urban Infra' have been sourced from The Construction Industry Development Council - CIDC website for analysis. The cost indices are available for various locations / cities on a monthly basis.

Comparison of Indexed Terminal Development Cost



4.4 It is evident from the above Table that the construction costs of recently built major terminal buildings in India (built by AAI and through PPPs) typically range between Rs. 112,000 per sqm to Rs. 148,000 per sqm on for normalized cost rebased to June 2014, which is much higher than the ceiling cost of Rs. 65,000 per sqm as proposed by AERA.

Kolkata and Chennai Airports are not bound by any concession agreements requiring them to comply with additional service levels/quality of construction etc., apart from AAI's own standards and requirements. Even so, the terminals at Kolkata and Chennai Airports are developed at a much higher cost level than the norm proposed by AERA (Rs. 65,000 per sqm).

It can also be seen from the above Table that the indexed cost per sqm for the integrated terminals developed under PPP arrangements at Delhi, Mumbai and Bangalore Airports are relatively high as compared to the costs for other benchmarked airport terminals. It would be appropriate to mention here that the PPP airports are governed by concession agreements which generally stipulate stricter service levels to be followed and provision for high quality service at these airports.

It may also be noted that Mumbai Airport terminal is brown-field development requiring redevelopment/expansion of terminal facilities at operational sites. This imposes major complexities in planning and execution of the development project including undertaking of enabling works. Such complexities and enabling works result in higher cost of development due to restrictions on movement of goods and people, provision for alternate processing facilities, time restrictions, need for multiple handling, etc.

4.5 As development costs vary due to the timing of construction, physical location, customer base and many other factors, as mentioned above, setting a single index such as cost per sqm as a maximum development cost (especially when the ceiling value of that index is at what is considered to be a very low level) will impose severe constraints on airport developers and, at the level suggested by AERA, will result in a degradation of perceived quality.

4.6 Therefore, terminal construction cost effectiveness through a cost per mppa also needs to be taken into account as an additional measure. ICAO also uses productivity/efficiency as a key 'Performance Indicator' for airports performance. As per ICAO, cost effectiveness refers to the financial input or costs required to produce a non-financial output i.e. total cost per passengers. AERA should thus evaluate airports for their productivity and cost effectiveness and incentivize efficiency.

The evaluation by this measure demonstrates that there are alternative ways to assess cost. As can be seen from above table and graph, there is a significant cost variation amongst the various airports on a per sqm basis, the cost per mppa is generally uniform except in the case of Delhi Airport. Thus, significant variation in the results obtained from cost per sqm and cost

per mppa, clearly indicates that there is 'no single parameter' which is complete in itself for comparing two different terminals.

Thus, Terminal developments costs are evaluated on basis of cost/sqm relate to quality of construction and service or on basis of cost/mppa relate to the productivity aspect and effectiveness. These two cost parameters can bear varying results and hence cost of Terminal cannot be benchmarked only on a single parameters like cost/sqm which is influenced easily by drop in quality/specifications. Low cost terminals with lower cost/sqm cannot be compared with mega Terminals serving full service carriers and having integrated terminals.

4.7 As explained above, essentially the cost of construction of an airport terminal, to a large extent, is based on the planning requirements and design specification of the terminal So unless planning and design norms, specifications, customer requirements and operational service standards, followed for works and various airport systems of constructed terminals are compared and understood in the context of each of their specific physical and functional requirements, just comparing the cost would not help to understand the reasons for variances in the costs of the terminals. Also, for the future, unless terminal planning and design norms are standardized in the Indian context, pre-empting the cost of a terminal (such as applying a cost per sqm norm) cannot be achieved. Therefore, any 'one-size fits all' approach is not appropriate for Terminal Building cost – as larger terminals often require more complex facilities leading to higher CAPEX. A range of other factors mean that what is cost effective at one terminal may not be at another.

4.8 With regard to the ceiling cost of Rs.7000/sqm for Runway/Taxiway/Apron pavement works MIAL notes that Airfield pavement cost is dependent on various parameters like:

1. Type of Airport Development – Method of construction will vary from a Green Field to Brown field development as in operating airports limited time period is available for execution and this demand additional equipments, manpower and other resources incurring additional costs.
2. Structural Design – The cost of civil part of pavement depends on structural design consisting of several layers which are dependent on variables like type of pavement (flexible or rigid), design life, sub grade strength that is the CBR value for flexible pavement and k value for rigid pavement, critical aircraft type and more.
3. Incidental charges – such as AGL, drainage, civil costs, basic strip, turfing etc
4. Geographical location of the project like linkages to source of material.
5. Local regulations – working time limitations, labour wages, octroi etc.
6. Environmental issues relevant to specific site conditions and norms imposed for specific projects.

4.9 MIAL would also like to mention that Airfield Pavement Design is not standard for all airports as it depends on the variables as below:

1. Type of pavements – Flexible or Rigid or Hybrid pavement
2. Design principles – Basis of design depending on process adapted or software used for

purpose of design calculation.

3. Aircraft mix – Aircraft mix is an input that is to be considered while determining the pavement design as damage caused by each aircraft is different depending upon its main gear location, loading characteristics etc. As airport size increases, generally heavier and larger aircrafts start operating and this impacts pavement design to larger extent.

4.10 MIAL thus determines that ceiling cost for pavement works can be applied if there is a standard design with set specifications. Authority is requested to provide the specifications and designs for ceiling proposed. Variations from these design parameters or specifications due to Site specific conditions should be accommodated when arriving at final allowable costs.

4.11 MIAL endorses the view in IMG report Section G that in case of PPP airports a case by case approach with respect to unit area or unit costs needs to be adapted based on judicious consideration of International best practices and financial viability. AERA tariff order to MIAL i.e. Order No. 32/2012-13 dated 15th January, 2013 stipulates detailed verification of capital expenditure by independent auditors including user consultation. Therefore, further arbitrary normative measures are not justified.

4.12 MIAL therefore does not support the need for establishing 'one size fits all' for area and cost norms especially for major international airports such as CSIA. MIAL requests Authority to allow applying the parameters set out in SSA and OMDA for finalising the future project works.

7. PROPOSAL NO. 6 : REGARDING AERONAUTICAL AND NON-AERONAUTICAL ASSETS ALLOCATION

a. **The Authority proposes to make the aeronautical and non-aeronautical in 80:20 ratio for the Terminal Building and common use assets**
b. **The Authority proposes to consider the cost of Airside operational assets (including boundary wall and roads) that are meant for aeronautical services**

As stated earlier, operations of MIAL are based on specific concession agreements which include Operation, Management and Development Agreement (OMDA) and State Support Agreement (SSA). Concession agreements of the MIAL neither do contain any aspirational level of non aeronautical assets nor any provisions for normative allocation of the assets.

As per the reports issued for Allocation study for MIAL by KPMG as well the Statutory Auditor i.e. Brahmayya & Co. the ratio of Aeronautical assets to Total assets varies within the range of 88% to 92% during FY 10 to FY 14.

Table: % of Aeronautical Assets to Total Assets

	FY 10	FY 11	FY 12	FY 13	FY 14
As per KPMG	90%	92%	91%	91%	NA
As per Statutory Auditor	88%	90%	92%	91%	89%

Authority has already decided on the asset allocation process in the tariff order i.e. Order No. 32/2012-13 dated 15th January 2014. Authority has also already appointed an independent consultant i.e. ICWAI-MARF for determination of aeronautical assets of the Company. It would be best if Authority forms its opinion over aeronautical % of assets based on independent consultant report along with reports of KPMG and Statutory auditor of MIAL instead of using any normative % for allocation of assets.

As noted previously, IMG report specifically states that these indicators are intended for AAI airports rather than for privatised / PPP airports where standards should be set prior to inviting the bids for private participation on a case by case basis. However, without prejudice, suggestion of IMG in their report 'Norms and Standards for Capacity of Airport Terminals' is that:

'*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 percent 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 up to 20 per cent of overall area*'

However, a number of observations emerge from this:-

- The Inter Ministerial Group does not prescribe an absolute 20% as 'one size fits all' and gives a normal range of 8% to 12% and has indicated that in case of bigger airports with annual passenger capacity of more than 10 million , the commercial area could go upto 20%. MIAL is within the specified range.

- At Mumbai airport with over 10 million passengers, the proportion of non aero assets 'up to' 20%, is an aspirational maximum and there is no suggestion anywhere and in the concession agreements that the Non Aero Assets at the airport should actually be at this level.
- In our view this level of Non Aero Assets in the Indian context would prove to be counterproductive and lead to diminishing returns as weaker concessionaires will be brought in to fill the space and arrive at the aspirational or desired level of 20%. The approach is intended to be used for planning purposes. It is not intended to refer to existing facilities.

Study done by KPMG for MIAL and Certificate by Statutory auditor of the Company suggest that allocations are fully consistent with the range of 8 – 20% suggested by IMG and not at the highest end of 20% as proposed by the Authority. The Authority itself acknowledges that the level of space it has observed is around 85% aeronautical: 15% non-aeronautical.

The observations only cover floor areas. Further, a large proportion of terminal costs are related to plant and equipment in areas such as outbound and inbound baggage and aerobridges (as per Schedule 5 of Aeronautical services in OMDA). The vast majority of these costs will refer to aeronautical activities. Once the full assets are taken into account, we would expect the proportion of non-aeronautical assets to drop below the levels indicated by area in isolation.

In our view the use of the AERA norms would appear to be inappropriate for MIAL, where allocation plays a central part in regulation. Processes can be refined over time and for a body of decisions to be built up, making the allocation process increasingly more straightforward. As noted earlier, it would be possible to in principle require airports to have their allocation processes certified by accounting firms, as is done in other countries.

The extent of non-aeronautical operations and therefore division of costs would be expected to differ substantially between terminals at different airports. Some of the factors influencing the extent of non-aeronautical activities are shown below:

1. **Traffic Levels**: A number of non-aeronautical activities will require a 'critical mass' of passengers/traffic for them to be viable.

2. **Type of traffic**: A small terminal will only be able to justify a very limited range of shops and catering often open for limited periods, while a large terminal can support a wide range of choice with full time opening. International traffic will normally support more retail than domestic traffic to countries, such as China or Japan, supports high sales based on a 'gift culture' in those countries. Business passengers normally have lower retail demand than leisure. Requirements of low cost air traffic may be different from those of full fare air traffic.

3. **Activities financed and undertaken**: Third party financing of activities such as shops, retail, food and beverage and car parks will reduce the airport's own level of assets and costs related to these activities.

4. **Location of offices and back up services**: Many of these can be sited outside main terminal

buildings or even off airport altogether; depending upon the location of these, a corresponding reduction in non aeronautical assets shall be observed.

In any case the application of the rate proposed is inappropriate at this stage, based on the very limited evidence which AERA appears to have used.

We agree with AERA that the overall allocation of assets will be affected by the level of investment by the airport itself. Clearly to the extent that retail, food and beverage, car parks or other non-aeronautical assets have been partly financed by a third party, these would not contribute to the non-aeronautical share of assets. Moreover, some airports may be undertaking non-aeronautical activities in-house whereas others may be outsourcing them. The same allocation ratio cannot be appropriate to the two circumstances. Some assets, such as main access roads, are absolutely required by the airport and would need to be in place at essentially the same level, even if there were no non-aeronautical activities. In such cases the assets should be allocated 100% to the aeronautical side. The presence or the extent of non-aeronautical activities does not drive or contribute to the cost of such assets. Even in circumstances where the use of a norm was regarded as appropriate, there should be provision for an airport to bring forward compelling evidence that the norm proposed was not suitable in their case.

MIAL View :

- The allocation should be based on actuals and not on the basis of top of the range suggested in IMG report.
- Concession agreements of the MIAL do not contain any provision for normative allocation of the assets.
- The system of allocation of aeronautical assets and non aeronautical assets is already decided in the tariff order, which is further certified by independent experts. This process already in place should be continued by Authority, instead of setting such normative ratio between aero and non aeronautical assets for CSIA.
- The Authority should wait for the report from independent consultants / experts appointed by it to arrive at the assets allocation and not make proposal based on IMG report.

8. PROPOSAL NO. 7: REGARDING ALLOCATION OF O&M EXPENDITURE BETWEEN AERONAUTICAL AND NON-AERONAUTICAL SERVICES

a. The Authority proposes to make the allocation of O&M expenditure between aeronautical and non-aeronautical services in 80:20 ratio

The points raised by us in respect of proposal no.6 regarding allocation of assets also hold good for this proposal regarding allocation of O&M expenses between aero and non aero services. It appears that allocations have been made across all the activities and not just the terminal and not even an aspirational floor area split has been referred.

As per AERA 'proper separation of operating activities into aeronautical and non-aeronautical activities is relevant, particularly if the Authority were to make computations of aeronautical tariffs (including User Development Fees) on shared revenue till.' MIAL agrees with this but believes that the normative approach proposed by AERA and the 80:20 ratio proposed for allocation between aero and non aeronautical expenses is entirely inappropriate.

The consequences would be significant in some cases. At Mumbai Airport the aeronautical: non-aeronautical costs for first control period have been allocated after systematic study as under:

	FY 10	FY 11	FY 12	FY 13	FY 14
Aeronautical % of Operating expenses	90%	85%	84%	82%	85%

A normative 80:20 allocation could mean upto 10% of costs will get disallowed in first control period.

Direct tailored cost allocations should only be used at airports where regulation is based on a revenue share approach. Such allocations have been applied robustly at airports such as Mumbai and Delhi. We believe that such expense allocation should continue with all the airports where relevant, where such allocation of expenses shall gain maturity with experience. Allocations would be more straightforward and less contentious in future. Airports in other countries are also required to have their allocation processes certified and such process of getting them certified by independent experts should continue in India.

MIAL View:

- Concession agreements of the MIAL do not contain any provision for the normative allocation of operating expenses.
- The current process for allocation of expenses as decided already in the tariff order, an effective approach, should be continued by the independent experts.
- The allocation should be based on actuals of individual airports, such fixed norms cannot be made applicable across the board to all the airports.

9. **Proposal No.8: Regarding Incentivising Airport Operator to Increase NAR and Truing Up**

The proposal of incentivisation of airport operators to increase non-aeronautical revenues will not apply to Delhi and Mumbai Airports.

MIAL View

- MIAL supports the exclusion of Mumbai and Delhi from this scheme.