

AERA Building,  
Administrative Complex,  
Safdarjung Airport,  
New Delhi - 110003

Date of Order: 06<sup>th</sup> June, 2016

Date of Issue: 13<sup>th</sup> June, 2016

**Subject:- IN THE MATTER OF NORMATIVE APPROACH TO BUILDING BLOCKS IN ECONOMIC REGULATION OF MAJOR AIRPORTS-CAPITAL COSTS REG.**

The report of the Inter Ministerial Group (IMG) on the "Norms and Standards for determining the Capacity of Airport Terminals" was circulated by MoCA in September 2008 (Revised January 2009).

2. As regards the Unit Cost of Construction, the report states interalia as below:

*"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."*

3. The Authority, in its Consultation Paper No. 05/2014-15 dated 12.06.2014 in the matter of Normative Approach to Building Block in Economic Regulation of major Airports observed that Capital Expenditure of Airports depends on the scope, engineering and specifications of the facilities proposed to be created and as far as the scope for Terminal Building is concerned IMG Norms should be followed. Based on analysis of various factors and the costs submitted by Airport Operators, the Authority proposed that it would take into account allowable project cost with a ceiling of Rs.65,000 per sqm or actual whichever is lower for the purposes of Regulatory Asset Base (RAB). Similarly the Authority proposed to consider capital Cost of Runway/Taxiway/Apron at a ceiling cost of Rs.7,000 per sqm or actuals whichever is lower (excluding earthwork upto the subgrade level ).

4. Subsequent to the issue of Consultation Paper No. 05/2014-15, a Stakeholder Consultation meeting was held on 26.06.2014 in this office of Authority. Interested stake holders had submitted their responses on the Consultation Paper and these were uploaded on AERA's website vide Public Notice No. 13/2014-15 dated 15.12.2014.





5. The Authority, while examining the tariff proposals of various airport operators has noted that the Project costs in many cases have been much higher than the rates envisaged in the Consultation Paper. It is also observed that the cost of terminal building, runway and other airside assets constitute a major portion of project costs.

6. Subsequently, the Authority also visited Cochin Airport (CIAL) and held discussions with the officials of CIAL. Based on the details furnished by CIAL and discussions held with the officials at the airport, the cost per sq. meter of Terminal Building, apron etc. have been calculated. A copy of the project cost calculation of Cochin Airport is at **Annexure 'I'**. Based on the information available at present with the Authority and considering the facilities and finishes provided at Cochin airport which are of international standards, the capital cost incurred by CIAL for Terminal Building and Pavement (Runway/Taxiway/Apron) is found to be reasonable.

7. The scope of work along with related specification considered by the Authority based on the cost of Cochin Airport was forwarded to various airport operators to indicate the cost for each component along with alternative specification, if any. The details are awaited.

8. Meanwhile the major airports for whom tariff is to be fixed for the second control period have submitted their MYTPs. It would not be prudent to allow capital costs that are significantly higher than what has been incurred at Cochin. There may be certain variations due to cost of financing, locational advantages etc. Even allowing for these variations, the costs are not likely to exceed the figure of Rs. 65,000 per sqm as given in Consultation Paper No. 05/2014-15 dated 12.06.2014.

9. The Airport being a Public Infrastructure project, the related assets for such project need to be created through efficient costs on value for money basis. Accordingly, the cost of CIAL can be taken as a reference level and considered as prudent cost/ a benchmark while analysing tariff proposals of airport operators. The scope and specification worked out by the Authority in respect of overall cost of terminal and pavement is placed at **Annexure-"II"**.

10. Though the Authority is aware that a more thorough process is required before finalising the norms on capital costs, there is a need to have at least a tentative basis to fix the ceiling cost of Terminal building and Apron for the airports while evaluating the tariff proposals of various airport operators and determine the tariffs for the second control period, for which certain guidelines require to be formulated.

#### **ORDER**

11. Thus the Authority, in exercise of powers conferred by Section 13(1)(a) of the Airports Economic Regulatory Authority of India Act, 2008, hereby orders that

- i Pending finalisation of a norm in this regard after going through a more rigorous process, the tentative ceiling cost of Rs.65000/- per sqm of the terminal building and Rs. 4700/- per sqm for the Runway/taxiway/Apron (excluding earthwork upto sub-grade level) is approved as a reasonable benchmark for evaluating capital costs to be incurred by Airport Operators of major airports for the purpose of tariff determination on a tentative basis.





- ii The airport operators are advised to relook at the costs proposed in their submissions and justify the increase, if any, over and above the ceiling rates as indicated above.
- iii The Airport operators are expected to evaluate the costs in adoption of various alternatives finishes and the corresponding benefits that accrue to users in case of adoption of such alternative higher specifications.
- iv In case the rates are higher than the ceiling rate approved by the Authority, the justifications, so submitted by the airport operators on actual incurrence of the cost shall be examined by a duly constituted Committee of experts to be constituted by Authority and based on their recommendations the final costs will be adopted.
- v These ceiling rates shall apply only in case of new projects where the works are yet to be awarded. In case of awarded projects, the capital costs will need to be examined by the committee approved for the purpose.

By the Order of and in the  
Name of the Authority

  
Puja Jindal  
(Secretary)

To

1. Airports Authority of India,  
Rajiv Gandhi Bhawan,  
New Delhi.  
(Through: Shri S. Raheja, Chairman)
2. Delhi International Airport Pvt. Limited,  
New Udaan Bhawan,  
Opp. Terminal 3, IGI Airport,  
New Delhi - 110037  
(Through: Shri. 1. Prabhakara Rao, Chief Executive Officer)
3. GMR Hyderabad International Airport Pvt. Ltd.,  
GMR Aero Towers, 4 th Floor,  
Rajiv Gandhi International Airport,  
Shamshabad,  
Hyderabad - 500 409.  
(Through: Shri SGK Kishore, Chief Executive Officer)
4. Mumbai International Airport (P) Limited,  
Chhatrapati Shivaji International Airport,  
First Floor, Terminal 1B, Santacruz (E),  
Mumbai - 400 009.  
(Through: Shri R.K. Jain, Chief Executive Officer)



5. **Bangalore International Airport Pvt. Ltd.,  
Alpha-a, Administration Block,  
Kempegowda International Airport,  
Devanahalli,  
Bangalore - 560 300.  
(Through: Shri G.V. Sanjay Reddy, Chairman & Managing  
Director)**
6. **Cochin International Airport Pvt. Ltd,  
Nedumbassery, Kochi Airport P.O.,  
Ernakulam - 683 111,  
Kerala.  
(Through: Shri V.J. Kurian, IAS, Managing Director)**
7. **Chandigarh International Airport Ltd.  
New Civil Air Terminal Village,  
Jureri, Mohali – 140306  
Punjab  
(Through: Shri Jai Bhagwan Saini, Chief Financial Officer)**
8. **Kannur International Airport Ltd.,  
“Parvathy”, T.C. 36/1, N.H. Bypass, Chacka,  
Thiruvananthapuram,  
Kerala – 695024  
(Through: Shri Jayakrishnan Sivadasa Kurup, Chief Financial  
Officer)**





New International Terminal Building Salient features ,Scope, Finish and its cost break up- Cochin Airport				
Sl.no	Approved Scope	Type or specification	Cost break up INR Crore	Remarks / Comments
1	Site Development (earth filling)	Yes		Inclusive in terminal cost
2	Terminal building 1,50,000 SQ. M	3 level (0 to +2 level)	460.99	Separate utility building of 4000 Sq.M
2A	Civil Works RCC + Steelframe	Column free check in and security hold		RCC Framed Column span 12 to 25 M
2B	False ceiling Type			
i	General Public area	Special shape and finish All area		Inclusive
ii	Toilets area	All area		Inclusive
iii	Office area	All area		Inclusive
2C	Floors Finishes -Type			
i	General Public Floors	12mm specially made vitrified Johnson		Inclusive
ii	Toilets Floors	12mm Johnson		Inclusive
iii	Office area Floors	10 mm standard Johnson		Inclusive
2D	Water supply system	Yes		Inclusive
2E	Sewerage treatment	Yes connected with existing system		0.65 MLD STB, 60 Lakhs litre UG tank Inclusive
3	Technical Features of Terminal Building		150.26	
3A	Internal electrification system	Yes		Inclusive
3B	Fire alarm & detection system	Yes		Inclusive
3C	Firefighting system, system	Yes		Inclusive
3D	Signage, Flight Information Display	Yes		Inclusive
3E	Air-conditioning and heating or Air-conditioning	3000TR		Inclusive
3F	Substation, AC Plants, other utility Building – SQ.M and part of Terminal or separate	4 DG Total 9MVA + Transformers		Inclusive
3G	Security surveillance system	Yes		Inclusive
3H	Furniture	Yes		Inclusive
3I	Trolley, Wheel Chairs	Yes		Inclusive
4	Other Equipment		142.44	
4(A)	Aerobridge (10 nos) +VGDS	TIANDA		
4(B)	Escalators (5 nos)	THYSSAN		Inclusive
4(C)	Elevators (16 nos)	THYSSAN		Inclusive
4(D)	Walkalators (total-meters in 3 sections)	THYSSAN for arrival and departure		Inclusive
4(E)	Baggage conveyors, carousal for arrival (90 M loop length, 5 nos expandable to 6 nos) and departure systems (3 island) 56 Check-in system)			Inclusive
4(G)	Other equipment – specify			
5	Airlines related interface and services		74.66	
5A	CUTE CUPPS CUSS BRS service			Inclusive





5B	Boarding Control service			Inclusive
5C	Passengers data interface with custom and immigration is part of Airlines IT or Airport CUTE			Inclusive
5D	In line screening of baggage	100%		
5E	Standalone X-ray and its screening	Provisioned		Inclusive
6	Car parking and approach road		108.58	
6A	Car park (multi-level or ground level)	Ground level	31.09	Inclusive
6B	Approach road including lighting	4 lane road	66.16	Length – 2.5 KM
6C	Railway over bridge		11.33	
7	Elevated Fly over	In front of terminal	34.57	
8	Apron and pavement –2.5 Lakhs Sq. meters	Code E + Dedicated Apron taxiway code F	165.10	
8A	Pavement Code E+F		108.39	
8B	Rubble ,soil stabilization road Highmast Apron lighting and AGLlighting		56.71	
9	Other services		13.00	
10	Horticatures, Landscape	Not extensive -Minimum		Inclusive
11	Boundary (Compound) wall (operational & others)	Partly enveloped terminal		Inclusive
12	Total likely project cost	As of August 2016	1149.6	12A+12B+12D
12A	Terminal total including equipment		828.35	Total of 2,3,4&5
12B	Apron and pavement including filling		165.1	Sl.no 8
12C	Apron taxiway –only pavement		108.39	Sl.no8A
12D	Carpark, elevated Fly over and other works		156.15	Sl.no 6,7 & 9
13	Abstract cost per Sq.m			
13A	Terminal including all E&M equipment	Total Terminal floor area 150000 +utility floor area 4000= 154000 Sq.M	Rs 53789 per Sq.m	
13B	Apron and taxiway for code E +Partly for Code F		Rs 4336 per Sq.m	Excluding earth filling and soil stabilization





Overall cost of Terminal and Pavement (Apron, Taxiway, Runway) considered by the Authority		
Sl.no	Item and its scope	Ceiling Cost per Sq.M
1	<p><b>Construction of Terminal Building:</b> Terminal Building, fully Air-conditioned and meeting the building code for fire alarm, firefighting, water supply and sanitary.</p> <p>Substance Equipment for Power supply including Standby generating units and related system.</p> <p>Passenger facilitation including flight information display and security surveillances, directional and information signage etc.</p> <p>Airlines related services of check-in, CUTE, CUSS, Baggage reconciliation system.</p> <p>Equipment namely in-line X-ray screening, standalone screening, required numbers of Baggage conveyors both for arrival and departure, Escalators, Travellators and Elevators and passenger Boarding Bridges. Any other passenger services, Aircraft operational services as part of Terminal process facilities.</p> <p>The cost indicated is exclusive of Land cost, diversion of facilities and site development namely earth filling cost, EB deposit for their line and demand but inclusive of IDC, taxes for finished Terminal.</p>	Rs 65000
2	<p><b>Construction of Pavement (Apron Taxiway, Runway):</b> construction of pavement for Code E Aircraft excluding earth filling as part of site development and soil stabilization. For Code F Aircraft or any other design load the Airport operator shall justify with the cost of additional volume of concrete</p>	Rs. 4700

#### Notes

- Finishes (floor & ceiling) and the shape of the building selected may vary from one Airport to another. As the Public Project – Airport is managed by its Board of Directors the management is free to select the design finishes & specification. Authority expects the JV Company to evaluate various alternatives finished and its corresponding cost benefits that accrue to users in adoption of higher finishes. Selection of finishes, specifications shall be driven by “Value for money principles.” The rationalized cost indicated above has taken into account various type of flooring, ceiling cost, other variables.
- Consultation with the concessionaire and users to be ensured as per AERA Direction and policy.
- The Airport operator is expected to determine the cost as per publicly available standard like CPWD norms for scheduled items and market rate analysis for non-schedule items.
- The Authority has considered the above bench mark cost as prudent and “value for money” cost as of April 2016. The cost index for Civil and Electro- mechanical works published by Government can be considered for future construction as appropriate.
- The aeronautical element of above cost will be applied for aeronautical service tariff determination and the above cost is applicable for all major airports.

