

Comments on TRAI's Consultation Paper on Access Facilitation Charges (AFC) and Co-location Charges (CLC) at Cable Landing Stations

Introduction

1. Access to Facilities at submarine cable landing stations (CLS) is an essential input for many telecom services. Any unnecessary access restrictions in any form tend to limit an operator's competitive scope to provide international telecom services at an affordable rate. In recognition of the critical nature of Cable Landing Stations (CLS) and the importance of ensuring competitive access to these facilities, the Government of India took action in 2005 to amend the relevant clauses in all ILD Licenses to enable the TRAI to issue regulations to ensure efficient, transparent and non-discriminatory access to essential facilities (including landing facilities) for submarine cables at Cable Landing Stations. Subsequently, on June 7, 2007, the TRAI issued regulations, "International Telecommunications Access to Essential facilities at Cable Landing Stations Regulations, 2007," to increase competition and reduce international bandwidth charges by mandating access to submarine cable landing stations.
2. In the "Explanatory Memorandum to the International Telecommunications Access to Essential facilities at Cable Landing Stations Regulations, 2007," the Authority stated as follows:
"The Authority is of the view that adequate competition is not there at present in accessing international bandwidth. Therefore, to create effective competition in the sector, Cable Landing Station-Reference Interconnect Offer (CLS-RIO) needs to be mandated for

the owner of all cable landing stations including those would be commissioned in the future.” (Explanatory Memorandum to TRAI said Regulation at Page No. 36.) The Authority also stated that it was “of the view that to have reasonable and fair charges, the need is to have such charges on cost oriented basis.” (Explanatory Memorandum to TRAI said Regulation at Page No. 42.)

3. Accordingly, the regulations provide that the AFC should be “determined on the basis of the cost of network elements involved in the provision of access and distributed over the complete capacity of the system.” (*Access to Essential Facilities at Cable Landing Stations Regulations, 2007* (5 of 2007), Chapter II, Paragraph 10(1)(b).) However, notwithstanding the procedures and costing methodology implemented by the TRAI to achieve this result, current charges for access facilities at cable landing stations are at unreasonably high and non-competitive levels and are clearly not cost-based. There is therefore an urgent need to revise the access facilitation charges of CLS facilities and their charging pattern.

Analysis of Cable Landing Station (CLS) segment and its Regulations

4. Presently, access barriers in form of exorbitantly high charges for access to facilities at Cable Landing station constrain the competitiveness of telecom operators and limit the growth of the telecom market. As shown by the information provided in the Consultation Paper, the present CLS access charges are as much as five hundred times greater than comparable charges in other jurisdictions.

5. The Authority has very rightly noted from the research report of Plum Consulting that the cable landing station market in India is highly concentrated, with two cable landing station owners (Tata Communications and Bharti) accounting for more than 93% market share in this segment. The report has further noted that the competition between international cables is likely to be limited by the lack of competition at the cable landing stations.

6. The present regulations on cable landing station access charges and co-location charges do not provide any regulatory safeguards to prevent anticompetitive conduct by the incumbent operators who are responsible for managing the cable landing stations under the consortium model. For example, the TRAI also has adopted no safeguards to prevent the OCLSs, which are vertically integrated operators, from adopting discriminatory practices with respect to the AFC / CLC applied to their own Access / ISP /network services vis-à-vis the AFC / CLC charged to other access seekers/ telecom service providers. In this connection attention is invited to TRAI's IUC Regulations dated 9th March, 2009 wherein with a view to ensure non-discrimination TRAI has required the reporting of carriage charges as well as SMS charges in prescribed formats on a quarterly basis. The inclusion of a similar reporting requirement for the OCLSs in the CLS regulations would assist in addressing this concern.

7. As set forth in the responses below to the questions listed in the Consultation Paper, we believe that the TRAI should now supplement its regulations issued in 2007 mandating access to submarine cable landing stations by establishing open and transparent procedures for the regulation of access facilitation charges (AFC) and co-location charges (CLC). We recommend that

the TRAI should establish these charges based on a four-step approach that would require the cable station owner (OCLS) to submit its proposed AFC and CLC charges to the TRAI, together with information demonstrating that the proposed charges are determined on the basis of cost in compliance with the specific methodology required by the TRAI. This methodology should be long-run incremental cost (LRIC). Other stakeholders should be allowed to review and comment on the submission, and the TRAI should then determine the AFC and CLC in compliance with the required methodology and based on all information in the record, including the comments and information provided by the OCLS and other stakeholders. The TRAI should set forth its conclusions and supporting reasoning in a published decision. Additionally, any party to the proceeding should be able to request the TRAI to reconsider its decision as not being supported by the relevant facts or legal principles, and the TRAI should reconsider its decision on the submission of such a request.

8. This proposed approach is consistent with the existing regulations, which provide that the AFC should be “determined on the basis of the cost of network elements involved in the provision of access and distributed over the complete capacity of the system.” (*Access to Essential Facilities at Cable Landing Stations Regulations, 2007* (5 of 2007), Chapter II, Paragraph 10(1)(b).) The use of transparent procedures allowing all stakeholders to review and comment on the network models, inputs, and all cost information underlying the proposed charges, and procedures for the review of the charges established by the TRAI. Currently, there is no public disclosure of the charges proposed by the OCLS, the basis of the TRAI decision, or any other aspect of the proceeding. Under these existing procedures, other stakeholders have no opportunity to review and

comment on the evidence submitted by the OCLS in support of its proposed charges, and the TRAI is unable to use their analysis to assist its own review. Modifying the existing procedures in accordance with these recommendations would allow the TRAI to base its decision on a complete record reflecting the analysis of all relevant parties.

9. **It is also noted that the present costing methodology does not adjust/ deduct the reimbursements received by the OCLS from the consortium members to arrive at the CLS access charges. As noted in response to Question 4 below, it appears from the “descriptions of the items considered” in developing these charges set forth in Annexes III through V of the Consultation Paper, that charges are being levied for the use of optical distribution frame (ODF) equipment associated with the submarine cable termination equipment that is already paid for by consortia owners. Also, there is no basis for imposing charges reflecting the recovery of costs for the use of digital cross-connect (DXC) equipment on direct access capacity that does not use this DXC equipment. Both examples indicate high and unjustifiable over-charges.**
10. To prevent such over-recovery, and to ensure that access to cable stations is priced at competitive levels, the TRAI should require compliance with strict cost causation principles and should use the LRIC methodology. The TRAI should require the OCLS to provide a cost model based on this methodology and should invite stakeholder comment on the model and inputs, either as part of the proceeding in which the AFC and CLC are established, or in a separate proceeding under the procedures described above. The TRAI also should review the charges established through these

procedures at least every two years, to ensure that the facts and assumptions underlying the charges remain accurate.

11. In the Para 3.18 and 3.19 of the consultation paper , it has been indicated that the owner of cable landing stations have claimed depreciation under various methodology whereas the detailed calculation sheet of OCLSs as indicated in Annexure III to V, have not shown any amount of depreciation for determination of CLS access charges . The Annexure III to V has also not indicated the life of the system/ network elements and under which methodology depreciation has been arrived. It has also been noted that weighted Average Cost of Capital has been arrived on gross block/ cost where as it should be calculated on net block / cost.
12. It has been noted from the Para 3.6 of Consultation paper that the present Access facilitation charges have been determined on the basis of the cost of network elements involved in the provision of access and distributed over the complete capacity of the system, whereas this fact has not been demonstrated in the cost calculation information as provided in the annexure III to V of the consultation paper.
13. The deficiencies noted above and in response to Question 4 below cast significant doubt on the cost-based nature of the current AFC and CLC, and indicate the existence of high and unjustifiable over-charges. To prevent such over-recovery, the TRAI should require compliance with strict cost causation principles ,if the charges are estimated based on cost oriented principle , there should be reduction of more than 90% in the present charges of access facilities at Cable landing Station .

14. It has been noted that the cost of building a cable landing station is a fraction of the cost required to build the international submarine cable system. Therefore, the charges for access facilities at cable landing station should also be in the same proportion. The industry information on international cable system suggest that the cost of building of a complete international submarine cable system between Asian countries to European countries are generally ranging from US\$700 Mn to US\$1000 Mn and cost of building a cable landing station (CLS) is also ranging from US\$4 Mn to US\$ 5 Mn.

15. We noted that some of the CLS-RIOs of OCLSs have been pending since February, 2011 for approval with TRAI. **It is requested that the determination of the CLS access charges under the pending RIOs should be decided as soon as possible pursuant to the methodology and procedures adopted in this proceeding.**

Responses to Questions

Q1: Which of the following method of regulating Access Facilitation Charges and Co-location charges (AFC & CLC) should be used in India?

(a) The prevalent method i.e. submission of AFC & CLC by owner of the cable landing station (OCLS) and approval by the TRAI after scrutiny

(b) Submission of AFC & CLC by OCLS and approval by TRAI after consultation with other stakeholders

(c) Fixing of cost based AFC & CLC by TRAI

(d) Left for mutual negotiation between OCLS and the Indian International Telecommunication Entity (ITE)

(e) Any other method, please elaborate in detail.

Comments

1. The nature & services/products of submarine Cable landing station segment is almost similar to the services/ products provided under International Private leased circuit (IPLC) segment. Therefore, we believe that a similar method and process for regulating the Access Facilitation Charges and Co-location charges (AFC and CLC) should be followed that would provide transparency and the opportunity for comment by other stakeholders that is completely absent from the existing procedures for determining the AFC and CLC.
2. During the IPLC tariff fixation process, the Authority collected the costing data (Financial & Non-Financial) from the incumbent operator i.e. Tata Communications Ltd (formerly VSNL) as well other operators who were providing the same services and same were analyzed. The costing details of incumbent operator (along with the estimated cost-based price of IPLC-Half Circuit) was also published

in the consultation paper for the comments of the stakeholders. After following the due consultative process, TRAI had decided the charges for IPLC (half circuit). The methodology for costing was also explained/ shared in the consultation paper and the final determination of TRAI. Here, the TRAI should follow a similar approach involving four specific steps, as described below.

- a. **First**, the owner of the cable landing station (OCLS) should be required to submit its proposed AFC and CLC charges to the TRAI, together with information demonstrating that the proposed charges are determined on the basis of cost oriented and in compliance with the specific methodology required by the TRAI. (As described in response to Question 6 below, TRAI should use the long-run incremental cost (LRIC) methodology to determine whether AFC charges are cost-based.)
- b. **Second**, the TRAI should place the OCLS submission, including all information submitted to demonstrate cost, in the public domain and provide all stakeholders and other interested parties a reasonable opportunity to audit and review the submission and submit comments and model input corrections to the TRAI.
- c. **Third**, the TRAI should determine the AFC and CLS charges to be applied on the basis of the specific costing methodology required by the TRAI and the information submitted by all parties in the proceeding. The TRAI should set forth its conclusions and supporting reasoning in a published decision.

d. **Fourth**, any party to the proceeding should be able to request the TRAI to reconsider its decision as not being supported by the relevant facts or legal principles, and the TRAI should reconsider its decision on the submission of such a request.

3. We believe that this proposed approach has major advantages for both the TRAI and all stakeholders as compared to the current approach and the alternative proposals. Most importantly, this proposed approach provides the transparency that is entirely absent from the current approach. At present, the OCLS submits its proposed AFC and CLC to the TRAI, which reviews and approves these charges with no public disclosure of the basis of the TRAI decision or any other aspect of the proceeding.¹ These existing procedures provide no opportunity to other stakeholders to review and comment on the evidence submitted by the OCLS in support of its proposed charges and to allow the TRAI to use their analysis to assist its own review. In this regard, we submit that TRAI considers that its decision-making process generally obtains major benefits from the opportunity to consider the informed comments submitted by interested parties based on those parties' review of the record evidence in regulatory proceedings.

¹ The Consultation Paper cites (in Section 3.12) the Authority's former observation that affording stakeholders the opportunity to comment "may unnecessarily delay the whole process" and that "adequate opportunity has already been given to stakeholders." We believe that any delay resulting from the transparent and open proceeding recommended here would be amply justified by the improved information that would be available to the Authority to assist its decision-making. We also reiterate that under the present procedures, other stakeholders have no access to or opportunity to comment on the rates and any supporting information submitted by the OCLS until after the Authority's decision-making process is completed.

4. Additionally, we note that while alternative (b) includes consultation with other stakeholders, it does not specifically require that other stakeholders should be able to comment on all information submitted by the OCLS, and that the TRAI should make its determination on the basis of the specific costing methodology required by the TRAI and the information submitted by all parties in the proceeding, including the other stakeholders. Moreover, none of the specific proposals require the TRAI to reconsider its decision as not being supported by the relevant facts or regulatory principles on the request of any party to the proceeding. We consider that the right to obtain the review of a decision is an important regulatory safeguard that should be available in all circumstances.

5. We believe that the access to essential facilities at cable landing stations is a type of natural monopoly and presently it is considered as bottleneck to access the international capacities / bandwidth at the respective cable landing stations in India, especially in the case of those are managed & controlled under consortium system. Therefore, it should not be left for mutual negotiation between OCLS and ITE as the incumbent operators (Tata Communications and Bharti) together account for a market share of more than 98% in this segment.

6. **In conclusion, to ensure that the AFC and CLC are established at the cost-based level required by the regulations, the TRAI should use a combination of options (a) + (b) +(c), using the four-step procedure described above.**

Q 2: In case AFC & CLC are regulated using method (a) or method (b) above, is there a need to issue guidelines containing algorithm and network elements to be considered for calculating AFC & CLC to the OCLSs? If yes, what should be these guidelines?

Comments

1. We believe that TRAI has already prescribed broad guidelines for telecom pricing through its various consultation paper/regulation/tariff on telecom and in this connection TRAI has already decided in Para 2.12.2 of the CLS Regulations, dated 6th June, 2007 that It is appropriate that OCLS determine the charges on the basis of cost oriented principles taking into account the cost involved in access facilitation, operation & maintenance, cancellation and in provisioning of co-location facilities including Co-location space and submit to the Authority

We suggest that the TRAI should establish AFC and CLC based on a four step approach (as stated in response to Question 1 above) ..we further suggest that the determination of costs for access to facilities at cable landing station should involve the following steps:

(1) The OCLS identifies the relevant material and labor related investments required to provide each AFC and CLC element.

(2) Where appropriate, the OCLS applies loading factors to account for the costs associated with the installation or engineering activities for any relevant central office equipment or facilities.

(3) The OCLS then applies annual capital cost recovery factors to these total investments and adds network-specific maintenance expense

loading factors to complete the ongoing annual forward-looking costs directly associated with the identified investments.²

(4) Annual operating expenses associated with general network operations, customer marketing and billing and other corporate overheads are then added. Altogether, items (3) plus (4) yield the total annual LRIC associated with CLS services.

(5) The OCLS then converts these total recurring LRICs to a per-unit basis depending on the volume of services provided.

In addition, there may be non-recurring costs associated with provisioning customer requests for new or rearranged CLS services. The costs associated with these nonrecurring activities should be developed by identifying the specific activities involved in these activities and estimates of the efficient labor costs involved in performing these activities. Prices specific to these activities should then be proposed that match these costs.

Specific algorithms and network elements (based on bottom -up costing Model) required to establish cost-based recurring AFC rates are as follows:

CAPITAL	
Per meter cost of fiber	A
Per meter cost of fiber racking	B
Length of fiber	C
Length of racking	D
Termination on ODF	E
Number of terminations required	F

² Capital cost recovery factors allow the OCLS to recover costs associated with depreciation, income taxes and return on investment (with the cost of capital set to reflect a weighted average of the OCLS' cost of debt and equity) on a "levelized" (or "annuitized") basis that distributes these costs evenly over the useful lifespan of the investment.

Total capital required	$G=(A*C)+(B*D)+(E*F)$
INSTALLATION	
Time required to install racking (per meter)	H
Time required to run fiber (per meter)	I
Time required to terminate fiber on ODF	J
Technician's labor cost per hour	K
Total installation cost	$L=[(H*D)+(I*C)+(J*F)]*K$
CAPITAL COST	
Total capital	$M=G+L$
Annual capital cost factor (includes Pre-tax WACC and depreciation)	N
Total capital cost recovery	$O=M*N$
NETWORK MAINTENANCE COST	
Annual maintenance expense per unit of investment	P
Total annual maintenance cost	$Q=P*M$
OPERATING EXPENSE	
Network operations expense	R
Customer operations expense	S
Corporate overhead expense	T
Total operating cost	$U=R+S+T$
TOTAL ANNUAL COST	$V=O+Q+U$
TOTAL MONTHLY COST	$W=V/12$

Q 3: In case, AFC & CLC are regulated using method (a), (b) or (c) above, please suggest the value of pre-tax WACC, method of depreciation and useful life of each network element? Please provide justification in support of your answer.

Comments

1. A precise value of the weighted cost of capital (WACC), should be subject to market conditions and determined under a clear,

auditable methodology. As regards calculating capital structure, a market valuation should be preferred over book valuation.

2. We have noted that over the period of time TRAI has used pre-tax WACC in the range 12.21% to 15% for various telecom network services and it has also been noted that in the recent past for various telecom services TRAI has used 15% pre-tax WACC as benchmark , therefore, we also recommend the same for CLS access charges
3. For asset depreciation, the most straightforward method is the straight-line method (SLM), with asset lives and net salvage values reflecting (useful) life of the asset.. We note that TRAI has taken weighted average life of various telecom network elements as 10 years by following SLM; we recommend the depreciation rate 10% by following the SLM for CLS access charges.
4. We also note that that the information provided under Annexure III to V of the consultation paper indicate that for CLS access facilities on IRU basis, capital expenditure has been recovered in 3 years where for practical purpose IRU is considered for 10 to15 years.
5. **We recommend that under the consortium model, the amount of capital expenditure which has been reimbursed by the members should be deducted before computation of depreciation and WACC.**

Q 4: Which cost heads/ network elements should be included/ excluded while calculating Access Facilitation and Co-location charges? Please enumerate the items with specific reasons.

Comments

1. We believe that only those cost heads / network elements should be considered for determination of AFC& CLC which are unavoidable to provide the AFC &CLC services and golden costing principle i.e. causation principal should be adopted for selection of cost heads / network elements etc.
2. It is important to note that in the consortium model, the capital expenditure and operating expenditure of Cable Landing station (in form of S and T segment) are reimbursed by consortium. Therefore, in the case of CLS access charges under consortium system, the amount received on account of Capex and opex should be deducted otherwise this would lead to overcompensation to the owner of cable landing station.
3. Under the consortium model, the consortia pay for all network elements up to the cable system ODF including the ODF. This also includes the SDH Mux equipment, fibre jumpers, and associated ports. Noting each system could vary, the SDH equipment breaks down the available SDH system interface components to the individual STM-n components. For example in EIG the original design interface was STM-16, STM-64, and 10gb DWDM. For SMW4 the interface levels are STM-1 and above and 10Gb DWDM. Therefore all network elements up to CLS system ODF should be excluded from Access Facilitation calculation.

4. In the case of infrastructure paid by the consortia, it would include all floor space occupied by the consortia provided equipment, a prorated (if shared with other station occupants) portion of the building support equipment (such as HVAC, DC power plant, generators, fire suppression equipment, building security equipment, etc). For recurring cost, It would include a portion of utility bills, property taxes, all labor required to operate and maintain the consortia equipment, security cost, monitoring circuits, management support, etc. All of these costs should be excluded from the Access Facilitation calculation.
5. In regards to collocation space, the approach should be cost based with square footage cost forming the basis for the space. Starting with the total cost of the building/total square footage (excluding specifically dedicated building space and/or support systems such as HVAC, AC/DC power equipment etc), if the cost for these items is shared by colo space, then these costs will be included. $\text{Cost per square foot (embedded cost) + cost to build out collocation space (civil works, cable ladder and trays)/square footage = cost basis per square foot for collocation space.}$ This should be considered NRC to capture out of pocket cost for providing the space. In addition separate NRC/MRC cost can be included for entrance conduit, DC power (build out and recurring), OTCs, all items specific to each customer
6. The analysis of information available in the consultation paper and regulations (2007) suggest that in the present costing exercise of CLS access charges under consortium model have not deducted the amount which have been received by the owner of cable landing station from the consortiums. However, TRAI has indicated

in Para 3.22 of the consultation paper that they have taken only those cost items which were not being reimbursed by consortiums but it is not verifiable with information indicated in the annexure III to V of the Consultation paper and as results / cost based charges also not support the same .

7. We note that the Authority has already recognized in the 2007 consultation that access facilitation costs are already paid by consortia. The relevant analysis of TRAI with respect to this issue is quoted in full below:

Extract from Chapter 4 of the consultation paper on “Access to Essential Facilities (including Landing facilities for submarine cables) at Cable Landing stations,” dated 13th April 2007 (our emphasis).

“4.1.3 Charges for Accessing International Submarine Cable capacity:

“Normally an eligible Indian International Telecommunication Entity would be required to pay charges for following items to the Owner of Cable Landing Station:

1. Access Facilitation Charge
2. Annual Operation and Maintenance (O&M) Charge
3. Cable Landing Station’s cost component in case if it is not included in other head of Charges

“Under the Consortium Cables, the owner of International Submarine Cable capacity who sells the reference capacity has to bear the cost component of Cable Landing Station which normally is passed on to the purchaser of the reference capacity either upfront or upon usage of capacity. **All the cost components from Beach Man Hole (BMH) up to Optical Distribution Frame (ODF)/Digital Distribution Frame (DDF) are paid for by the**

consortia. The Owner of Cable Landing Station in the respective country has the obligation as a member of the consortia to operate and maintain the Cable Landing Station and to provide international telecom services to other telecom operators and consortia members. It is the way in which these services are provided by the Owner of Cable Landing Stations that if not provided transparently and non-discriminative basis creates the bottleneck effect at Cable Landing Stations. It is for these reasons the Open Access need to be regulated so as to allow the open and reasonable access to such essential facilities at Cable Landing Stations in India. Even the Owner of Cable Landing Station has to bear the cost for accessing the international submarine cable capacity for his own use to consortia. In other scenario, Cable Landing Station access charge, which is not included in the Reference Capacity by the owner of International submarine cable system, are payable to Owner of Cable Landing Station by an eligible Indian International Telecommunication Entity. Cable landing Station cost component is distributed over the International submarine cable capacity. Also it is observed that the generally the cable landing station capital cost keep reducing as the capacity utilization increases.

Therefore, the owner of Cable Landing Station need to declare:

- (i) The Cable Landing Station cost for various systems declared to consortium
- (ii) Capacity level determined over which such landing station costs are to be recovered and
- (iii) Cumulative capacity utilization on each of the system since commencement of Cable Landing Station separately for its own usage and third party usage."

8. As per generally accepted costing & accounting principles if any costs that have already been reimbursed to the cable landing station owner should *not* be included in the access facilitation charge. Contrary to this important principle, however, the present regulation on CLS indicates that RIO charges have been applied to compensate the landing party for expenditures that have been previously reimbursed by consortia.
9. CLS owners as members of various International Consortia (e.g. EIG, SMW4, etc) are signatories to the joint consortium agreements (C&MAs). As per generally accepted commercial practices in this segment, the costs (CAPEX and OPEX) to build and operate a Cable Landing Station, in the C&MA, are billed out to all the consortium members, so that the terminal party (i.e. Cable landing station owner) is reimbursed for both the capital construction costs and the ongoing Operation and Maintenance Expenditure (O&M). Therefore, each consortium reimburses to CLS owners the cost associated with building and operating these stations.
10. Since some major costs are already reimbursed by the Consortium, there seems to be little justification for either charging higher and different charges namely, RIO/AFA and O&M from operators seeking access to the CLS. Expenditures that have already been reimbursed by any means shall not be part of the calculation of access facility charges.

8 The relevant direct network cost elements of access facilitation are readily identifiable and comprise the cost of basic cabling and (potentially) equipment with the labor necessary for installation. These cost elements are shown by the diagram below. On

consortium cables, other costs relating to the cable landing station and access (such as all building, ducting, ODF equipment into which the access cabling is connected) are paid for by consortium owners under the relevant Construction and Maintenance Agreement (C&MA) entered into by the owners.³ In other words, there are no other direct costs which the OCLS should recover as part of the AFC. Any double-recovery of such costs by the OCLS would be contrary to the requirement of the cable station access regulations that the AFC and CLC should be based on "the cost of network elements involved in the provision of access." (*International Telecommunications Access to Essential Facilities at Cable Landing Stations Regulations, 2007* (5 of 2007), June 7, 2007 Chapter II, Paragraph 10(1)(b).) Similarly, any recovery of costs for equipment that is not used for the relevant access arrangement is also contrary to that requirement.

9As noted above, the Consultation Paper (Section 3.22) that the OCLS have "submitted that the costs included in their calculations are not being reimbursed from consortiums." The Consultation Paper further states that "generic descriptions of the items considered for arriving at Access Facilitation charges, O&M charges and Co-location charges" are set forth in Annexes III through V of the Consultation Paper.

10. We provide comments below on the items listed in Annexes III through V. However, it should be noted that it is impossible to provide a proper assessment of the validity of the costing approach

³ See also, Consultation Paper on "Access to Essential Facilities (including Landing facilities for submarine cables) at Cable Landing stations," April 13, 2007 (acknowledging that "[a]ll the cost components from Beach Man Hole (BMH) up to Optical Distribution Frame (ODF)/Digital Distribution Frame (DDF) are paid for by the consortia.")

set forth in these documents without a full description of the terms used and the actual values that are used in these calculations. Without such disclosure, as described above in response to Question 1, it is impossible for other stakeholders to provide a proper analysis and allows only the identification of the following clear deficiencies.

- a. **First**, we note that a significant portion of international submarine cable capacity terminating in India uses direct access arrangements, which do not use any digital cross-connect (DXC) equipment at the cable station, or any optical distribution frame (ODF) equipment associated with the DXC. For example, in the diagram shown in Annex III of the Consultation Paper, direct access capacity neither uses, nor is connected to, the DXC and associated ODF in the Equipment Room at Floor B, and the DXC and associated ODF in the Colo Space. Accordingly, the costs associated with this DXC and ODF equipment should not be reflected in the AFC charged for direct access capacity. The access arrangements shown in Annexes IV and V, which also require no use of DXC or associated ODF equipment for direct access capacity, raise similar concerns.

- b. **Second**, even where international submarine cable capacity access arrangements require the use of DXC equipment, we questions the need for the second DXC and associated ODF shown as being located in the co-location space in Annex III of the Consultation Paper. We believe that a single DXC and associated ODF (as shown in the equipment room at Floor B in Annex III) is sufficient and that the costs associated with the second DXC and associated ODF equipment should not

be reflected in the AFC charged for any capacity on consortium cables. The access arrangements shown in Annex IV also require only a single DXC and associated ODF, and therefore raise similar concerns.

- c. **Third**, on consortium cables, the ODF equipment associated with the submarine cable termination equipment (as shown, for example, in Cable Station at Floor A in Annex III of the Consultation Paper) is paid for by consortium owners under the relevant Construction and Maintenance Agreement (C&MA). Accordingly, because the OCLS did not bear this stated cost, the costs associated with this ODF equipment should not be reflected in the AFC charged for any capacity on consortium cables. These concerns apply to all types of access arrangements (e.g., as shown in Annexes III, IV and V).
- d. **Fourth**, regarding other CAPEX components listed in Annex III, the "Project Management Cost" (Line 14), and the utilization thereof in the Line 20 formula, should be clarified.
- e. **Fifth**, regarding the CAPEX and OPEX components listed in Annex IV, the apportionment of equipment and links at 128 STM-1's severely understates the capacity of DWDM (dense wave division multiplexing) equipment and the use of a 70 percent utilization factor increases this concern. A similar concern applies to the use of this approach in Annex V.
- f. **Sixth**, regarding OPEX, all annual maintenance charges (e.g., as listed in Annexes III though V) should be adjusted to reflect the non-use of equipment by certain capacity

arrangements and the payment of equipment and associated maintenance charges by cable consortia (as described above). Clarifications are also required of the OPEX component "overhead charges" listed in line 27 of Annex III, and line 21 of Annexes IV and V.

- g. **Seventh** in the Para 3.18 and 3.19 of the consultation paper , it has been indicated that the owner of cable landing stations have claimed depreciation under various methodology whereas the detailed calculation sheet of OCLSs as indicated in Annexure III to V, have not shown any amount of depreciation for determination of CLS access charges. The Annexure III to V has also not indicated the life of the system/ network elements and under which methodology depreciation has been arrived. It has also been noted that the weighted Average Cost of Capital has been based on gross block/ cost where as it should be calculated on net block / cost.
- h. **Eight** it has been noted from the Para 3.6 of Consultation paper that the present Access facilitation charges have been determined on the basis of the cost of network elements involved in the provision of access and distributed over the complete capacity of the system, whereas this fact has not been demonstrated in the cost calculation information as provided in Annexes III to V of the Consultation Paper .
- i. **Ninth**, the Lease Charges for Access Facilitation should not have any O&M charges included. Lease Charges are always inclusive of O&M and therefore there is no need for the CLS owner to get reimbursed for a service twice when the same

has already been included as a part of Lease Charges. This aberration in the charging mechanism of Leased Charges needs to be corrected in order to bring down the Lease Charges and enable the ITE to effectively compete in the market.

11. The above deficiencies cast significant doubt on the cost-based nature of the current AFC and CLC, and indicates the existence of high and unjustifiable over-charges. To prevent such over-recovery, the TRAI should require compliance with strict cost causation principles and should use the LRIC methodology.
12. Additionally, it is important to note that we have had no previous opportunity to review the information contained in Annexes III through V. As described in response to Question 1, the TRAI should ensure that all stakeholders are able to review all future information submitted by the OCLS concerning these charges and to submit comments for consideration by the TRAI in its decision-making.
13. We also note that countries in the South East Asia, Far East and Western Europe regions do not have multiple charges for access to cable landing station facilities but levy a token RIO/ Cross Connect charge, as most of the operational and recurring costs are recovered from consortium members and original signatories. For example In Singapore, IDA has approved a list of charges In the RIO, and depending on what the CLS seeker requires(ie. Colocation at landing station, x-connection charges, capacity activation charges, etc).

Q5: What should be periodicity of revision of AFC & CLC? Support your view with reasons.

Comments

1. The TRAI should require the regular review of AFC and CLC to ensure that these charges continue to be based on “the cost of network elements involved in the provision of access and distributed over the complete capacity of the system,” as required by the cable station access regulations. (*International Telecommunications Access to Essential Facilities at Cable Landing Stations Regulations, 2007* (5 of 2007), June 7, 2007 Chapter II, Paragraph 10(1)(b).) The TRAI noted in Para 1.109 of the Recommendations on Telecommunications Infrastructure Policy dated April 12 2011 that “*the Authority understands the need for a periodic review of RIO pricing especially in view of the constantly changing International bandwidth prices.*”
2. The need for periodic review is demonstrated by the current CLS access charges, which were established in Reference Interconnect Offers approved by the TRAI in October 2007. We understand that these charges were calculated based on the then-prevailing utilization of international capacity and cost elements at the respective CLS. Since that time, there has been a major increase in capacity utilization on submarine cable systems. For example, international capacity utilization at the Mumbai and Chennai CLS has increased by more than 10 times since 2007. To ensure that “the cost of network elements involved in the provision of access” remains “distributed over the complete capacity of the

system," as required by the regulation, per-unit fixed costs, such as capital costs, should be reduced in accordance with the increase in international capacity utilization. Similarly operations and maintenance (O&M) charges of CLS also should be adjusted to account for the increase in capacity utilization. Without such periodic adjustment of per-unit costs in such circumstances, the CLS charges provide the OCLS with a massive over-recovery.

3. Unless this issue is properly addressed it will become even more urgent in the future with the continued rapid growth of international submarine capacity in India. The Consultation Paper notes that demand for international bandwidth in India is expected to grow at a compound annual growth rate of 83 percent until 2015. (Section 2.21.) This demand may increase at even higher rates if wireless usage in India rises toward the higher levels currently seen in Japan and the United States. (Section 2.24.)
4. The necessary frequency of review will depend upon the method under which the AFC and CLC are established in the future. If the AFC and CLC are established under the approach recommended here, through use of an appropriate LRIC methodology and under transparent procedures allowing review and comment by other stakeholders, the TRAI should review these charges at least every two years to ensure that the facts and assumptions on which it relied in establishing the rates remain accurate, including that capacity is expanding in accordance with the growth projections included in the relevant model. Such a review should again include the opportunity for stakeholders to review the information submitted by the OCLS and to file comments for consideration by the TRAI in making its

determination. If the AFC and CLC are established under other procedures, these charges should be reviewed at least annually.

Q 6: In case, cost based AFC & CLC are fixed by TRAI, which costing methodology should be applied to determine these charges? Please support your view with a fully developed cost model along with methodology, calculation sheets and justification thereof.

Comments

1. The TRAI should use the internationally generally accepted Long Run Incremental Cost (LRIC) methodology. Prices based on LRIC methodology will therefore reflect the price levels that would prevail in a competitive marketplace.
2. By requiring the use of this methodology, the TRAI will ensure that access to cable landing stations is priced at competitive levels and further enhance competition in India's international market to assist in achieving the Government's objective to bridge the digital divide between rural and urban India and to further boost the Indian Economy.
3. We also note that the Authority has already decided in its regulation (5 Of 2007) vide para 2.12.2 that these charges (AFC &CLC) will be approved by the TRAI on the basis of well-established costing methodology already in vogue in the Authority. It is also learnt that TRAI has adopted forward looking costing methodology i.e. LRIC/Pure LRIC for determination of Interconnect usage charges (IUC)/MTC.

4. To allow the implementation of LRIC-based pricing for AFC and CLC, the TRAI should require the OCLS to provide a cost model based on this methodology in support of these charges. The OCLS should also be required to provide all inputs to the model and other supporting information. The TRAI should make this information available for comment by other stakeholders and should consider any comments submitted in its decision-making concerning the model. The TRAI could adopt a LRIC model in this fashion as a separate proceeding, or in conjunction with the proceeding that would also determine the AFC and CLC under the procedures that are described in response to Question 1 above.

Q 7: Whether Access Facilitation charges and O&M charges should be dependent on capacity (i.e. STM-1, STM-4 or STM-16) activated? Support your view with reasons.

Comments

1. Whether the AFC and CLC should be dependent on capacity should be determined by the type of access arrangement. Charges for direct access capacity, which does not use any digital cross-connect (DXC) equipment or other electronics at the cable station, and for which the access arrangement requires only a simple fiber cross-connect, should be independent of capacity. We note that the approximate costs of the required cable are around US\$40 and the required installation involves very limited manpower hours. Capacity-based charges should apply only to capacity requiring the use of digital cross-connect (DXC) equipment.
2. The cross-connect for modern cable systems is optical and hence is not capacity-dependent – it can carry any capacity amount from STM-1 to STM-16, etc. Therefore the charging should simply reflect the cost of installing the cross-connect, not the capacity running across it.

Q 8: If Access Facilitation charges and O&M charges are fixed on the basis of capacity activated;

(a) Should the charges be linearly proportionate to the capacity activated; or

(b) Should the interface capacity as provided by the submarine cable system at the cable landing station be charged as a base charge while higher or lower bandwidth be charged as the base charge plus charges for multiplexing/ de-multiplexing?

Comments

1. As stated in the previous response to Q 7, access facilitation charges should be cost based and not capacity based. If an ITE/ILD requires access to capacity at the interface rate provided by the cable system, there should be no multiplexing/demultiplexing service required from the CLS operator. In this instance, only a fibre connection would be required and fibre cost is independent of the bandwidth carried therein. Therefore in our view charges should not be linearly proportionate to the capacity activated and should rather be based on cost incurred.
2. Accordingly, capacity-based charges should apply only to capacity requiring the use of digital cross-connect (DXC) equipment. Charges for direct access capacity, which does not use any digital cross-connect (DXC) equipment or other electronics at the cable station, should be independent of capacity. In response to Question 8(a), capacity-based charges should not be linearly proportionate to the capacity activated, because, as we note that the connection circuit costs are independent of circuit size, and the costs of the use of DXC

equipment are not linear. Thus, any linear approach will almost surely lead to the over-recovery of costs.

3. We therefore supports the use of a base charge plus non-linear charges for the multiplexing equipment. The TRAI accordingly should prohibit the continued use of linear pricing by the OCLS under which the charges for a STM-64 connection are 64 times those for a STM-1. This present linear methodology results in an extraordinary non-cost oriented over recovery for the OCLS.

Q 9: Whether there is a need to fix Access Facilitation charges for all types of submarine cables? If no, which kind of submarine cables may be exempted and why?

Comments

1. We believe that the scope of the present regulation should equally applicable to all types of submarine cables and therefore there is need to fix Access Facilitation Charges for Consortium Model, Private Model and Private / Public Partnership Model until the access charges are in line with the international trends.

4. The Authority has also recognized in para 2.15.2 of its CLS Regulations dated 7th June, 2007 which says that *“The scope of the present regulation is to mandate access to the cable landing station on fair ,non-discriminatory and transparent manner. There is no rationale for TRAI to make any such separate provision in these regulations for integrated cable landing station owner having reference capacity for access facilities. All OCLSs are subjected to uniformly to these regulations. -----”*

5. The regulations set forth in *International Telecommunications Access to Essential Facilities at Cable Landing Stations Regulations, 2007* (5 of 2007), issued on June 7, 2007, provide “access to any eligible Indian International Telecommunication entity requesting for accessing international submarine cable capacity on any submarine cable systems.” (*Id.*, Section 3(a).) The purpose of the procedures to be established through this Consultation is to ensure the provision of the cost-oriented and non-discriminatory access to the cable landing stations and related submarine capacity that is required by those regulations. To ensure the

achievement of these objectives, the new procedures for the establishment of cost-based charges should apply to all cable landing stations and related submarine capacity that are subject to the above-referenced regulations.

Q 10: Is there a need to introduce any new provision or to modify/delete any of the clauses of the 'International Telecommunication Access to Essential Facilities at Cable Landing Stations Regulation 2007', in order to facilitate access to essential facilities at cable landing station?

Comments

1. A comprehensive review of TRAI's regulations regarding access to submarine cable systems should be undertaken, because the regulations do not uniformly provide sufficient assurance of transparency, certainty, or timely provision of needed services. In addition to the very high level of charges for AFC and CLC that is the subject of this Consultation Paper, and the additional issue noted in paragraph 6 of the introductory section of these comments, these concerns include the following: (i) the Reference Interconnection Offer (RIO) is not a mandated set of agreements but is to be negotiated on an ad-hoc basis, (ii) denial of access can be "for any valid reason" – a term that is not defined in the regulations, (iii) there are extensive time periods to give effect to RIOs for new systems, (iv) the minimum provisioning period for access services is too long, and (v) many of the maximum time periods for the negotiation and payment of access and backhaul arrangements are too brief. Additionally, the AFC should not apply to traffic that simply transits between two cable systems and does not touch the domestic Indian network.

2. The need for review is specially required under the present regulatory regime wherein Telecom Service Providers are required to follow the model RIO, while also being given the freedom to enter into mutually acceptable terms and conditions of interconnection, in such a scenario it is not clear what the role of the model RIO is. Predominantly the vast majority of ILD operators seek interconnection with incumbent service providers which have significant market power and are in a dominant position so far as that market is concerned. The effect of this is that the ILD operator has to sign up on the incumbent terms which are largely one sided. Therefore the RIO document requires a comprehensive review in line with the desired telecom market scenario which lays emphasis on pro-competitiveness and fair play between the various service providers.
3. Further, despite the requirement of the regulations that all parties have fair and non-discriminatory access to international cable capacity, ILDOs are often left at a competitive disadvantage due to lack of clarity in TRAI's regulations. To avoid this situation, TRAI should clarify that a Cable Landing Station "comes into existence" and thus triggers publishing of reference interconnect offer (RIO) under interconnection rules when "substantially constructed" to ensure that access services are available to all ILDCs by the "ready-for-service" date of the new cable. Landing carriers should not wait until all relevant security clearances and permits have been obtained before submitting their RIOs to TRAI, as this puts other ILDOs at a competitive disadvantage. Any required clearances and permissions that the landing carrier has yet to receive for the CLS should not prevent the landing carrier from submitting its RIO terms for approval and subsequent publication.