CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Coram:

1. **Shri Ashok Basu, Chairman**
2. **Shri K.N. Sinha, Member**

Petition No. 48/2003

In the matter of

Open access in inter-state transmission

ORDER
(DATES OF HEARING : 24 & 25.09.2003)

Before enactment of the Electricity Act, 2003 (hereinafter referred to as "the Act"), the legal framework did not offer any choice to the distribution companies and the consumers in the selection of suppliers of electricity. The Act, which has come into force with effect from 10.6.2003, has opened up new vistas in the electricity sector by creating an environment for promotion of competition among the generators. The Act has introduced a new category of players in the sector, called the electricity traders. This has enabled the distribution companies and the consumers to have choice in the matter of supplies of electricity. Similarly, the generator also has choice to select among the Distribution companies and Traders from the appointed day. In order to give practical shape to the concept the Act provides for non-discriminatory open access in the transmission from the appointed day, the details for which are to be specified by the Central or State Commissions as the case may be through the regulations. The introduction of open access in distribution is envisaged in phases to be determined by the SERCs concerned under Section 42 (2) of the Act. The introduction of open access in transmission has the following advantages:

(a) Distribution Licencees (existing or wherever constituted as a result of reorganisation of SEBs) can access power from any source; a generator, a trader, another distribution licencee, a captive generator etc., on payment of transmission wheeling charges without payment of surcharge. The Central Transmission Utility (CTU) the State Transmission Utility (STU) and the transmission licensees are obliged to provide on demand open access to their respective system for transfer of such power, subject to regulations framed for the purpose by the appropriate Commission - Central Commission for inter-State transactions and State Commissions for intra-State transactions.

(b) A person setting up a captive generating plant can carry power from his captive generating facility to the destination of his use without payment of surcharge.

2. The advantage of the open access in distribution is as follows:

Any consumer can access a trader, generator, distribution licensee other than his own distribution licensee when the State Commission allows him open access under Section 42(2) of the Act, on payment of wheeling charges and a surcharge to take care of current level of cross subsidy and or additional surcharge under section 42(4), as the case may be. Thus the consumer is empowered to select his preferred source of supply of electricity.

3. In order to give sound shape to the new philosophy of non-discriminatory open access in transmission, a concept paper prepared by the Commission's staff (hereinafter referred to as "the concept paper") was circulated among the different

stakeholders and interested persons with a view to eliciting their suggestions before formulating the regulations envisaged in the Act. The responses received from different stakeholders and the interested persons have been overwhelming and encouraging. We are satisfied that the paper has been able to bring into focus the issues involved in operationalising non-discriminatory open access in transmission.

4. Open hearing on the issues raised was held on 24th and 25th September 2003. A list of stakeholders and other interested persons who participated and contributed to the process, either by submitting their written responses or actual participation in the open hearing, is attached.

5. We have carefully considered the views expressed by the stakeholders and other interested persons on the issues raised in the concept paper. We now proceed to record our views on different aspects of the issues on open access in the inter-State transmission.

JURISDICTION

6. In the first instance it may be necessary to survey briefly the provisions of the Act on the issues related to open access to have a clear view of the jurisdictional framework. Clause (47) of Section 2 defines the "Open Access' to mean the non-discriminatory provision for use of transmission line or distribution system or associated facilities with such line or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission. Under sub-section (2) of Section 38, CTU is obliged to provide non-discriminatory open access to its transmission system for use by –

(i) any licensee or generating company on payment of transmission charges; or

(ii) any consumer as and when such open access is provided by the State Commission under sub-section (2) of Section 42, on payment of transmission charges and a surcharge thereon as may be specified by the Central Commission:

7. The surcharge levied by the Central Commission shall be utilised for the purpose of meeting the requirement of current level of cross-subsidies. Such surcharge may be levied till such time the cross-subsidies are not eliminated. The surcharge is to be progressively reduced and eliminated as the cross subsidies are phased out. The manner of payment and utilisation of surcharge is also to be specified by the Central Commission. However, surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use. Similarly, under Sections 39 and 40, STU and a transmission licensee respectively are obliged under the law to provide non-discriminatory open access to its transmission system for use by –

(i) any licensee or generating company on payment of the transmission charges; or

(ii) any consumer as and when such open access is provided by the State Commission under sub-section (2) of Section 42, on payment of the transmission charges and a surcharge thereon, as may be specified by the State Commission:

8. Under Section 35, the Appropriate Commission may, on an application by any licensee, by order require any other licensee owning or operating intervening transmission facilities to provide the use of such facilities to the extent of surplus capacity available with such licensee. Any dispute, regarding the extent of surplus capacity available with the licensee, shall be adjudicated upon by the Appropriate Commission. As mandated by Section 36 (1), every licensee shall, on an order made under Section 35, provide his intervening transmission facilities at rates, charges and terms and conditions as may be mutually agreed upon. However, the Appropriate Commission may specify rates, charges and terms and conditions if these cannot be mutually agreed upon by the licensees.

9. As prescribed under Section 9(2), every person, who has constructed a captive generating plant and maintains and operates such plant, shall have the right to open access for the purposes of carrying electricity from his captive generating plant to the destination of his use. Such open access shall be subject to availability of adequate transmission facility and such availability of transmission facility shall be determined by the Central Transmission Utility or the State Transmission Utility, as the case may be. Any dispute regarding the availability of transmission facility shall be adjudicated upon by the Appropriate Commission.

10. In the light of above statutory provisions, the jurisdiction of the Central Commission is as follows:-

(a) To specify by regulations the provisions for non-discriminatory use of inter-state transmission system as defined in Clause (36) of Section 2,

(b) To specify the payment of transmission charges and surcharge thereon for use of the transmission system belonging to the CTU and other inter-state transmission licensees,

(c) To specify the manner for progressively reducing and eliminating the surcharge as the cross subsidies are phased out,

(d) To specify the manner of payment and utilisation of surcharge,

(e) To require, on an application by any licensee, the use of intervening (inter-state) transmission facilities of another licensee to the extent of surplus capacity available with such licensee, the extent of which is to be adjudicated upon by the Commission, and

(f) To specify rates, charges and terms and conditions for use of intervening (inter-state) transmission facilities, if these cannot be mutually agreed between the licensees.

11. It was argued that if STU network is also used for inter-state transmission, the charges for use of STU network should be computed by the respective SERC. On the question of determination of charges for use of STU network for inter-state transmission, we may point out that under Clause (d) of sub-section (1) of Section 79, the Commission has the jurisdiction to regulate the inter-state transmission and determine tariff for inter-state transmission of electricity. The term "inter-state transmission system" is defined under clause (36) of Section 2, to include the conveyance of electricity across the territory of an intervening State as well as

conveyance within the State which is incidental to the inter-state transmission of electricity. The definition makes it clear that irrespective of ownership of the transmission system, the Central Commission has jurisdiction to determine the charges if the transmission system falls within the scope of "inter-state transmission system" as defined and is used for inter-state transmission. The assets owned by STU to the extent they facilitate an inter-state transmission transaction fall within the jurisdiction of the Central Commission.

12. From the above, it may be concluded that the Central Commission has jurisdiction to specify regulations for open access in case of inter-state transmission irrespective of ownership of the asset.

OBJECTIVES

13. To design a pricing scheme for open access customers, it is necessary to define the objectives of the scheme. The concept paper had identified the following objectives for the transmission pricing scheme:

(a) Promote efficient day-to-day operation of the bulk power market including power trading;

(b) Give economic signal for efficient use of transmission resources;

(c) Give economic signal for investment in transmission;

(d) Give economic signal for location of new generation and loads;

(e) Compensate the owner of the transmission system; and

(f) Be simple and practical.

14. APTRANSCO has suggested that the transmission network provider should be given incentives for making the network available to open access customers. A part of the proceeds from open access customers should be retained by the service provider and the balance should be adjusted against the payments by original beneficiaries. According to IDBI, "cost of service" may be suitable for the time being to attract investment. Once sufficient transmission capacity has been created, market based pricing could be adopted. In the opinion of IDFC, in order to be effective, open access regime should (a) encourage efficient use of existing network, (b) reflect economic value of existing link, (c) be least obstructive, if not conducive, to the emergence of competitive electricity market and (d) give appropriate signals for new investment. KERC has opined that pricing should achieve goals of productive efficiency (production of goods at minimum cost) and allocative efficiency (siting and investment signals). According to KERC, the transmission tariff at each connection point needs to unbundled into connection charges, fixed charges and other adjustments to provide clear signals to users. MPERC has suggested additional objectives of grid safety, regulatory certainty and level playing field (for new transmission utilities and users).

15. We feel that grid security cannot be left to be achieved through pricing scheme alone. To achieve the goal of grid security, all the open access customers should abide by the provisions of IEGC in force from time to time. The provisions of non-discriminatory access in the Act itself ensures level playing field and we have to follow the same. The issue of regulatory certainty is important but pricing scheme must change with time according to factors such as policy framework, legal framework, operational experience, technological and market development. International experience, at least in the developing countries, indicates that marginal pricing leads

to insufficient revenues for network expansion. So we do not see any possibility of purely marginal price based scheme. In our view the incentives need not be given to the transmission service provider for providing open access because its revenue requirement is fully met by the original beneficiaries.

16. In our view simplicity, ease of application and recovery of cost are the most essential characteristics of the transmission pricing scheme. We shall keep these characteristics in mind while deciding on various issues related to open access. On the issue of promotion of network expansion, we feel that network expansion in the near future is likely to be driven, mainly by planning. However, we feel that pricing mechanism should encourage investment and wherever possible should create opportunities for required investment.

TRANSMISSION PRICING ALTERNATIVES

17. In the concept paper, different methods of pricing such as contract path method, postage stamp method, MW-mile method and congestion pricing method have been discussed. A new concept of incremental postage stamp method in addition to the traditional contract path method was also discussed in the concept paper for consideration of the stakeholders. During the open hearing, some additional options were discussed by some of the participants. The views of the participants on the different methods discussed at the open hearing are summarised below:

(i) **Contract path method** – In this method, the charges payable by the user are related to one of the several possible transmission paths. This method is presently applied for determination of wheeling charges for SEB system used for inter-state transmission. For this purpose, contracted path is

defined as the shortest route formed by a series of transmission lines which are capable of carrying the contracted power between point of drawal and the point of injection. In the case of inter-state transmission, the network is not so cramped and it is possible to assess the length of the contracted path up to a degree of correctness. The contracted path method would reflect distance in its charges, giving right economic signals, and also avoid pancaking to a large extent. NTPC, NREB, BBMB, MPCL, NEEPCO, WREB and JIL have supported this method. MPERC has recommended application of this method in cases where clear line of power flow can be determined. The arguments given in favour of this method are that it is simple, well known and sensitive to distance. CEA, TNERC and EREB have not favoured this method. The arguments against application of this method are that –(a) it would not reflect true cost in many cases such as transmission taking place in displacement mode, and (b) actual path may be different from contract path.

(ii) **Incremental postage stamp method** –In the concept paper, one of the options suggested was incremental postage stamp method. This method envisages the country to be demarcated into squares of 100 km x 100 km and the charges payable by the open access customer are determined by counting the squares vertically and horizontally from the source to sink of the transaction. Incremental postage stamp method would avoid the need to assign a specific path for each transaction as required in the contracted path method. Further, this method makes the rate sensitive to distances exceeding 100km. GRIDCO, WBSEB, Railways, IDFC and IDBI have opined in favour of this method. MPERC has recommended application of

this method in cases where clear line of power flow cannot be determined. The main argument put forward in favour of this method is the ease of implementation. TERI has expressed a view that counting rule for the stamps would lead to pancaking, sharing of stamps between STU and CTU would add complexity and physical distance does not represent true picture in case of transmission by displacement. Hence TERI has argued against adoption of this method. CEA has not favoured this method on the ground that this method tries to create an artificial and non-existent demarcation. Another problem anticipated in the implementation of this method is that it would require digitization of the power map, identifying all sub-stations which may often be located not in the cities or towns but in the villages.

(iii) **MW-Mile method** – Another alternative is "flow-based pricing" or "megawatt-mile" pricing, as it is popularly known. In this method the transmission rates explicitly reflect the cost of transmission, based on both the megawatts of power flow and the network usage between the receipt and delivery points. The cost of transmission per megawatt-mile is the total cost averaged over megawatt miles of usage. MW-mile is a sophisticated and scientifically analytical method. This method involves load flow analysis to model power flows on the transmission network to determine charges and hence requires complete network data. This method can also take into account the energy losses. Dr P.K. Kalra et al of IIT, Kanpur have supported this method in view of the non-practicability of the more sophisticated and powerful nodal pricing method adopted by most of the developed countries. They have also

pointed out that MW-mile method can be modified to take care of congestion management. JIL has advocated MW-mile pricing for IPPs. IDBI has recommended adoption of MW-mile-duration method in the medium to long term. SREB and IDBI have pointed out that MW-mile method is most scientific method but it is too complex to be applied in the present conditions.

(iv) **Existing regional postage stamp method** - The transmission and wheeling tariff of CTU is presently determined under the Commission's tariff notification dated 26.3.2001, valid up to 31.3.2004. The annual transmission service charges of CTU are calculated Region-wise according to the above notification and recovered from the beneficiaries on monthly basis. Where ABT has been implemented, the transmission service charges are apportioned to different beneficiaries pro-rata on the basis of their capacity allocation (MW) out of the total capacity (MW) handled by the transmission system in the Region. This takes into account the allocated central generating capacity to different states, bilateral exchanges as well as capacity brought in through trading. In the pre-ABT period, the transmission service charges apportioning was done pro-rata on energy drawal basis. The transmission service charges are inclusive of Return on Equity, Interest on loan, depreciation, Operation & Maintenance expenses, Interest on Working Capital, etc as per the existing tariff notification. Thus, in a Region, the transmission service charges of CTU are recovered from the State beneficiaries on postage stamp basis. In case of inter-regional transactions, the drawing utility has to pay to CTU, transmission charges applicable to its Region

and wheeling charges for the exporting Region. At present, there are no wheeling charges for the use of CTU network in the intermediary Region. The wheeling and transmission charges are being levied at same rates for CTU system. TERI, PTC, EREB and SREB have expressed their views in favour of the regional postage stamp method. Dr. Kalra et al have opined against any kind of postage stamp method on the ground that it leads to pancaking and provides no information about congestion. BSEB has strongly opposed the present practice of not levying the wheeling charges for intermediary regions.

(v) **Zonal postage stamp matrix Method** - Method CEA has suggested an improvised version of incremental postage stamp method, in which the country is demarcated into 14 zones, each represented by one or more States. Stamps between various zones are counted not only by the physical distance but also by taking into consideration the mode of transmission (i.e. actual flow or displacement). Based on the existing network and flow patterns, CEA has also suggested a matrix of stamps between various zones based on notional distances. The notional distance captures the existing flow pattern and impact of incremental flow due to open access transaction. This method, thus, tries to replicate the results obtainable from the MW-mile method, without going into complexities of the latter. The notional distances are in the multiples of 100 kms and each postage stamp is equal to notional distance of 100 kms. The maximum notional distance has been limited to 1600 Kms to limit maximum payable transmission charges. The notional distance within a zone is 400 km.

(vi) **Single national postage stamp Method:-** This method was suggested by Shri Harry Dhaul of IPPAI. He was of the view that single national postage stamp rate would promote trading as there would be no uncertainty and confusion about the applicable transmission charges. Shri Dhaul had agreed to submit methodology for calculation of the national postage stamp rate, which he has not submitted. GRIDCO and Power Department, Goa opposed the proposal made by Shri Dhaul. In our view, the electricity grid is at present predominately regional and does not have the capacity and capability to transfer freely substantive amount of power across the region. The idea is, therefore, premature, but could be considered in future when objective of formation of a national grid is achieved.

(vii) **Free wheeling**: POWERGRID has suggested that wheeling service should be offered free of charge and the open access customers should compensate for incremental losses only. In support of its stand, POWERGRID has argued that the existing customers have paid for associated transmission system and the use of transmission surplus capacity does not entail any extra cost. Further, transmission surplus capacity is non-firm, low priority. However, POWERGRID has supported levying reasonable wheeling charges for inter-regional links. The state beneficiaries present during the hearing vociferously opposed the idea of free wheeling and demanded that they must get due credit if the transmission capacity contracted by them is used by a third party for wheeling.

18. It is clear that most of the stakeholders have opined in favour of some kind of postage stamp principle for charging the open access customers. At the open hearing on 25.9.2003, the stakeholders had requested for some time to react to new proposals that emerged during the open hearing. In view of this, the presentations of the CEA, POWERGRID, SRLDC and MPERC made during the open hearing were put on the Commission's web-site and all concerned were allowed time up to 2nd October 2003 for submitting their comments/suggestions. After the open hearing, ASEB has supported the concept of single national transmission tariff. PSEB, MPSEB and ATL have supported regional postage stamp method. BSEB has supported the regional stamp method for beneficiaries of the Central Sector Power. However, for IPP and CPP of the region and generating or exporting utilities from outside the region, BSEB has suggested incremental postage stamp method. PSEB has recommended a rate of 125% of the pooled regional rate for open access customers to compensate for depreciation of CTU assets already paid for by the original state beneficiaries. It has also suggested loss-sharing on average basis but recovering another 5% of pooled regional tariff from open access customers to cover incremental losses. RRVPNL and BSEB are not in favour of free wheeling as proposed by CTU and SRLDC. HVPNL has agreed with SRLDC proposal of free wheeling only when open access is required by the beneficiaries who are already paying the transmission charges and for other open access customer it has opted for CEA's zonal stamp method with certain modifications. RRVPNL, Prayas and NEEPCO have expressed general agreement with CEA approach. Prayas has suggested better articulation of underlying principles for arriving at notional distances in the CEA matrix can be rebuilt after few years. It has also expressed disagreement with limiting the maximum notional distance to 1600 kms as this is against the overall principle of replacing cross-subsidy by explicit

subsidy. MPSEB has suggested that in case CEA's method of zonal stamp matrix is adopted the study conducted to arrive at the matrix should be debated to make it transparent. MPSEB has further suggested in cases such as wheeling from captive plant to its works, where the points of injection and drawal as well as the path are clearly identifiable, contract path method should be used. TNERC has stated that any over ambitious move is to be avoided for the present.

19. It is apparent that there is no consensus among the stakeholders and others on adoption of any particular method for pricing. Many of the participants were in favour of continuation of the existing regional postage stamp method whereas some others favoured either incremental postage stamp method proposed in the concept paper or CEA's improvised zonal postage stamp method. The proposal of CEA is considered to be at the conceptual stage only and further work is required to be done to make it operational by further simplifying, if possible. The Commission is separately working on this and before taking a final view in the matter, we shall be circulating the draft proposals to the stakeholders for comments and suggestions.

CONCLUSION REGARDING OPEN ACCESS PRICING

20. We have carefully considered views expressed by the participants on the above issue. We consider it advisable that before implementing a new method, the existing methodology of wheeling charges for inter-state transmission, that is, Regional Stamp Method as per the Commission's notification dated 26.03.2001 on terms and conditions of tariff as amended, shall be followed in respect of all such entities who are now eligible to seek open access for inter-state transmission with immediate effect. According to the existing notification dated 26.3.2001 an utility

importing power from other region is required to pay wheeling charges applicable to the exporting region, the transmission charges for inter-regional assets, wheeling charges for the intervening state utility, if any, and the transmission charges applicable to the importing region. We are opting in favour of the existing method to set in motion the process of open access in inter-state transmission as mandated in he Act, 2003. Further, an open access customer shall have the option like any other existing beneficiaries, to enter into long term Bulk Power Transmission Agreement (BPTA) for use of inter-state transmission system. In such a case, the transmission service charges will be determined according to the tariff norms as notified by the Commission. This will maintain the continuity and allow time to gather practical experience in the matter. Simultaneously the Commission will continue debate on `Zonal Postage Stamp Matric Method' proposed by CEA and other alternative methods for taking a final view. The proposals will be placed for discussion shortly.

CATEGORISATION OF CUSTOMERS

21. The concept paper has suggested categorisation of open access transmission service into firm and non-firm service. The existing customers were put into a separate category of original beneficiaries. It is also suggested that the existing transmission service agreement will have to be honoured and open access should be made available to the extent of spare transmission capacity. APERC has suggested that the Commission should specify the guidelines for identification of original beneficiaries and the manner in which the new users are relegated to the status of original beneficiaries. APERC has raised a very important issue of identifying the original beneficiaries. In the concept paper this term was used to denote the beneficiaries of a transmission system (or their successors), who had allocation from the ISGS and for

whom this transmission system has been designed to evacuate and supply power from ISGS. This would have meant that no new entity could have entered into this exclusive club of “original beneficiaries”. In our view, such an arrangement amounts to discrimination and, therefore, we would like to treat the “original beneficiaries” and all the new long-term open access customers in the general category of “long-term customers”. Accordingly, an open access customer has been given the option like any other existing beneficiaries, to enter into long term Bulk Power Transmission Agreement (BPTA) for inter-state transmission. We do not think it is appropriate to categorise short-term open access customers into “firm” and “non-firm” categories. This is because in actual practice, “firm” service can also be curtailed if system security so demands, albeit as a last resort. Considering the need for short-term and long-term service for open access, we direct categorisation as under:

(i) Short term :

Up to One day

Up to one week

Up to one month

Up to one year

(ii) Long term :

Five years or more

22. Allotment priority of long-term service shall be higher than the short-term service. However, within a category of service, request for service of longer duration shall get preference over request for shorter duration.

PROCEDURAL ISSUES

23. In the concept paper it was provided that the person desirous of obtaining open access shall approach the nodal agency for the purpose, who will co-ordinate with the concerned agencies on the question of grant of approval for open access. WBSEB has expressed that Discom and captive generating plants seeking open access on the transmission system, including that owned by CTU, should apply to STU within which they are located, who in turn would apply to CTU or the nodal agency. When the consumer is allowed open access by SERC, the buyer/seller should approach the concerned STU and CTU or the nodal agency, as the case may be. KERC has stated that at this stage the Commission is to specify only principles and regulations, and the actual tariff determination is to be done on receipt of application, its publication and after hearing objections in terms of Section 64(1).

24. We are of the opinion that to promote trading and completion through open access it is essential that the prospective customers should not be made to approach multiple agencies. Hence, the provision of approaching the nodal agency (as suggested in the concept paper), which in turn shall co-ordinate with other agencies, seems to be justified. On the issue raised by KERC, we would like to point out that the Commission is formulating only principles and methodology for open access in inter-state transmission. The methodology to be formulated has to be simple and conducive to trading and market development. If each and every open access customer is required to approach the Commission for determination of applicable open access charges, opportunity for many short-term transactions particularly of hourly or daily nature, may be lost.

Nodal Agency

25. The concept paper has suggested that RLDC within whose area the point of drawal is located shall be the nodal agency. CEA has suggested that RLDC can be nodal agency for day long or part day customers but for open access for more than a month the nodal agency should be CTU. PTC has also suggested that short-term transactions should be handled by RLDC and long-term customers should be dealt with by CTU. We are in agreement with the above suggestion. Accordingly, the nodal agency for long-term access shall be CTU, and the nodal agency for short-term access shall be RLDC of the region in which point of drawal is located.

Procedure for Becoming Long-Term Customer

26. The application for joining the regional transmission system as long-term customer shall be submitted to CTU. In case of long-term customer, an application fee of Rs one lakh by demand draft drawn in favour of CTU shall be submitted along with application, as non-refundable processing fee. The CTU shall carry out studies in consultation with the RLDC and STUs to find out if the request can be accommodated within the existing network or augmentation/strengthening of the network is required. If the existing network can accommodate the request of the applicant, the CTU shall indicate the date from which the applicant can get the service. In case, system strengthening is required, the CTU will identify the scope of work along with estimated cost and probable date of commencing the service and inform the same to the applicant within 90 days.

Procedure for Short-Term Customer

27. The short term open access customers will have to apply for seeking inter-state transmission access to the nodal RLDC giving necessary details such as capacity required, point of injection, point of drawal, duration, average load, peak load, etc.

Transmission Service Charge

28. We direct that the transmission service charges for the system strengthening shall be shared by all long-term customers in accordance with the method stipulated in the Commission's tariff notification dated 26.03.2001 as amended from time to time. This is because system strengthening increases redundancy and reliability of the system for all the users. However, the transmission service charges for the dedicated transmission system constructed for the long-term customer shall be borne entirely by the customer. Therefore, such customer can decide on the agency for constructing dedicated transmission system, subject to issuance of the license to the construction agency by the Appropriate Commission, where mandated by the Act.

Processing of Application

29. The request for transmission access will be processed by the nodal RLDC/CTU in a time bound manner. The timetable as given below for processing of the application shall be followed:

S.No.	Duration of service	Max. Processing time
1.	Short Term Service	
	Up to One day	One day
	Up to one week	Three days
	Up to one month	Seven days
	Up to one year	Thirty days
2.	Long Term Service	
	Five years or more	Ninety days

First Right of Refusal

30. Current open access customers will have the first right of refusal to capacity being used by them. They will be given preference in allotment, if they are willing to match the duration of service being sought by potential customer(s).

Curtailment Priority

31. In the concept paper, it was suggested that the original beneficiaries should get preferential treatment over the open access customers when it comes to curtailment of the service. CEA has also suggested lower curtailment priority for original beneficiaries and higher curtailment priority for open access customers. MPERC has questioned as to why open access customers and original beneficiaries should not be treated at par in the matter of disconnection. The reason for making available this option of equal curtailment priority to long-term open access customers is that this will promote long-term commitments and thereby lead to expansion of the transmission network. This is important in the context of the apprehension expressed by a number of participants that making spare transmission capacity available to open access customers would lead to clogging of the network in the absence of any mechanism to promote network expansion. This will also take care of MPERC's objection to giving preferential treatment to original beneficiaries. Accordingly, we decide that in case of transmission constraints, short-term customers shall be curtailed first followed by long-term customers. Within a category of service, customers with varying duration of contracts shall have equal curtailment priority, that is, they will be curtailed on pro-rata basis.

Adjudication

32. Any dispute between the open access customer and the transmission service provider shall be presented to the Commission for appropriate decision, in case no amicable solution could be found by mutual discussion.

Other Commercial Conditions

33. For transmission service charges and scheduling & system operation charges such as terms of payment, credit worthiness, indemnification and force majeure etc shall be mutually settled.

34. Other issues related to open access are discussed below:

SCHEDULING AND SYSTEM OPERATION CHARGES

35. The concept paper had envisaged payment of scheduling and system operation charges to RLDCs and SLDCs involved by the open access customers. It recommended that RLDC charges per MW per year may be calculated by dividing RLDC charges approved by the Commission for the year 2003-04 by the installed capacity of the Central Sector stations in the country. An illustrative calculation enclosed in the concept paper indicated Rs 200/MW/week as the scheduling and system operation charges. It was also mentioned that minimum RLDC charges payable will be on per week basis irrespective of the distance involved. Revenue recovered by RLDC from open access customers was proposed to be used for reduction in total RLDC charges payable by the original state beneficiaries. APTRANSCO has expressed that SLDC charges for different states could vary from RLDC benchmark and hence, SLDC should be allowed to charge based on their

estimation of cost and capacity. KERC and RERC have expressed that as per the Act, SLDC charges are to be determined by SERC. GRIDCO has observed that scheduling and system operation charges should be determined on regional basis rather than national basis as it may result in discrimination against the original beneficiaries. According to TERI, sharing of RLDC charges on the basis of energy appeared more reasonable. CEA has expressed that these charges should be distance-related as tie up efforts and system-monitoring burden is dependent on distance of transaction. JIL has supported the proposal contained in the concept paper. PTC has suggested that short term trading makes only incremental use of RLDC and hence only incremental cost of service should be recovered for short-term trading. Moreover, transaction spanning less than a week should be charged by applying per MW per week rate on pro-rata basis. POWERGRID has suggested that wheeling party should be required to pay Rs.3000/- per day plus Rs.2000/- per schedule revision to RLDC concerned for extra effort. The extra effort does not depend on the size of the transaction and, therefore, RLDC charges need not to be in per MW term. Prima facie, we are satisfied that scheduling and system operation charges should be on per transaction basis. Efforts required to put in by RLDC may not be correlated with the size and distance of the transaction. We, therefore, are in agreement with the suggestion of POWERGRID that scheduling and system operation charges shall be Rs.3000/- per day plus Rs.2000/- per schedule revision. This rate shall be applicable to all SLDCs as well as RLDCs involved in the inter-state transaction. These charges shall also be levied to all the open access customers opting for short-term service. The revenue collected from these customers shall be subtracted from the gross RLDC charges approved by the Commission to arrive at net

RLDC charges, which shall be shared by the long-term customers in the ratio of their respective entitlements.

36. Section 32 (3) of the Act provides for determination of SLDC charges for *intra-state transmission* of electricity by the State Commission. In the instant case, the issue is fixation of SLDC charges, if SLDC is involved in inter-state transmission. Therefore, in line with the jurisdiction of the Central Commission on the determination of tariff for inter-state transmission, we have for the present decided to apply scheduling and system operation charges for inter-state open access transaction for SLDCs also.

37. TERI and NTPC have opposed the proposal in the concept paper that scheduling and system operation charges should be recovered from generators also. They have argued that ultimately the generator shall also recover the same from the beneficiaries. We would like to draw attention to Section 28(4) of the Act, which stipulates recovery of RLDC fee and charges from generators and licensees. Accordingly, we decide that scheduling and system operation charges shall be recovered from generators also, if they have sought open access.

ENERGY ACCOUNTING

Active Energy

38. Accounting of active and reactive energy is another important issue. Accounting of active energy is necessary not just for settlement between the buyer and the seller but more so because actual drawals seldom match with schedules and the issue of balancing energy crops in. This mismatch for inter-state transactions is

presently handled through UI charges. In the concept paper the same mechanism was recommended for open access customers also. In the concept paper two types of customers were identified– (i) directly connected to CTU network (direct customers) or (ii) Embedded in the State and connected to the CTU through the State network (Embedded customers). It was suggested that the direct customers should be treated at par with the existing entities connected to CTU network and their energy accounting will be done in an identical manner. As regards embedded customers, the following was suggested:

(i) SLDC shall forward its own drawal schedule and the drawal/injection schedule of the embedded customers separately to RLDC on day ahead basis,

(ii) For any deviations from the schedules, RLDC will present a composite UI bill to the State (SEB/TRANSCO) as is being done now. Further apportioning/recovery of UI charges from the various Discoms and embedded customers in the State would normally be the responsibility of the State/SLDC.

39. POWERGRID has stated that the SLDC concerned will have to take care of scheduling, energy accounting, UI settlement. The RLDC should operate only on the inter-state boundaries. BSEB has expressed disagreement with the method suggested in the concept paper for accounting in regard to embedded customers. BSEB has proposed that embedded customers should forward the drawal/injection schedule directly to RLDC and RLDC should directly present UI bill to embedded customers. MPERC has raised an important issue as to which agency should be billed for UI charges. According to MPERC, STU should not be billed, as it is purely a wire

company. It has suggested an alternative that SLDC should be given the bill for UI charges, which in turn can collect or pass it on to embedded customers. RVPNL has expressed apprehension that open access customers may indulge in unfair game of over drawal if the frequency is in the vicinity of 50 Hz.

40. We are of the opinion that in case of inter-state open access transactions, the mismatch between schedules and actuals shall be met from the grid and hence the UI pricing mechanism which is applicable to all inter-state transactions has to be applied for open access customers also. ABT has already been implemented in four regional grids and forms basis for accounting for deviations from the schedules. It is high time that the same methodology and procedures for energy accounting are implemented at the State level also. This will facilitate segregation of UI charges among Discoms as well as embedded open access customers on a rational basis. Section 61(1)(a) of the Act stipulates that State Commissions are guided by the procedures and methodologies specified by the Central Commission for determination of tariff applicable to generating companies and transmission licensees. It needs to be emphasised that only when States follow the regional accounting procedures and implement ABT, the intent of the Act in respect of open access shall be completely implemented. As regards the responsibility for UI charges, in the single buyer model operating at present, SEB or successor Transco buys power and distributes it among the Discoms. Accordingly, UI bills are presently being issued to SEBs or successor Transcos and same methodology shall continue.

Reactive Energy

41. MPERC has stated that reactive energy charges should be decided by SERC's as it impacts the state system. RERC has suggested that the penalty/reward scheme for reactive energy should be applied to generator supplying to open access consumer at the point of interconnection with regional grid and the consumer should pay or get incentive according to power factor surcharge of the respective Discom.

42. We do not visualise any problem of reactive energy charging for open access customers directly connected to CTU network. As suggested in the concept paper, the reactive energy charging scheme as approved by this Commission may be straightway applied to them. In case of embedded customers, the impact of reactive energy drawn/injected by the state from/to ISTS is not related to the reactive or active power drawn/injected by the open access customer inside the state system. Therefore, the reactive energy charges payable/receivable by the State according the scheme approved by the Commission shall be paid to / received from the pool by the State concerned alone and shall not be apportioned to the embedded open access customers. However, reactive energy drawals/injections by such customers will affect voltages in the local network and hence, we are of the opinion that the local regulations for reactive charges should be applied.

Special Energy Meters

43. In the concept paper it was suggested that energy accounting of direct customers shall be carried out in a manner identical to that being done now for existing entities. This implies that direct customers will have to install Special Energy Meters. It was also mentioned that if required, the embedded inter-state customers

may have to install the Special Energy Meters capable of time differentiated measurement (15 minutes) of active and reactive energy. NREB has suggested that all the Special Energy Meters should be of the same specification as already installed by CTU. It has proposed that CTU can install meters for he open access customers on rental basis during the term of the contract. TNERC has expressed that installation of the Special Energy Meters may not be possible for all types of consumers. MPERC has also stated that the Special Energy Meters may be an expensive proposition for small customers. On the other hand, Prayas has contended that price of meter should not be a barrier when compared with the value of energy being metered. POWERGRID has stated that for all intra-state parties, the Special Energy Meters have to be installed by STU concerned.

44. We have no doubt that the Special Energy Meters along with requisite communication facilities will have to be installed by the direct customers and if required by the embedded customers also. The price of these meters cannot be considered to be prohibitive so as to discourage open access transactions. In any case, the customers opting for open access in the inter-state transmission are expected to be big customers and not the small ones as anticipated by MPERC. The Special Energy Meters shall be capable of time differentiated measurements (15 minutes) of active and reactive energy as per RLDC/CTU requirements. The same shall be open for inspection/ testing by CTU/RLDC. The meters shall be tested and maintained in good condition.

Energy losses

45. An issue equally important as price of service is treatment of losses. An open access transaction will most likely change the overall system losses. If this transaction gives rise to counter flow, losses may reduce and vice versa. In the concept paper two options were put forward - sharing of average losses by all customers and payment of incremental losses by open access customers. It was also indicated that the option of sharing of average losses should be preferred mainly because of the ease of implementation. TNERC, EREB, GRIDCO, NTPC, NREB, NEEPCO, JIL, BSEB, RERC and MPERC have advocated the principle of sharing of average losses. CEA has expressed that assessment of incremental energy losses is not unnecessary complication rather is an important step in achieving optimum dispatch. POWERGRID, APERC and IDBI have also supported principle of applying incremental losses to open access customers. PTC has expressed desirability of fixing transmission losses in percentage for each Region in different bands of power flow. It has further stated that transmission losses need to be handled in different manner for each class of transaction for firm long-term contract, incremental energy loss and for short-term contract existing method of computation of losses may be more appropriate. During the hearing, CEA had suggested that the zonal stamp matrix could be used for allocation of losses to a fair degree of accuracy. In view of the divergent views by the stakeholders in the matter, we are of the opinion that for the present the existing methodology as per para 4.9 of the Commission's notification dated 26.03.2001 shall be continued for open access customer.

GRID SUPPORT CHARGES

46. MPSEB has raised another somewhat connected issue. It has stated that certain class of consumers inject harmonics and flickers in the system due to load characteristics. MPSEB has contended that the transmission company should be empowered to stipulate requirement of SVC, shunt-capacitors, filters or any other equipment to suppress these undesirable effects. If any open access customer does not agree to this requirement, the transmission company should be at liberty to deny access to such consumers. MPSEB has also expressed that unbalanced loads (single or two phase) should pay for ill-effects of system unbalance such as neutral current, additional losses, etc. Similar views with regard to quality of load have been expressed by RVPNL. MPERC, MPSEB and RVPNL have suggested levy of grid support charges on the open access customers.

47. We are of the view that the undesirable effects mentioned by MPSEB and RVPNL are confined primarily to the local network and hence all the local regulations in this regard should be applicable to the consumers seeking open access. The consumers seeking open access need not be singled out for stipulating any special requirement. As regards grid support charges, we feel that if the issues of payment for balancing (active) energy and reactive energy are settled, there will not be any need for separate grid support charges.

SURCHARGE

48. As already mentioned, the Central Commission is to specify surcharge payable by the consumer as and when open access is allowed by the State Commission, in case the system of inter-state transmission licensee (CTU) is used for open access. In

this case, the Central Commission is also required to specify manner of payment and utilisation of surcharge. In the concept paper, it was suggested that the Central Commission should keep in view the information furnished by the State Commission in this regard. TNERC has suggested that the issue of surcharge payable by consumers embedded in the distribution system should be totally left to the respective STU and SERC. MPSEB has also expressed similar views. APERC has expressed that SERC is required to decide on a cross subsidy reduction and elimination path as per Section 39 of the Act and the same is also expected from the Central Commission as per Section 38 of the Act. APERC has envisaged a potential problem if the cross subsidy path determined by both the Commissions is different. In APERC's understanding, it is for the State Commission to compute the current level of cross subsidy. APERC has suggested that while determining the surcharge, the Central Commission should adopt, in full, the surcharge prescribed by the State Commissions and CTU should collect this surcharge and pass it on to the licensee as identified by the State Commission. RVPNL has pointed out that the surcharge under Section 42(2) and additional surcharge under 42(4) are payable by the open access customers.

49. We are aware of the danger pointed out by APERC about the possible mismatch of philosophies of the State Commissions and the Central Commission. While discharging its responsibility, therefore, the Central Commission has to depend upon the information regarding the level of cross-subsidy and surcharge (if any) decided by the State Commission while issuing regulations allowing open access to consumers. For us, however, it is important that uniformity in the methodology for

calculating the surcharge is adopted by SERCs. As regards additional surcharge as pointed out by RVPNL, the jurisdiction lies with State Commission.

INFORMATION SYSTEM

50. In the concept paper, staff had recommended that every transmission service provider (CTU/STU/Transmission Licensee) should maintain an internet based information system giving information on line-wise total transmission capacity (TTC), existing allocations of the transmission capacity and available transmission capacity (ATC). NTPC has suggested that real time information must be made available to all the market players including generating companies and on line dedicated internet-based system integrated with RLDC's system should be made available by RLDC. Railways have commented that the information should be available to any person on payment of fee to be decided by CERC. PTC has expressed that RLDC/CTU should make arrangement for free supply of real time data to traders on request and the RLDC charges and CTU compensation should be inclusive of the above. Dr Kalra et al have suggested that the system operator should provide information about TTC and updated ATC to open access customers. This information may be updated on half-hourly basis and should be available on line. CEA has observed that declaration of ATC and TTC would be impractical and complicated at the introductory stage of open access. CEA has also stated that in the scheme suggested by it, such declaration will not be required. POWERGRID has commented that the information system specified in the concept paper is neither practicable nor necessary. An interested party has to first determine source of cheaper power and point of its beneficiary utilisation and thereafter approach RLDC/SLDC concern. The latter will then check availability to

accommodate the proposed transaction. MPERC has favoured advance declaration of ATC on year-ahead, week-ahead and day-ahead basis.

51. We have come to the conclusion that real time information system is neither practical nor required for the present. In general, we agree that ideally the information about ATC should be available on line, but design and development of such system takes time and requires a separate consultation process. It is a sensitive issue and requires access to secure information. This is the experience even in the developed countries. Therefore, before arriving at the design of such system, not only all the stakeholders need to be consulted but international experience has also to be taken into account. Further, having laid down broad rules regarding allotment and curtailment of various types of wheeling services, we believe that desired level of transparency can be achieved. We are alive to use of information technology for optimisation of the system operation and will decide in future about the real time information system based on the quantum and number of open access customers and experience of operation. Since we have decided against the real time information system for the present, the additional compensation to CTU for development of information system as proposed in the concept paper is not necessary.

TREATMENT OF EXISTING WHEELING TRANSACTIONS

52. An issue, which was not discussed at all is the fate of the inter-state transactions taking place once new regulations come into effect. On a careful consideration, we have come to the conclusion that buyers, sellers and traders involved in the existing inter-state transactions should be given 30 days notice to apply afresh and should be given priority in allotment in the respective category for

which they have applied. However, we make it clear that this preference shall be given only at the beginning and not subsequently.

Sd/-	**Sd/-**
(K.N. SINHA)	**(ASHOK BASU)**
MEMBER	**CHAIRMAN**

New Delhi dated 14th November 2003

LIST OF PARTICIPANTS

1 Amalgamated Transpower (India) Ltd. (ATL)

2 Andhra Pradesh Electricity Regulatory Commission (APERC)

3 Transmission Corporation of Andhra Pradesh Ltd. (APTRANSCO)

4 Shri A Raja Rao, Bangalore

5 The Associated Chamber of Commerce & Industries of India (ASSOCHAM)

6 Assam State Electricity Board (ASEB)

7 Bengal National Chamber of Commerce & Industries (BNCCI)

8 Bhakra Beas Management Board (BBMB)

9 Bihar State Electricity Board (BSEB)

10 Shri C Jayapalan, Thiruvananthapuram

11 Central Electricity Authority (CEA)

12 Dr. PK Kalra , Shri Yogesh Bichpuriya and Shri Vipin P. Singh (All IIT, Kanpur), Dr AK Saxena (DEI, Agra) (Dr Kalra et al)

13 Eastern Regional Electricity Board (EREB)

14 Grid Corporation of Orissa Ltd. (GRIDCO)

15 Government of Madhya Pradesh (GOMP)

16 Haryana Vidyut Prasaran Nigam Ltd. (HVPNL)

17 Industrial Development Bank of India (IDBI)

18 Industrial Development Finance Company Ltd. (IDFC)

19 Indian Aluminum Company Ltd. (INDAL)

20 Jaiprakash Industries Ltd (JIL)

21 Karnataka Electricity Regulatory Commission (KERC)

22 Kerala State Electricity Board (KSEB)

23 Kerala State Electricity Regulatory Commission (KSERC)

24 Koyela Energy Resources Pvt. Ltd. (KERPL)

25 Madhya Pradesh Electricity Regulatory Commission (MPERC)

26 Malana Power Company Ltd. (MPCL)

27 Neyveli Lignite Corporation Ltd. (NLC)

28 North-Eastern Electric Power Corporation Ltd. (NEEPCO)

29 Northern Regional Electricity Board (NREB)

30 National Thermal Power Corporation Ltd. (NTPC)

31 PHD Chamber of Commerce & Industries (PHDCCI)

32 Power Grid Corporation of India Ltd. (Powergrid)

33 Power Trading Corporation of India Ltd. (PTC)

34 Prayas

35 Ministry of railways (Railways)

36 Rajasthan Rajya Vidyut Prasaran Nigam Ltd. (RVPNL)

37 Rajasthan Electricity Regulatory Commission (RERC)

38 Satluj Jal Vidyut Nigam Ltd. (SJVNL)

39 Southern Regional Electricity Board (SREB)

40 TCE Consulting Engineers Ltd. (TCE)

41 The Energy and Resources Institute (TERI)

42 Tamil Nadu Electricity Board (TNEB)

43 Tamil Nadu Electricity Regulatory Commission (TNERC)

44 West Bengal State Electricity Board (WBSEB)

45 Western Regional Electricity Board (WREB)