

BEFORE THE CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI

**Petition No.86/2000**

**Coram**

1. Shri S.L. Rao, Chairman
2. Shri D.P. Sinha, Member
3. Shri G.S. Rajamani, Member
4. Shri A.R. Ramanathan, Member

In the matter of

Determination of Norms for inter-State Transmission Tariff

The following were present :

1. Shri S.K. Dube, ED (Comm.), PGCIL
2. Shri Suresh Sachdeva, GM (Comm.), PGCIL
3. Shri S.S. Sharma, AGM (Comm.), PGCIL
4. Shri P.T. Yohannan, CE, KSEB
5. Shri K.R.Unnithan, EE, KSEB
6. Shri B.S. Seshadri, SE, KPTCL
7. Shri S. Suryaprakasha Rao, CE (Comm.), APTRANSCO
8. Shri Shiv Raj Singh, Addl. CE, MPEB
9. Shri Deepak Kumar Shrivastava, EE (Comm.), MPEB
10. Shri Santosh Kumar, CE (GM), CEA
11. Shri B.K. Jain, Dir (GM), CEA
12. Shri A.P. Verma, Director (GM), CEA
13. Shri A.K. Saxena, Dy. Director (GM), CEA
14. Shri H.S. Bedi, DY. CE, ISB, PSEB
15. Shri V.K. Gupta, SE (ISB), PSEB
16. Shri A.Muthu Narayanan, SE, Elect. Deptt., Pondicherry.

**ORDER**  
**(Date of Hearing 4<sup>th</sup> October, 2000)**

1. In accordance with Clause (c) of Section 13 of the Electricity Regulatory Commission Act, 1998 (the Act), the Commission is assigned the function, among others, to regulate inter-state transmission of energy including tariff of the transmission utilities. Section 28 of the Act empowers the Commission to

determine by regulation the terms and conditions for fixation of tariff under Section 13 of the Act. In exercise of these powers read with Regulation 24 of CERC (Conduct of Business) Regulations, 1999, the Commission initiated proceedings for determination of normative availability of ISTS, O&M expenses for inter state transmission, sharing of charges for inter-regional assets and wheeling charges for inter-state transmission. The following documents, which were considered to be relevant for the above purpose were circulated among the utilities and the beneficiaries for their response on these issues:

- (i) Government of India, Ministry of Power Notification dated 16<sup>th</sup> Dec, 1997 alongwith amendments issued on 3<sup>rd</sup> March, 1998 and 8<sup>th</sup> April, 1999;
- (ii) Extracts from the report of the Expert Committee on Framework to facilitate private investment in transmission projects (regarding normative availability);
- (iii) Recommendations of the Working Group constituted by Chairman, CEA on wheeling charges;
- (iv) Justification furnished by CEA in favour of fixation of normative availability of 98% for the transmission system.
- (v) Extracts of the report of the Expert Committee regarding O&M expenses; and
- (vi) CERC Staff document on Indexation for O&M expenses;

2. The issues relating to O&M charges are being dealt with through a separate order of the Commission. Therefore, the present order is confined to the other issues namely normative availability, sharing of charges for inter-regional assets and wheeling charges for inter-state transmission.

3. POWERGRID, KSEB, KPTCL, APTRANSCO, MPEB, RRVPNL and PSEB have filed their written responses and have also participated in the oral hearing held by the Commission. MSEB, TNEB, DVC and UPPCL have filed written

submissions but have not participated in the oral hearings. We propose to deal with the issues in the succeeding paragraphs.

**Normative Availability:**

4. In accordance with Government of India's Notification dated 16<sup>th</sup> December, 1997, the fixed charges are recoverable at 95% availability. The issue of prescription of normative availability for transmission system was looked into by an Expert Committee constituted by the Govt. of India to make recommendations on framework to facilitate private investment in transmission projects. The Committee recommended a normative availability of 98.5% for recovery of fixed charges. The relevant extracts of the report were circulated as already noted. CEA had also carried out a study based on historical data made available to it for POWERGRID, BBMB, MSEB and MPEB systems. On consideration and analysis of the data, CEA came to the conclusion that the actual availability of the transmission system was generally above 98%. CEA, therefore, recommended a normative availability of 98%. It furnished detailed justification in support of its recommendation, which was also circulated by the Commission. CEA has also intimated that the National Task Force (NTF) had constituted a Committee on transmission tariff consisting of representatives from NTPC, POWERGRID, NHPC, BSEB, MSEB and RSEB with representative of CEA as the Convener of the Committee. The members of the Committee, except POWERGRID, were of the view that normative availability should be around 98%.

5. PSEB, KSEB, MPEB and TNEB in their responses have pleaded for fixation of normative availability at 98.5% as recommended by the Expert Committee. APTRANSCO and DVC have suggested two different levels of availability; one above which incentives should be paid and other below which disincentives should be applied. They have pleaded that incentive should be paid when availability is beyond 99% and disincentives should be applied when the availability is below 98% / 98.5%. RRVPNL and KPTCL have endorsed the

views of CEA in favour of fixation of availability at 98%. According to MSEB, normative availability level should be fixed initially at 98%, which should be increased to 99% during 2001-02. POWERGRID in its written response has argued in favour of maintenance of status quo since, according to it, the normative availability level of 95% was arrived at after detailed deliberations at Governmental level. It has pointed out that there is no return on equity during construction period; besides there have been delays in issue of tariff notifications and delay in payment by SEBs. These factors bring down average return on equity; fixation of normative availability at 95% was intended to partly compensate for these factors.

6. We have carefully considered the submissions made by the parties on this issue. We find sufficient justification for fixing the normative availability at 98%, recommended by CEA. Nothing has been placed on record to show that availability of 95% was fixed by the Government of India on consideration of the various factors adverted to by POWERGRID in its response. Even otherwise, there does not exist sufficient justification for fixation of normative availability at 95%. We have already advised POWERGRID to file petitions for fixation of transmission tariff well before commissioning of the project so that tariff can be determined well in advance and POWERGRID does not have to face a situation of delay in payment. Also Powergrid should have agreements in place regarding compensation to be paid if there is delay in commissioning either by the generating company concerned or by Powergrid itself. We feel that fixation of normative availability levels lower than what can be achieved by the transmission utility in the normal course is not justified for ensuring adequate return. The normative availability should be fixed in a manner which allows sufficient time for proper maintenance to the transmission utility, but at the same time does not give undue benefit to it. **We, therefore, direct that the normative availability for recovery of full fixed costs shall be fixed at 98%. The transmission utility shall be entitled to incentive or liable for disincentives if actual availability is higher or lower than the normative availability decided by us. The availability of the transmission system for**

**this purpose shall be certified by Member Secretary of the Regional Electricity Board concerned in accordance with the procedure laid down by the Commission vide Order dated 26<sup>th</sup> September, 2000 in Petitions No.12/99, 13/99, 14/99 and 16/99. An order regarding rates of incentives/disincentives shall be issued by the Commission separately.**

**Sharing of charges for inter-regional asset:**

7. The provisions for sharing of charges for inter regional transmission of power are contained in Government of India, Ministry of Power's Notification dated 16<sup>th</sup> December, 1997 as amended vide Notification dated 3<sup>rd</sup> March, 1998. The relevant provisions are extracted below:-

- (i) In case of firm power exchange the monthly transmission charges shall be shared in the following manner:
  - a) One-third by beneficiaries of one region;
  - b) One-third by beneficiaries of other region;
  - c) Remaining one-third as per use i.e. the beneficiaries of the importing region which have received power as per the commitment.
- (ii) In case of non-firm power exchange the notification stipulates sharing of monthly transmission charges in the ratio of 50:50 between the contiguous regions.

8. The "firm power exchange" and "non-firm power exchange" are also defined as under:-

- "(vi) 'Firm Power Exchange' means the uninterrupted transfer of powers in an inter-state / inter regional transmission line including the HVDC system, except in case of force-

majeure, non payment and outage of transmission lines and / or generations units (in which allocations are made) and is committed by agreement, and / or understanding by selling, buying and transmission utilities for a minimum period of one month, unless a shorter period is specifically agreed to.

The firm power exchange could be made between two regions out of unallocated quota / power surrendered by State(s) of one region out of their share in Central Stations or could be the power of State Electricity Boards for bilateral exchange between State (s) of one regions to State(s) of another region.

- (vii) 'Non-firm Power Exchange' means any power transfer in an inter-state / inter-regional transmission lines, (including the HVDC System) which is not covered in the firm power exchange as defined in (vi) above. Such exchange of power between the states or between the regions could be scheduled one day in advance or in real time operation during the course of the day".

9. APTRANSCO, RRVPNL, TNEB and MPEB have argued that monthly transmission charges should be shared equally i.e. in the ratio of 50 : 50 by the regions involved in inter-regional exchange of power since, according to them, the assets used are built for transmission of power in either direction. DVC has suggested that only the importing region should pay the entire transmission charges. POWERGRID and KPTCL have pleaded for maintenance of status quo on this issue.

10. We have carefully considered the points raised on behalf of the parties. This issue needs to be examined in the light of the concepts underlying the planning and expansion of transmission system. The basic purpose of inter-regional links is to facilitate flow of power from surplus to shortage areas across

the regions. In case, the transmission tariff for such transactions are fully loaded on the importing utilities, the total power flow on these lines may get limited and transmission charges per unit for such transactions would become high. This may discourage exchange of power from surplus to shortage areas. A line which is used for import by a utility during a certain period may be used by the same utility for export of power under some other condition. The differentiation between firm and non-firm power transactions would also be contentious. The arrangement of charging one-third of transmission charges as per use may also discourage additional investment in inter-regional lines. Also the fact that inter-regional assets are established for mutual benefit of both the regions by way of rendering timely assistance of power as per requirement, improvement in reliability and quality of supply etc. cannot be overlooked. Further, the establishment of reliable inter-regional links would facilitate formation of national grid. In view of this **we are of the opinion that till such time market based conditions drive such inter-regional transactions, the arrangement of sharing of the transmission charges for inter-regional assets on 50:50 basis by the two contiguous regions irrespective of the nature of power flow would be a better option and shall be followed. Such transmission charges shall be recovered from the beneficiaries by pooling 50% of the transmission charges for such inter-regional transmission lines with the transmission charges for transmission system of respective regions for facilitating further recovery from various beneficiaries within the region.**

**Wheeling charges for inter-state transmission:-**

11. A Working Group was constituted by Chairman, CEA, to study and report on the issue of payment of wheeling charges for inter-state transmission of energy. The recommendations of the working group were circulated amongst all concerned. The paragraphs 4 and 5 of the recommendations, considered relevant for the purpose of present proceedings are extracted below:-

"4. *Transmission Losses*

*Incremental transmission losses will be paid for in respect of intermediary central transmission system/SEB(s)/Power Utility based on the actual studies. Each REB will carry out the studies for various scenarios in the region to calculate the losses for peak load conditions and the same will be converted into energy terms (in %age) based on empirical formula using loss load factor. Till the studies are completed, an ad-hoc rate of 5% as transmission loss for each of the intermediary system will be adopted. The losses will be adjusted in kind.*

5. *Transmission/Wheeling Charges*

5.1 *For firm power*

5.1.1 *For Central Transmission system (CTS) – In the exporting region, the fixed charges of CTS will be paid for by the beneficiaries outside the region as applicable to the beneficiaries of the region. As a gesture of reciprocity and to make inter-regional exchange of power attractive, no transmission charges will be payable for the CTS in the intermediary region, if any, as well as in the importing region.*

5.1.2 *For Intermediary SEBs/Utility system: Wheeling charges shall be calculated by contracted path method using following guidelines:*

- *Contracted path would be shortest SEB/Utility system between point of delivery (Central Sector Station/Sub-station) in one region to point of receipt (Central Sector sub-station) in other region.*
- *Fixed charges of this system would be payable in proportion to contracted power vis-à-vis SIL of the lines in the contracted path.*

- *Total annual fixed charges would consist of O&M charges. Interest on loan and Depreciation @ 1%, 15% and 3.57% of the capital cost respectively.*
- *Capital cost for lines commissioned before/during 1991-92 would be as recommended in Umpire Award in Northern Region/as available in CEA.*
- *For lines commissioned after 1991-92 actual cost of construction would be considered.*

5.2 For non-firm power

*No wheeling charges to be paid for the central transmission system as well as transmission system of the intermediary SEB/Power Utility."*

12. None of the parties has responded to this issue. We are of the opinion that in case of inter-regional transmission of power through POWERGRID system, the total monthly charges payable to them by the importing, exporting and intermediary regions (if any) shall remain the same. **Till introduction of ABT, the sharing of monthly transmission charges shall be in proportion of energy drawal. In case of importing region, the monthly transmission charges payable to POWERGRID shall be shared in proportion to energy drawn as per Regional Energy Accounting including energy drawn from exporting region. In case of exporting region, the monthly transmission charges payable to POWERGRID shall be shared by its constituents and beneficiaries (importing utilities) outside the region in proportion to energy drawn as per Regional Energy Accounting. Subsequent to introduction of ABT, sharing of the monthly transmission charges shall be on the basis of capacity allocation and contracted power as envisaged in the GOI tariff notification dated 16.12.1997. No transmission charges shall, however, be payable by the importing utility for utilisation of POWERGRID system in intermediary region(s).**

13. In case of wheeling of power through SEB/state utility system, the best option is for the importing utility and the wheeling utility to agree mutually on wheeling charges as well as transmission losses. In such cases, approval of the Commission shall not be required. This will facilitate need based inter-state exchanges. However, the wheeling utility shall not deny use of its system merely on the basis of non-agreement on wheeling charges. **If the parties are not able to agree on the wheeling charges, the Contract Path method as recommended by the Working Group shall be used for calculation of wheeling charges. The contract path shall be the shortest route formed by series of transmission lines capable of carrying contracted power between the point of receipt to point of delivery in the wheeling system. Monthly transmission charges of this path would be payable in proportion to contracted power vis-à-vis SIL of the lines in the contracted path. The monthly transmission charges for the contracted path shall be calculated as per the prevailing norms of the Commission applicable to regulated transmission utilities. In case wheeling utility makes some special arrangement (such as backing down cheaper generation) to facilitate exchange, the verifiable opportunity cost or the charges calculated as per contract path method, which ever is higher, shall be payable to the wheeling utility. In any case, the wheeling charges shall not exceed the charges corresponding to a new transmission line of adequate capacity along the contracted path. The Member Secretary, REB of the region in which wheeling utility is located, shall calculate wheeling charges by applying the principles enumerated above.**

14. In case of non-agreement on the issue of transmission losses, the studies to determine incremental transmission losses in the wheeling utility system shall also be carried out by the Member Secretary of the region concerned. These transmission losses shall be payable in kind i.e. the transmission losses shall be compensated by an equivalent amount of energy charged to the importing utility. The transmission losses shall be

**payable in case of POWERGRID system in the intermediary regions also. The Commission may only be approached as per the provisions of CERC (Conduct of Business) Regulations, 1999 in case of disagreement with the decision of Member Secretary, REB. However, pending final decision of the Commission, decision of the Member Secretary, REB shall be implemented on provisional basis.**

15. The residuary matters i.e. those not covered by this order or any other order issued by the Commission, shall be governed in terms of Government of India's Notification dated 16<sup>th</sup> December, 1997 as amended by the Notification dated 3<sup>rd</sup> March, 1998 and 8<sup>th</sup> April, 1999.

16. The terms and conditions determined by this order shall become effective from 1<sup>st</sup> April, 2001 and shall remain in force for a period of 3 years from that date, unless revised earlier by the Commission. These terms and conditions shall be notified separately under Section 28 of the Act.

<b>Sd/-</b>	<b>Sd/-</b>	<b>Sd/-</b>	<b>Sd/-</b>
<b>(A.R. RAMANATHAN)</b>	<b>(G.S. RAJAMANI)</b>	<b>(D.P. SINHA)</b>	<b>(S.L.RAO)</b>
<b>Member</b>	<b>Member</b>	<b>Member</b>	<b>Chairman</b>

New Delhi dated 8<sup>th</sup> December,2000.