

Central Electricity Regulatory Commission

Subject: Explanatory Memorandum – Third Amendment to Sharing Regulations –

1 Background

- 1.1 The Sharing of Inter-state Transmission Charges and Losses Regulations, 2010, notified on 15.06.2010 (hereinafter referred to as Sharing Regulations), implemented from 1.7.2011, provided that the transitory mechanism like Uniform Charges is to be reviewed after two years of implementation.
- 1.2 In addition, certain issues raised by stakeholders in various forums like Central Advisory Committee (CAC) and the issues being agitated in court cases also need to be considered by the Commission.
- 1.3 Besides the above, the transmission planning and the mechanism for sharing of transmission charges need to be synergised. The transmission cost allocation process through the sharing mechanism should not in any way hamper transmission planning process. The prevailing transmission charges billing mechanism based on Long-term Access (LTA) and average case scenario needs to be synchronized with the transmission planning process for creating a robust transmission infrastructure in the country. Since the transmission charges are to be paid by the Designated Inter-state Transmission System Customers (DICs) either injecting or drawing from Inter-State Transmission System (ISTS) based on LTA, it is resulting in conservative LTA declaration by new IPPs and if planning is continued to be done on the basis of LTA, the result of transmission planning would be apparent in form of congestion in future.
- 1.4 Further, as the transmission planning is based on peak scenarios i.e. to evacuate maximum generation and to cater to maximum demand, the computation of PoC charges based on Average scenario does not capture the usage of the transmission system correctly. Also as the new generators are well aware that transmission planning is done on peak scenario, relying on inherent design margin, they declare their LTA conservatively knowing well that their power would be evacuated in short-term and medium- term & they would not be burdened with sharing of transmission charges associated with LTA. To correct this, it is proposed

that transmission charges shall be levied based on actual usage in Peak scenario.

- 1.5 It is also proposed that adjustment of STOA charges be provided against the transmission charges already paid in proportion to the maximum injection / drawl.
- 1.6 In view of the foregoing, the rationale of the proposed amendments is given in succeeding paras.

2 Definition of Application period:

It is proposed that Application period will be divided into four quarters in place of blocks of months proposed earlier. The quarterly computation will capture seasonal condition and variation in usage of transmission system.

This will require consequent amendments in sub clauses (b) and (i) of clause (1) of Regulation 7 of the Principal Regulations.

3 Definition of Approved Injection and Withdrawal based on Peak Scenario.

3.1 Manual on Transmission Planning Criteria issued by Central Electricity Authority in January, 2013 mentioned following criteria for planning of new transmission lines & substations.

"For planning of new transmission lines and substations, the peak load scenarios corresponding to summer, monsoon and winter seasons may be studied."

3.2 As the transmission planning is being done to take care of load generation balance during peak load scenario and computation based on average scenario is not capturing the usage correctly, it is proposed to allocate transmission charges also on the basis of peak injection and withdrawal.

3.3 Maximum Withdrawal vis-a-vis LTA by different DICs (States/UTs) is enclosed at **Annexure -1** and Exhibit-I. A comparison of Peak injection vis-a-vis LTA considered for computation of PoC and by different injecting DICs is enclosed at **Annexure-2** alongwith a graph of maximum injection vis-a-vis LTA for Northern Region generators at Exhibit-II. These indicate the extent of usage of inter- state transmission system by different DICs.

3.4 At present the computation of sharing of transmission charges is being done based on average usage which does not correctly reflect the usage of the

transmission system. For example, the injection by Tehri HPS in Q2 (Peak Monsoon Period) is considered as 659 MW against its installed capacity of 1000 MW which is utilised in during peak periods up to its installed capacity. Similarly Karcham Wanngtoo HPS generates 1200 MW continuously during peak monsoon period, however, in average scenario is generation of 969 MW from the plant is considered. As the transmission system is planned to evacuate installed capacity, transmission charges should reflect commensurate usage of transmission network. Based on CEA data for past period and consultation with the stakeholders in Validation Committee meeting, in each application period, the Peak Injection and Peak Demand is proposed to be forecasted for the ensuing application period and in the second meeting of Validation Committee for the ensuing application period, all DICs shall be informed their Approved Injection and Approved Withdrawal figures from ISTS as finalised after Load Flow studies. The Approved Injection figures shall also include injection from Intra-State entities within a DIC's control area, which is incidental on ISTS.

- 3.5 It is underlined that allocation of transmission charges among users either based on "average usage" or "peak usage" is basically a sharing mechanism of transmission charges. With large difference in peak and off-peak usage and considering the fact that transmission planning process is based on Peak scenario, it is proposed to allocate transmission charges based on peak usage.
- 3.6 There may be issue of allocation of injection charges of Central Sector Generating station to beneficiaries on peak injection basis as beneficiaries may be concerned about higher injection by this generator more than their schedule. At present the charges are allocated based on LTA computed based on ex-power plant capacity (i.e. installed capacity–normative auxiliary consumption) and overload capacity is not considered. In this regard it was noted that first schedule given by these generator is often higher than this LTA and beneficiaries accept this schedule and give their drawal requirement for this power and transmission system caters to this demand. In so far as the injection above the schedule is concerned, it is expected that more stringent deviation settlement mechanism in accordance with the recent Regulation on Deviation Settlement Mechanism will curb injection above the schedule.
- 3.7 Also it was found that certain generators are taking advantage of the proviso that overload capacity was not to be considered for computation of Approved Injection and were injecting upto overload capacity. The CEA transmission Planning Criteria envisages that the line upto pooling point shall be capable of handling overload capacity, so the investment in transmission system need to be recovered based on usage requires that this overload capacity must be accounted for approved injection.

CEA Manual on Transmission Planning Criteria provides as under:-

"13. Planning Margins:

13.2 Against the requirement of Long Term Access sought, the new transmission lines emanating from a power station to the nearest grid point may be planned considering overload capacity of the generating stations in consultation with generators."

- 3.8 As most of the DICs are injecting into or drawing from the ISTS more than LTA, it is proposed that billing of transmission charges be done on the basis of maximum injection or withdrawal. Also as Approved Withdrawal is not linked with allocation in Central Sector Generating Stations but it is proposed to be based on actual peak withdrawal, the proviso related to overload capacity is proposed to be deleted. These need amendments in definition of Approved injection and withdrawal.

This will require consequent amendments in following clauses of the Regulation:

- (a) Sub clause (c) of clause (1) of Regulation 2.
 - (b) Proviso under Sub clause (c) of clause (1) of Regulation 2.
 - (c) Sub clause (f) of clause (1) of Regulation 2.
 - (d) Proviso under Sub clause (f) of clause (1) of Regulation 2.
- 3.9 Certain solutions are proposed to take care of computation of transmission charges for Renewable and Hydro stations under the proposed methodology of computation during Peak scenario. Comments of stakeholders are invited on the suggested solutions.

4 Weightage factor for Uniform Charges.

4.1 Provision for Revision in the Sharing Regulations, 2010:

- 4.1.1 In accordance with Regulation 7(1) (q) of Sharing Regulations, the Uniform Charges were provided as transitory mechanism and this is to be reviewed after 2 years of implementation of Sharing Regulations. Regulation 7 (1) (q) is reproduced hereunder for ready reference:

"7(1)(q) As a part of the transition to the new Point of Connection based transmission pricing methodology, the recovery of the Yearly Transmission Charge of the ISTS network shall be based on both the Hybrid Method and the Uniform Charge Sharing Mechanism (postage stamp method) by

giving appropriate weightage to both. The Commission shall decide the weightage based on the impact of such transition on various Designated ISTS Customers. For the first two years, the zonal charges obtained using the Point of Connection method shall be adjusted such that 50% of the Yearly Transmission Charge of the ISTS Licensees is recovered through Hybrid methodology and the balance 50% of the Yearly Transmission Charge of the ISTS Licensees is recovered based on Uniform Charge Sharing Mechanism. After a period of two years from the implementation of these arrangements, the Commission may review the weightages accorded to the Hybrid methodology and the Uniform Charge Sharing Mechanism."

- 4.1.2 As the Sharing Regulations were implemented w.e.f. 1.7.2011, the Weightage factor is due for review.

4.2 POSOCO's Submission:

- 4.2.1 POSOCO has, vide their letter no. POSOCO/Trans. Pricing **dated 16th August, 2013 (Appendix-I)**, has suggested that in pursuance of Regulation 7(1) (q) of Sharing Regulations, which provides that the Commission may review the weightages accorded to the hybrid methodology and the Uniform Charge Sharing Mechanism. POSOCO have submitted results with 25% uniform charges, which indicate increase in spread between lowest and highest PoC rate before grouping them in slab rate.
- 4.2.2 As the basic principle of the Sharing Regulations was to make transmission charges allocation sensitive to the distance, direction and actual usage, it is indicated by various stakeholders that billing of transmission charges based on LTA and a fixed charge component of uniform charges in effect results in allocation of transmission charges based on allocation similar to previous transmission charge sharing system and this does not truly represent the actual usage.

Also it did not capture fully the effect of location (point of injection/withdrawl) fully as spatial change in load generation in a particular area is not captured fully. For example, with commissioning of a load centre generating station in a particular State, the State's drawl from inter-state transmission system undergoes a change which should be reflected in transmission charges to be shared.

4.3 Stakeholders Concerns

4.3.1 As the final billing of transmission charges is presently being done on the basis of LTA, certain stakeholders have raised objection that sharing of charges is based on contract and not on usage. This is not entirely correct because the detailed computation of PoC charges is done based on actual usage of the transmission system. The transmission charge for actual network usage is computed based on load generation figures forecasted and agreed by DICs in Validation Committee. Only at the stage of computing PoC rates, the charges are divided by LTA to compute the rate. This PoC rate is again multiplied at later stage by LTA to recover PoC charges. The recovery of uniform charges is for LTA but as both the computations are done together, stakeholders take a view that transmission charge allocation is based on LTA. The present process of computation is explained through an example of DIC "X" and DIC "Y" in the succeeding para:

Application period Q2 of 2013-14:

Table – 1

DIC	Load (MW)	Withdrawal (Load) PoC Charges (Rs.) per month	withdrawal (Load) POC (As per computation) (Rs./MW /Month)	LTA (Demand) (MW)	Withdrawal PoC Rate (Rs/MW/Month)	Withdrawal (Load) POC Charges (As per LTA) (Rs./Month)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
X	4989	45,79,42,697	91,783	2,668	1,71,665	45,79,42,697
Y	1414	18,96,39,554	1,34,104	1,741	1,08,928	18,96,39,554

4.3.2 These DICs are drawing 4989 MW and 1414 MW respectively as per Load flow and their transmission system usage as computed by WebNet Use software is given in Col 3. However in present method of computation, as their withdrawal LTA are different from their actual drawls, to compute withdrawal PoC Rates in these DIC's Zone, withdrawal PoC Charges (Rs./Month) are divided by its LTA(MW) to compute Withdrawal PoC Rate(Rs./MW/Month), i.e. [(3)/(2)]. When these withdrawal PoC rates are again multiplied by LTA (Col. 7) it will give same withdrawal PoC charges as computed by software. Thus, till this point, multiplication by LTA has no impact.

4.3.3 Scaling of PoC charge is done to take care of the fact that all state embedded entities which may also be using ISTS are not paying transmission charges for use of ISTS. Hence, these charges are increased by % of under recovery i.e about 10% in this particular application period which makes the withdrawal charges of Rs. (45,79,42,697) as Rs. **50,45,52,461.**

Table-2

DIC	Withdrawal (Load) POC Charges (As per LTA) (Rs./Month)	Scaled POC Charges Rs. per Month
	45,79,42,697	50,45,52,461
	18,96,39,554	20,89,41215

4.3.4 Implication of uniform charges could be seen as under:

For computation of uniform charge, total Monthly Transmission Charges (MTC) to be recovered is divided by injection and withdrawal LTA. As MTC for Q2 was Rs 975.49 Crs and injection LTA and withdrawal LTA were 1,03,178 MW, the Uniform rate was Rs. 94544/MW/Month (Rs.975.49 Crs/1,03,178 MW)

i) The computation for DIC 'X' and 'Y' is shown below:

- ii) As per present Regulations, charges are to be computed with 50% as of Uniform charges and 50% as PoC charges. As uniform charges are computed using uniform rate multiplied by LTA, concept contract also came along with actual usage (PoC based component).

Table - 3

Zone	Uniform Charges (UC) (Rs./Month)=Uniform Rate*LTA	Scaled PoC Charges Rs/Month	50% UC and 50% PoC Rs./Month	LTA (MW)	Withdrawal Charges (Rs/MW/Month)
(1)	(2)	(3)	(4) [0.5X(2+3)]	(5)	(6) [(4)/(6)]
X	25,22,12,087	50,45,52,461	37,83,82,274	2,668	1,41,822
Y	16,44,90,088	20,89,41,215	18,66,46,847	1,741	1,07,280

Thus, the withdrawal rates in respect of DIC 'X' get reduced from Rs. 1,71,665 to 1,41,822 due to uniform charges; the effect for DIC 'Y' is not much (reduction from Rs. 1,08,928 to Rs. 1,07,280/MW/Month).

- iii) The DIC X which is drawing much more than its LTA (4989 MW against LTA of 2668 MW) is benefiting to a large extent as its PoC rates and PoC charges get reduced, while the entity which is drawing less than its LTA (1414 MW against 1741 MW of LTA) gets marginal reduction.
- iv) Further, under the prevailing methodology for sharing of charges no DIC is paying the charges as computed by software.
- v) These rates undergo further change as Slabs are applied. As three slab rates approved for NEW grid for Q-2 of 2013-14 were Rs.

79,544/MW/Month, Rs. 94,544/MW/Month and Rs 1,09,544 /MW/Month., the highest slab rate of Rs. 1,09,544/MW/Month becomes applicable on both DIC X and DIC Y.

If drawal, LTA and Usage and payment are compared, following picture emerges:

Table-4						
DIC	Drawal (MW)	LTA (MW)	Slab Rate (Rs/MW/ Month)	Actual Usage (Rs/ Month)	Payment (Rs/Month)	Variation
X	4989	2668	1,09,544	45,79,42,697	29,22,63,392	(-) 36.2%
Y	1414	1741	1,09,544	18,96,39,554	19,07,16,104	0.56%

vi) This methodology of Charging based on 'LTA, Uniform charges and Slab rates' sometimes distorts the locational signal of PoC rate as explained below:

Zone	Generation (MW)	Load (MW)	Generation Charges (Rs.)	Load Charges (MW)	LTA (Generation) (MW)	LTA (Demand) (MW)	Generation PoC (Rs/MW/Month)	Load PoC (Rs/MW/Month)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Z	194	29	16,64,638	2,160,51,386	280	4784	5945	45166

After application of LTA based computation and uniform charges and slabs these charges become:

Table-6									
Zone	Generation PoC (Rs/MW/ Month)	Load PoC (Rs/MW /Month)	Generation PoC (Rs/MW/ Month)	Load PoC (Rs/MW/ Month)	Generation PoC (Rs/MW/ Month)	Load PoC (Rs/MW /Month)	Generation PoC (Rs/MW/ Month)	Load PoC (Rs/MW/Month)	
	Software Computed			LTA Based		After 50% Uniform charge and 50% PoC application		After Slabs	
Z	8,594	74,229	5,945	45,166	50,547	72,154	79,544	79,544	

This location (Delhi) had low injection charges due to proximity of load, however after applying uniform charges and slab rates, both injection charges and withdrawal charges became same i.e. Rs. 79,544 per MW/Month. Thus, the locational signal of low injection charges as compared to withdrawal charges is lost. In this particular case if load centre generating plant is installed in this location, even after transporting coal from long distance, it continues to pay high transmission charges.

4.4 Proposal to dispense with uniform charges.

4.4.1 To make the process more sensitive to distance, direction and quantum of usage, it is proposed now that the PoC charges and rates be computed on the load and generation considered in the load flow study and which shall be based on figures for the Peak Scenario for the ensuing quarter of DIC's injection and drawal computed from the load-generation figures for the Peak Scenario and as agreed in Validation Committee

4.4.2 Commission after analysing the impact of uniform charges noted that the prevailing methodology was provided as a first step for two years for ease of implementation and to mitigate tariff shock, if any, during the initial period. The analysis indicates that this methodology is advantages for the DICs which were drawing more than their entitlement (declared/computed long approved injection/ drawal based on LTA).

4.4.3 As the basic philosophy of Sharing Regulations is that sharing of transmission charges needs to be based on actual usage, it would be just and appropriate to now dispense with uniform charge, which is based on LTA or deemed LTA based on allocation of power from Central Sector Generating Stations.

4.4.4 The Commission, vide its order in Petition No. 233/2009 and 154/2011, also gave regulatory approval for transmission system wherein the new transmission systems are being set up from Generation or fuel hubs in Odisha and Chhattisgarh or Hydro resources in Sikkim and North East to load centres in WR and NR. We are aware about the fact that originating or host states of these generating hubs do not want to bear the transmission charges of these new assets, if they have no contract for off-take of power from the generating stations but the power flow take place through their system. Similarly for an asset created in NR, 50% of its cost gets socialized through the Uniform Charge component for entire country, any DIC which is not using this asset in any way is to pay for this asset through Uniform Charges. Thus, there is a need to completely remove the Uniform Charges.

4.4.5 In this respect we refer to FERC decision as guiding principle:

Regional cost allocation principle 1: The cost of transmission facilities must be allocated to those within the transmission planning region that benefit from those facilities in a manner that is at least roughly commensurate with estimated benefits.

Interregional cost allocation principle 1: The costs of a new interregional transmission facility must be allocated to each transmission planning region in which that transmission facility is located in a manner that is at least roughly commensurate with the estimated benefits of that transmission facility in each of the transmission planning regions.

4.4.6 Although in an integrated meshed grid exact quantification of benefit of new transmission system is difficult, the usage as reflected through load flow study can be considered to be a suitable measure of benefit. Therefore, sharing of transmission charges completely based on Usage would fulfil the objective of fair allocation of transmission charges to a large extent.

4.4.7 Accordingly, Regulation 7 (1) (q) of Sharing Regulations, 2010 is proposed to be modified to dispense with uniform charges from the first quarter of 2014-15. This will require consequent amendments in following clauses of the Regulation:

- a. Definition of Uniform Charges: Sub-clause (v) of clause (1) of Regulation 2 of the Principal Regulations is proposed to be deleted.
- b. Definition of Uniform Charge Sharing Mechanism: Sub-clause (W) of clause (1) of Regulation 2 of the Principal Regulations is proposed to be deleted
- c. Definition of Uniform Losses: Sub-clause (x) of clause (1) of Regulation 2 of the Principal Regulations is proposed to be deleted.
- d. Sub-clause (q) of clause (1) of Regulation 7 of the Principal Regulations is proposed to be deleted.
- e. Sub-clause (s) of clause (1) of Regulation 7 of the Principal Regulations is proposed to be modified.
- f. Proviso Step 4 under sub para 2 of para 2.7 of Annexure to the Principal Regulation regarding allocation of HVDC system is proposed to be deleted.

4.4.8 The issue of slippage in Commissioning of Generator needs consideration in the proposed methodology:

There is a possibility of slippage in Commissioning of Generator from its scheduled Commissioning. It is, therefore, proposed that Generator shall be liable to pay transmissions charges from the date of commencement of its

LTA. There shall not be any shifting of date of LTA but for commissioning associated identified transmission system getting delayed.

In case the transmission system is provided and the generator has not been synchronized with the Grid, transmission charges corresponding to Synchronous Grid's Average charge for connectivity (corresponding to installed capacity – to avoid confusion that without COD there is no installed capacity) shall be payable by these generators from the date of LTA till commencement of injection of infirm power. Charges like payment of injection and withdrawal charges shall be payable during injection of infirm power.

Similar charges i.e. connectivity charges (corresponding to installed capacity) are proposed to be applied for a generator who wants to exit from its Long-term Access availing facility of Relinquishment of access rights under Connectivity Regulations.

Comments are invited from the stakeholder in regard to the same

4.4.9 At present, the Approved withdrawal or approved injection are finalised in Validation Committee meeting and it is mentioned in the Regulation 7(5) of the Sharing Regulation that in the case of Approved withdrawal or injection not materialising either partly or fully for any reason whatsoever, the Designated ISTS Customer (DIC) shall be obliged to pay the transmission charges allocated. It will be further clarified that in case of Generators for whom the Connectivity has become effective and their commissioning schedule had changed due to any reason, transmission charges corresponding to their connectivity shall be charged, irrespective of their actual generation.

4.4.10 Further question is how to recover transmission charges for hydro stations which are seasonal and transmission system has been created for them as there may be no generation in some of the hydro power stations during winter season. Under such situation it would be difficult to recover the transmission charges, based on actual generation.

4.4.11 As the transmission system is implemented for carrying electricity to users (drawee entities), the transmission system usage of these assets may get reflected in drawal charges.

4.4.12 In case the generators have identified beneficiaries, it poses no problem in recovery of transmission charges. For merchant hydro generators, this creates a problem where the Generator would like to opt for Short Term Open Access. As these generators are liable to pay both injection and withdrawal

charges, it is proposed that in such cases generator may be made liable for payment of transmission charges during lean season based on its design energy for injection charges and for withdrawal charges, installed capacity shall be considered. During peak season, sharing of transmission charges shall be based on peak injection as in case of other generators. The proposal is based on the fact that installed capacity is considered for transmission planning. Only to take care of their low injection during lean season, this dispensation is being considered so as not to burden them with higher transmission charges.

4.4.13 As the computation of transmission charges is proposed to be done on Peak scenario, there may be problem that during the system Peak, injection of wind /solar will be minimum and their usage will not be reflected. However, transmission system is being created to evacuate its full capacity atleast for some duration during high wind season. Therefore, it is proposed that for computing the rates, their injection corresponding to maximum energy during the quarter shall be considered but for sharing of transmission charges, these rates shall be applied on installed capacity for injection as well as withdrawal.

4.4.14 Necessary changes in the BPTA or existing contract shall be made by all concerned.

4.4.15 This change will address the concern of various stakeholders and it will also balance the need for transmission planning process and more appropriate allocation of transmission cost among various users.

This will require consequential amendments in following clauses of the Regulation:

- a. Clause (5) of Regulation 8 of the Principal Regulations shall be modified.
- b. For Hydro and Wind generation, suggestions are invited from stakeholders on methodology to be followed for computation of transmission charges so that sufficient transmission system for their evacuation is created and sharing of the transmission charge is fair, considering environmental benefit and mandate of Electricity Policy on promotion of Hydro Power and Renewable Power. Specific Provision shall be formulated on the basis of suggestions.

5 Slab Rates :

5.1 Regulation 7(1) (I) of Sharing Regulations provides that the slab rates for Injection and Demand POC charges shall be rationalised in 2014-15 based on a review by the Commission as could be seen from the excerpts given below:

"7(1) (I) Provided further that there shall be three slab rates for injection and demand PoC charges for the year upto 2013-14, after which the same shall be rationalized in the year 2014-15 based on a review by the Commission."

- 5.2 At present three slab rates for injection and demand PoC charges are given. These slab rates are computed by adding and subtracting Rs. 15,000 per MW per month from Uniform Rates. For example, in the period Q2 of 2013-14, the uniform rates computed for NEW grid were Rs 94,544 per MW per month. Three slabs Tier-1, Tier-2 and Tier 3, were Rs.79,544 per MW per month, Rs 94,544 per MW per month and Rs. 1,09,544 per MW per month respectively. It was a three slab rate system with a step size of Rs 15,000 applicable for Long term and Medium term transmission charges. For Short term transmission charges, this corresponds to 11.13 paise/kWh, 13.13 paise/kWh and 15.13 paise/kWh with step size of 2 paise/kwh.
- 5.3 Three slab systems with lowest slab at Rs. 79,544 per MW per month increases the burden for DICs which were at the lower extreme of PoC rates.
- 5.4 POSOCO has, vide their letter no. POSOCO/Trans. Pricing dated 16th August, 2013, (Appendix-I) sought directions of Hon'ble Commission regarding slab rates in view of Regulation 7(1) (I) of Sharing Regulations providing that the slab rates for Injection and Demand POC charges shall be rationalised in 2014-15 based on a review by the Commission.
- 5.5 They have also submitted that during their interaction with various DICs during the last two years over the methodology for three slabs, there were observations that the actual POC rate for Drawal of many of the DICs is less than the minimum POC slab rate and the same for many of the DICs is also more than the maximum POC slab rate. They have ,therefore, considered five slabs instead of three prevailing at present for the same basic network, load flow, assumptions and transmission losses for Q2 of 2013-14 with following alternatives :
 - (1) Five slabs with step size of Rs. 7500/MW/month and 1 paisa per unit, keeping lowest and highest slab rates same.
 - (2) Five slabs with step size of Rs. 15000/MW/month and 2 paise per unit, widening the range of slab rates.
- 5.6 The results presented by POSOCO show that the DICs get more evenly distributed among the five slabs.

5.7 It is observed that proposal-A with **five slabs** and step size of Rs 15000/MW/Month is rational as compared to three slab system as it widens the range of slab rates and would be more reflective of usage. Retaining lowest and highest slab same as previous application period would not address the problem. The slab system need to be based on minimum regret so that DICs at lower extremes should not be unduly burdened and the DICs at higher extremes should not be benefitted at the cost of other DICs.

Proposal B: Commission's staff analysed the impact of uniform charges and slab system and the details are shown in graphical form at [Annexure -3](#). It was observed that both these systems of adjustments are proving to be advantageous for the States who are drawing more than their LTA.. Further it is also not conforming to the principle of sharing of transmission charges based on usage of the network.

The combined impact of Uniform Charges and Slab rates on payment liability of DIC 'X' and 'Y' is given below:

As after application of slab rate, both DICs are paying same withdrawal charges of Rs 1,09,544 per MW per month

Table – 7

DIC	Rate after Uniform charges (Rs./MW/Month)	Rate after Uniform charges and slab (Rs./MW/Month)	LTA (MW)	Actual liability as per usage (Rs.)	Payment (Rs.)	Impact i.e. payment vs liability
X	1,41,822	1,09,544 (High slab)	2668	45,79,42,697	29,22,63,392	Paying 36.2% less
Y	1,07,280	1,09,544 (High Slab)	1741	18,96,39,554	19,07,16,104	Paying 0.5% More

5.8 It is noted that the slab system also distorts the locational signal. With the availability of computation power, it is not difficult to manage separate PoC charges for 90 DICs. As differential in PoC charges capture the difference in usage of transmission system, with wide variation in usage of different DICs in different quarters of the year, it will not be appropriate to club the transmission service charge rates into five slabs. It is therefore proposed to dispense with the Slab Rate and make the DICs pay the Transmission Charges as per actual usage.

This will require consequent amendments in following clauses of the Regulation:

- a. Proviso under Sub-clause (l) of clause (1) of Regulation 7 of the Principal Regulations is proposed to be deleted.
- b. Proviso under Sub-clause (s) of clause (1) of Regulation 7 of the Principal Regulations is proposed to be deleted
- c. Sub para 12 at the end of Para 2.7 of the Annexure is proposed to be deleted.

6 STOA adjustment for LTA charges

6.1 At present, the STOA adjustment is provided to the Generators only for target region in accordance with proviso under clause 9 of Regulation 11 (First amendment dated 24.11.2011) which reads as under:

“ Provided that the Injection POC charges and Demand POC charges for Short-term Open Access to the target region for which Long-term Access has been granted to the generator, shall be adjusted against the Injection POC charges and Demand POC charges for the Long-term Access to the target region without identified beneficiaries and not against Long-term Access to any other target region without identified beneficiaries:

Provided further that the injection POC charge for Short-term open access given to a generator to any region shall be offset against the injection POC charge for LTA granted to the generator to the target region.

Provided also that a generator who has been granted Long-term Access to a target region without identified beneficiaries, shall be required to pay PoC injection charge plus the lowest of the PoC demand charge among all the DICs in the target region for the remaining quantum after offsetting the quantum of Medium-term Open Access and Short-term open access.

6.2 The issue was discussed in 17th CAC meeting held on 20.3.2013. Association of Power Producers (APP) has, vide their letter dated 5th August, 2013, invited their reference to the discussions in the CAC meeting held on 20th March, 2013 requesting for amendment in the Sharing Regulations to allow LTA holders to allow flexibility of sale and supply of power to other customers in the same or other region provided there is no transmission constraint and adjustment under the LTA already granted.

6.3 It is proposed that for proper transmission planning with the objective that Generators should not face transmission constraint in evacuation of power, they must be encouraged to seek LTA or Generating Network Access (GNA) commensurate with their Installed Capacity. However, till the time they do not

have identified beneficiaries, they should not be burdened with transmission charges. At present, the generators are allowed STOA adjustment corresponding to injection charges for transaction in any region and withdrawal charges are adjusted only if the transaction is in target region. It is proposed that the adjustment in respect of STOA transaction in any region be allowed.

As, it is now proposed to compute billing on the basis of peak injection or withdrawal, projection based on preceding year's data of corresponding period, there shall be no need for any adjustment on the basis of LTA.

6.4 However, due to computation being based on peak injection/ withdrawal as proposed now, projection based on data for the corresponding period of last year, which was based on all type of transactions, it is proposed that all DICs shall be given benefit of adjustment of STOA charges in next month bill. Accordingly Regulation 11(9) shall be modified and it is provided as under:

"Provided that the DICs which were granted LTA without identified beneficiaries and are paying both injection and withdrawal charges for long term access, the liability of the DICs for injection POC charges and Demand POC charges for Short-term Open Access to any region shall be adjusted against the injection POC charges and Demand POC charges for long term access based on Peak Injection:

Provided further that a generator who has been granted Long-term Access to a target region without identified beneficiaries, shall be required to pay POC injection charges plus the Average of the POC demand charges among all the DICs for the remaining quantum of long term access after offsetting the quantum of Medium-term Open Access and Short-term Open Access:

Provided also that the injection POC charge/ withdrawal POC charge for Short-term open access granted to a DIC shall be offset against the corresponding injection POC and withdrawal POC charges to be paid by the DIC for Approved injection/ Approved withdrawal based on Peak Injection/ Withdrawal:

Provided also that this adjustment shall not be allowed for collective transactions and bilateral transactions carried out by the trading licensees who have a portfolio of generators in a State for which LTA was obtained to a target region."

However, it is to made clear that payment of transmission charges corresponding to Approved injection/ Withdrawal based on peak injection/ drawl does not crate any sort of financial/physical transmission right and DIC cannot claim short term open access for that capacity. Open Access shall continue to be governed by CERC short Term Open Access Regulations, 2008 as amended from time to time.

6.5 This is explained hereunder for injection DIC and Withdrawal DIC:

- 6.5.1 *If the injection DIC's approved injection is taken as 890 MW and it has Long Term PPA of 600 MW only. For 600 MW power, injection transmission charge shall be paid by beneficiary. The generator shall be responsible for payment of injection and withdrawal charges of 290 MW under Bill No.1. The 600 MW power will be scheduled under Long Term. If he avails 290 MW of short term on say 15 days of month, then in accordance with Short Term Open Access Regulations, he will pay short term open access charges and while preparing bill No. 1 in first week of next month, the amount already paid under short term open access shall be adjusted from the injection plus withdrawal charges already paid corresponding to 290 MW. However for access beyond 890 MW, the short term access charge shall not be adjusted. In this case both injection charges and withdrawal charges shall be adjusted irrespective of region in which power transaction is done.*
- 6.5.2 For drawee DICs, if its Approved withdrawal is say 1500 MW and its deemed LTA is also 1500 MW then 1500 MW power can be scheduled to it under long term. However, say for a particular day, its schedule from Central Generating Stations is 1200 MW and it purchases 300 MW power under short term, then it need to pay short term open access charges . The adjustment against these charges shall be given to the drawee DIC in the bill No.1 in the first week of the next month. This will result in lessening the burden of transmission charges on the same DIC State.
- 6.5.3 Consequent to this following amendments are proposed in the Principal Regulations:
 - (a) Clause (5) of Regulation 11 of the Principal Regulations propose to be modified.

(b) Clause (9) of Regulation 11 of the Principal Regulations propose to be modified.

7 Computation based on full basic network in place of truncated network.

7.1 Regulation 7 (k) of Sharing Regulations provides as under:

*"Consequent to the development of the base load flows on the Basic Network, the network shall be truncated/reduced suitably by the Implementing Agency to certain level(s) of voltages, as explained in **Annexure-I** to these Regulations. The Hybrid method shall be applied by the implementing Agency on the truncated/reduced system to determine the transmission charges based on the Hybrid Method and loss allocation factors attributable to each node in the truncated/reduced power system. In future, if implementing Agency arrives at a better method of network reduction, then the same may be adopted after approval of Commission.*

The determination of transmission charges based on Hybrid methodology is required to be limited to the network owned, operated and maintained by the ISTS Licensees and those transmission licensees / SEBs whose assets have been certified by RPC as being used or inter-state transmission. "Neat" truncation of the grid at the interface of the state and the central sector boundaries is not possible because all the assets of PGCIL are not interconnected by their own assets. Preparation of a cogent network, therefore, requires consideration of state owned lines as well. One of the methods of network reduction, namely, network truncation is explained below. However, IA may adopt alternative network reduction tools which that find smaller but equivalent representations of large networks, after due approval of the Commission.

Most of the assets of POWERGRID are operated at 400 kV. For the year 2008-09, POWERGRID had Rupees 221 Crores (excluding NER) to be recovered from 220 kV assets of the total YTC of Rupees 4959.43 Crores. Most of the 220 kV assets in India are owned by the State Power Utilities. It was, therefore, deemed appropriate by the CEA that the network be truncated at 400 kV level because it would involve minimal use of the state owned lines. The voltage level for the purposes of network truncation may be revised in the subsequent years by the IA after approval by the Commission."

7.2 Due to truncation of network at 400 kV level, there are instances wherein effect of marginal participation of state's own generation (example Tenughat in Jharkhand) is not being captured. The power flow change due to change in 1 MW drawal by Bihar which may be supplied by Tenughat is now reflected as drawal from a Central Generating Station located far away and utilizing

larger network of ISTS. Similar examples may be noted in other regions as well. This becomes more important in case of 220 kV transmission assets existing between two states and owned by STUs which are being used for transfer of ISGS power. Software for PoC computation is capable of running full network, so procedure for computation can be modified.

This will require consequent amendments in following clauses of the Regulations:

- (a) Sub Clause (k) of Clause (1) of Regulation 7 of the Principal Regulations is proposed to be modified.
- (b) Sub Clause (n) of Clause (1) of Regulation 7 of the Principal Regulations is proposed to be modified.
- (c) Para (vii) of Sub Clause (t) of Clause (1) of Regulation 7 of the Principal Regulations is proposed to be modified.
- (d) Para 2.3 of Annexure-1 of the Principal Regulation is proposed to be deleted.

8. Creation of load generation balance on peak scenario in stead of average scenario.

8.1 While Principal Regulations provided for five (5) seasons and two (2) Peak and off Peak scenarios in each season, four quarterly scenarios based on average power load generation balance are being used in accordance with amendments. As transmission system is developed to cater to peak demand, average scenario is resulting in skewed results in some cases like Delhi, where peak to off-peak drawal ratio is too high. Also, utilization of transmission system by hydro generation, which is being used as peak power, is not being captured correctly as average generation is being considered.

8.2 In this regard an interesting observation for the period 2012-13 indicating comparison of LTA and peak drawal is enclosed along with graph at **Annex-1**. Similar comparison in respect of generating station is given at **Annex-2**.

8.3 The states are able to meet their peak requirement through drawal from ISTS. The sharing of transmission charges should therefore reflect this.

8.4 If transmission charges are to be billed on actual peak injection and withdrawal, there shall be no incentive to under declare the transmission requirement by State Utilities (Designated Inter-State Customers) and it will help the transmission planning process.

8.5 As the transmission planning is being done to take care of load generation balance during peak scenario, it is proposed to allocate transmission charges also on the basis of peak injection and withdrawal.

This will require consequential amendments in following clauses of the Regulation:

- a. Provisos under Sub-clause (c) of clause (1) of Regulation 2 of the Principal Regulations are proposed to be deleted.
- b. Provisos under Sub-clause (f) of clause (1) of Regulation 2 of the Principal Regulations are proposed to be deleted.
- c. Sub-clause (d) of clause (1) of Regulation 7 of the Principal Regulations is proposed to be modified.
- d. Sub-clause (e) of clause (1) of Regulation 7 of the Principal Regulations is proposed to be modified
- e. Provisos under Para (iv) of Sub-clause (t) of clause (1) of Regulation 7 of the Principal Regulations is proposed to be deleted.
- f. Comments below the table in para 2.8.1 of the Annexure are proposed to be deleted.

9. Issue of High PoC Charges in Exporting Region:

9.1 This issue is for consultation and stakeholders comments. As this involves a major conceptual change, it requires a detailed analysis.

9.2 As power from exporting region (for example ER) flows to drawal centres in NR and WR through longer transmission network, the injection charges become high. As States in the host region also have share in these generating stations and charges are allocated based on their allocation in these generating stations, these states are not convinced about the distance sensitivity of PoC.

9.3 For addressing this problem, there is a need to look into the allocation of injection charges. At present the injection charges are computed using Uniform Charges and PoC charges. If uniform charges are not applied, then it will correctly reflect the usage of transmission system by the generators. In addition, following change is proposed to correct it further:

(a) As the basic philosophy of PoC mechanism is based on usage, the present methodology that after computing injection charges based on usage, it is allocated to its beneficiary based on allocation in the generating station, dilute the usage based charging to a certain extent and again the concept of contract comes into picture in place of actual usage.

9.4 This creates a situation that even a beneficiary which is not actually receiving its allocated power from Generating Station(s), it had to bear injection charges

corresponding to its allocation. The participation factor as computed by software to compute PoC charges clearly indicates this difference and an example is given below:

Example: Consider a case of generating station located in Eastern Region, with allocation to different DICs as given below:

S.No.	State/DIC	% Allocation
1	Bihar	42.89%
2.	Jharkhand	8.13%
3.	DVC	0.31%
4.	Orissa	31.8% plus temp allocation
5.	West Bengal	9.1% plus temp allocation
6.	Sikkim	2.4
7.	Tamil Nadu	0.85%
8.	NER	3.22%

In comparison to this participation factors for this generating station indicate that the power injected by this generator is used by following DICs:

S No.	DIC	% as per participation factor
1	Orissa	82.97
2	DVC	12.1
3	West Bengal	4.93

As Bihar is actually not receiving power from this generating station as indicated by participation factors, charging transmission charges from Bihar for the injection from this generator because Bihar has allocation from this generating station is not in consonance with the principle that transmission charges should be based on actual usage of the network. Similarly as Odisha is getting most of its power from this nearby generator, it should pay commensurate transmission charges for the injection from this generator.

From the above example it emerges that actual power consumption as indicated by participation has no correlation with allocation factors.

Therefore, it is proposed that injection charges be allocated to Withdrawal DICs in accordance with participation factors, which reflect the usage.

10. Issue of State lines being used for carrying inter-State power:

10.1 Regulations provide that STUs shall be reimbursed only if more than 50% power of inter-state nature is flowing on the intra-state network. A better solution can be proposed, if States are compensated for proportional usage i.e. if their line is used to carry 23% power, the proportionate 23% tariff may be granted. This payment from central sector pool will result in reduction in their claim, for corresponding amount from State ARR as State's lines carrying inter-state power are considered ISTS in accordance with the definition given in Section 2 (36) (ii) of the Electricity Act, 2003 which is extracted as under:-

"(ii) the conveyance of electricity across the territory of an intervening State as well as conveyance within the State which is incidental to such inter-state transmission of Electricity;"

10.2 A concern regarding non-availability of the line-wise YTC of intra-state transmission lines can be alleviated by computing the YTC of such lines based on the per km charges (for various voltage levels) used for Inter-State lines and then normalizing the total charges for each state such that the total recovery is not in excess of the revenue requirement allowed by the respective State Electricity Regulatory Commission. Under this methodology, the charges computed for utilization of state lines through this method are say Rs 20 Crs and based on ratio of different voltage level and circuit km in state ARR, this is coming only Rs 15 Crs then only Rs 15 Crs shall be payable to the concerned state.

10.3 In cases where Capital cost data is not available for grant of tariff, only proportionate O&M charges may be given,
This will require consequential amendments in following clauses of the Regulation:

- a. Sub-clause (y) of clause (1) of Regulation 2 of the Principal Regulations is proposed to be modified.
- b. Sub para (g) of the Para 2.12 of the Annexure is proposed to be modified.

11. No ISTS charges for Solar based Generation:

11.1 Exemption from payment of ISTS charges and losses was granted to Solar generating stations for 3 years. Decision need to be taken on this issue for solar projects to be commissioned after 1.7.2014. MNRE has also requested

for an early decision on this matter to facilitate next phase of competitive bidding for solar generating stations.

- 11.2 The rationale stated in the Statement of Reasons for Sharing Regulations is extracted below:

"The regulations facilitate solar based generation by allowing zero transmission access charge for use of ISTS and allocating no transmission loss to solar based generation. Solar power generators shall be benefited in event of use of the ISTS. Since such generation would normally be connected at 33 kV, the power generated by such generators would most likely be absorbed locally. This would cause no / minimal use of 400 kV ISTS network and might also lead to reduction of losses in the 400 kV network by obviating the need for power from distant generators. Further, this is also aligned with the objectives of the section 3(1) and section 4 of Solar mission which is "to establish India as a global leader in solar energy, by creating the policy conditions for its diffusion across the country as quickly as possible." The cost of energy from solar based generation is in the range of Rs. 14-18/kWh and application of ISTS charges and losses would further reduce the acceptability of power generated from solar sources. This regulation encourages solar based generation."

- 11.3 In view of MNRE's request and the encouragement being provided by Government of India for development of Solar Power in the country, this exemption is proposed to be continued for the solar power plants to be commissioned upto June, 2017.

This will require consequential amendments in following clauses of the Regulation:

- a. Sub-clause (u) of clause (1) of Regulation 7 of the Principal Regulations is proposed to be modified.
- b. Sub-clause (v) of clause (1) of Regulation 7 of the Principal Regulations is proposed to be modified

12. State embedded Generator using ISTS but not paying ISTS Charges:

- 12.1 While carrying out second amendment of Sharing Regulations, it was pointed out by stakeholders that certain embedded generators (having LTA with state transmission system) are using ISTS and this results in burdening the other users having LTA to ISTS. It was stated in Statement of Reasons (SOR) and Explanatory Memorandum that this issue still needs to be addressed.

- 12.2 As payment is made for usage of State transmission network for inter-state power, then state embedded entities must also pay either directly or through state for injecting into ISTS. This will result in better implementation of the concept of "payment as per usage" and avoid adjustments which are being done presently under scaling up of charges for under recovered ISTS charges.
- 12.3 In this regard the grievance of TANGEDCO in Petition no. 67/2010 and submission of LANCO in Petition no 21/MP/2011. are given below:

"9.TANTRANSCO (erstwhile Tamil Nadu Electricity Board) in its reply dated 29.11.2010 has submitted as under:

- i. *The additional generating capacities of 1,894 MW have been added in North East Andhra Pradesh in addition to the existing NTPC Simadhri, Stage-I (2 x 500 MW) without commissioning of adequate transmission systems for their evacuation. The generators are utilizing the Regional transmission corridor viz. Gazuwaka–Kalpakkam–Vemagiri–Vijayawada–Nellore–Alamathi–SRIPERUMBADUR to evacuate their power resulting in continuous over loading of 400 kV Vijayawada–Nellore transmission line, causing congestion.*
- ii. *CTU has approved the injection of power from these generating projects without satisfying the Long-term Open Access (LTOA) conditions at North-Eastern Andhra Pradesh. Hence, in the congestion management order, in the event of congestion, a small penalty should be imposed on CTU also so that they do not approve LTOA without developing adequate infrastructure.*
- iii. *CTU should take urgent steps such as identifying critical transmission projects which will relieve transmission congestion and implement the same on fast track basis.*
- iv. *The constituents should not be deprived of availing power from elsewhere to meet their demand which is the main criteria of the Act.*
- v. *Generation projects in States systems should be allowed to be connected only after ensuring adequate transmission lines to evacuate their power independent of CTU lines. In future, none of the Inter Regional corridor should be made LILO to evacuate generation or for feeding Load.*

We have considered the submissions made by the NLDC, CTU, UPPCL,

APTRANSCO, TATRANSCO and PTC. We direct the CTU to carry out the execution and commissioning of various elements in a time bound manner as indicated in the Annexure-I to the order and also expedite the same wherever possible. We also direct the CTU to take immediate steps to remove the constraints highlighted by TANTRANSCO for evacuation of power in the Vemagiri area caused due to LIFO arrangements of the existing transmission lines. In case, there is a change in the scenario in which the connectivity/ long-term access were given by the CTU, adequate corrective measures need to be taken by the CTU immediately."

In the review Petition No. 21/MP/2011, the issue of injection by embedded generator into the ISTS was raised by the Lanco Kondapali which is as given below:

"The Respondent has proceeded on a misconceived application of the concept of "Approved Injection", whereby it has ignored the injection into the ISTS by entities other than the petitioner. The Respondent has failed to take into consideration the fact that various state based generators in Andhra Pradesh have Long Term Open Access ("LTOA") with APTRANSCO under which arrangement they are admittedly injecting power into the ISTS and thereby utilizing the ISTS. This is evident from the load flow results published by the Implementing Agency, which has even computed the nodal PoC charges attributable to such generator nodes. Inter-state transmission system as defined under the Electricity Act, 2003 (Act) includes the network of APTRANSCO to the extent it is involved in inter-state transmission of electricity. APTRANSCO therefore constitutes a part of the ISTS to the extent it is utilized for inter-state transmission of electricity. The LTOA of state based generators with APTRANASCO utilized for inter-state transmission for electricity from such generators therefore should form part of LTOA for the purpose of PoC charges. this is more so since development of ISTS network itself is done in coordination with the requirement of the STU. Further, the power generated by such generators connected in the network of APTRANSCO flows into the network owned and operated by CTU. However, the Implementing Agency has failed to consider the LTOA of APTRANSCO. It is pertinent that while calculating nodal PoC charges, the Respondent has already taken into consideration, such utilisation of the ISTS by the entities connected to the network APTRANSCO and computed the charges attributable to the extent of such utilisation, details whereof have been annexed to the Petition as Annexure P/3;"

13. This issue was again discussed in the Statement of Reasons (dated 2.5.2012) for Second Amendment to Sharing Regulations

13.1 The Commission had proposed in the draft Regulations that, in addition to the generators connected to the 400kV inter-State Transmission System (ISTS) with long-term PPA, generators with merchant capacity and PPA to other States, should also have a PoC injection rate based on the sum of merchant capacity and long-term PPA to other States. POSOCO and LANCO have pointed out that the ISGS connected to the 400 kV inter-State Transmission System (ISTS), should be considered for calculation of the PoC injection rate, whether they have LTA to other States or to the host State and the sum of such capacity be considered, if the generator has part long-term PPA and part merchant capacity, limited to its generating capacity. Trilegal has mentioned that the LTA of the State based generating stations to intra-State transmission system, which is incidental to inter-State transmission of electricity, and therefore forms parts of the ISTS, should also be considered.

*13.2 The Commission tend to agree with the argument given by POSOCO and LANCO. However, the issue of use of the intra-State transmission system, which is incidental to inter-State transmission, pointed out by Trilegal, **is a generic issue, for which a solution still needs to be found**. The Commission have already mentioned in the Explanatory Memorandum to the Second Amendment that:*

"Subsequently, after applying our minds, we feel that the issue is very involved and almost all intra-State lines may carry inter-State power to a small or large extent. Similarly, ISTS lines may also carry intra-State power. Therefore, at the first instance, we are inclined to consider that all transmission lines, which are naturally inter-State, i.e. linking one State to another, would, without doubt, carry power from one state to another and would therefore have to be inter-State lines."

- 13.3 It proves that intra-state generators are not only using the inter-state system, but also because of their usage , the beneficiaries of the system for whom the ISTS was planned are unable to get desired benefits as injection due to this intrastate generators creates system conditions which prevent power flow from Eastern Region to Southern Region. This is called problem due to free riders and this needs to be addressed, just not for commercial reasons but also due to technical issues this unintended and incidental flows creates depriving legitimate users from using the transmission system in an optimal manner and in a way the transmission system was originally planned, approved and being paid by beneficiaries.
- 13.4 The extent of utilization of ISTS by embedded generating stations in Andhra Pradesh as a sample case (for Q2 of 2013-14) is given below:

Bus Name	Generator PoC (Rs./MW)	Generation (MW)	Generation Nodal Charges (Rs)
BPLPALLI	11534	414	47,75,071
GAUTAMI	57645	120	69,17,358
GMR	57690	150	86,53,457
JEGRUADU	57685	100	57,68,520
KONSEEMA	57666	100	57,66,567
KTPS	37679	414	15,5,99,047
SIMHADRI	41384	845	3,49,69,372
SRLMLB	45773	100	45,77,320
TALPALLI	72468	21	15,21,819
VTS-IV	20490	413	84,62,397
		2677	9,70,10,929

As these generators do not have LTA with CTU, they are not paying ISTS charges.

- 13.5 Also many steps taken during implementation stage of PoC Regulations during June, 2010-June, 2011 stem from the fact that many generating stations are using ISTS but not paying for this because they have not taken LTA from CTU. Their non payment results in loading other DICs, so effectively they were free riders. If they had sought connectivity and LTA from State system, either STU should create sufficient transmission system for them or make arrangement that these state generators/state embedded generators also pay for ISTS. Due to their injection, cheaper power from ER and WR could not be brought into SR and they, through location, are abusing market power by selling in congested area.
- 13.6 Once sharing of transmission charges is based on actual usage and usage can be shown transparently through scientific methods , there is no ground for these generators to deny paying transmission charges either themselves or through STU as provided in Sharing Regulations:

This will require consequential amendments in following clauses of the Regulations:

- a. Sub-clause (l) of clause (1) of Regulation 2 of the Principal Regulations is proposed to be modified.
- b. Clause (b) of Regulation 3 of the Principal Regulations is proposed to be modified.
- c. The proviso under Para (iv) under sub-clause (t) of clause (1) of Regulation 7 is proposed to be deleted.

14. Amendment in Regulation 17:

The Sharing Regulations provides for complete transparency of data and information used for computation of PoC transmission charges. One more important information regarding Yearly Transmission Charges (YTC) is proposed to be shared to explain how the YTC of all transmission licensees is considered for computation of transmission charges. The objective of the Commission is to share as much information as possible with the stakeholders. In every order for the PoC rates issued by the Commission, it is mentioned that Implementation agency must publish all the details that will enable a clear understanding of the calculations used for arriving at these rates. IIT WebNet software is available in CERC office and in Engineering Division staff is available to help stakeholders in understanding the entire computation process.

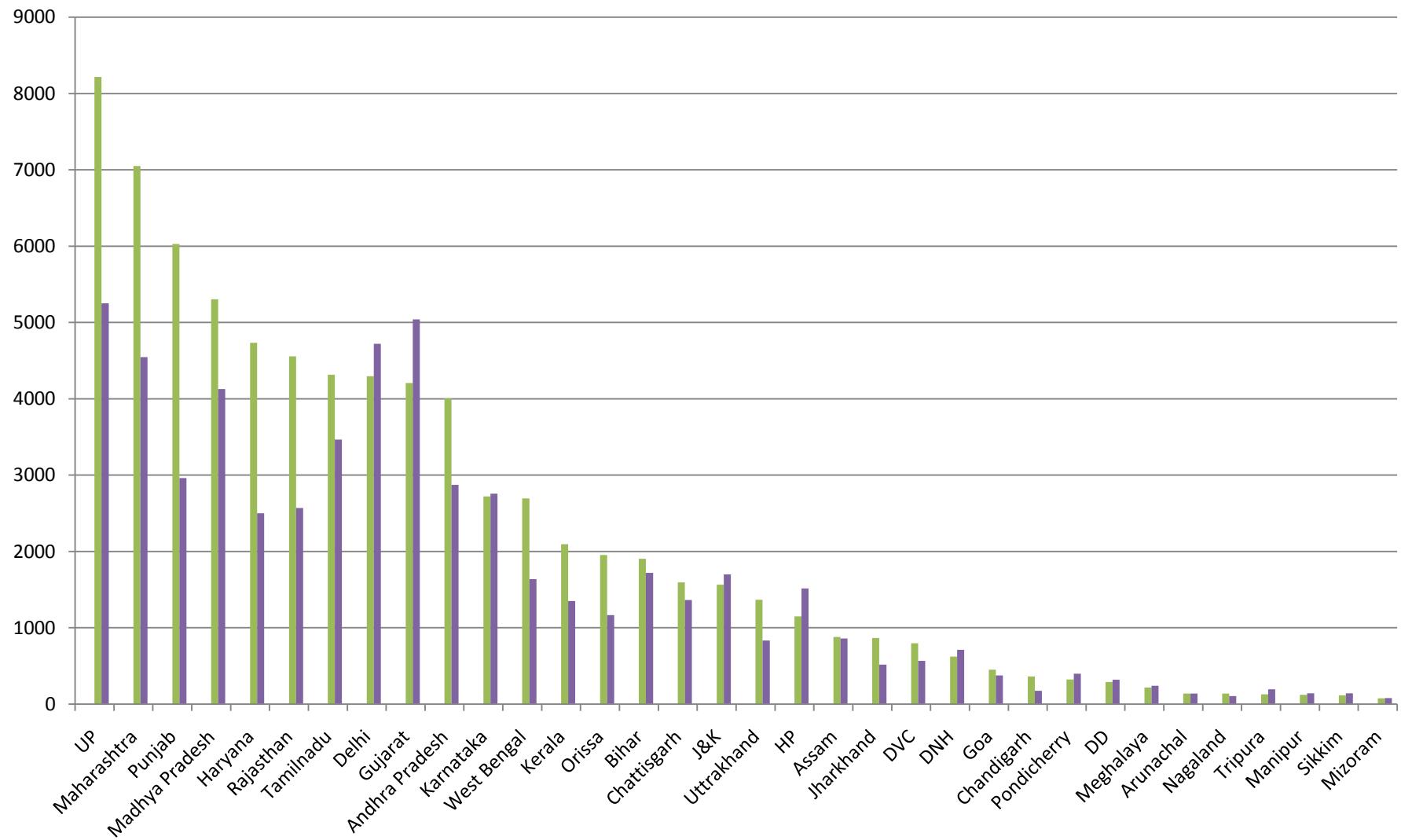
Stakeholder may give their comments/suggestions if more data and information is required for understanding the computation.

This will require consequential amendment in following clauses of the Regulation:

- a. Sub-clause (e) is proposed to be added under clause (1) of Regulation 17 of the Principal Regulations.

Maximum Drawal vis a vis LTA (2012-13)- Exhibit 1

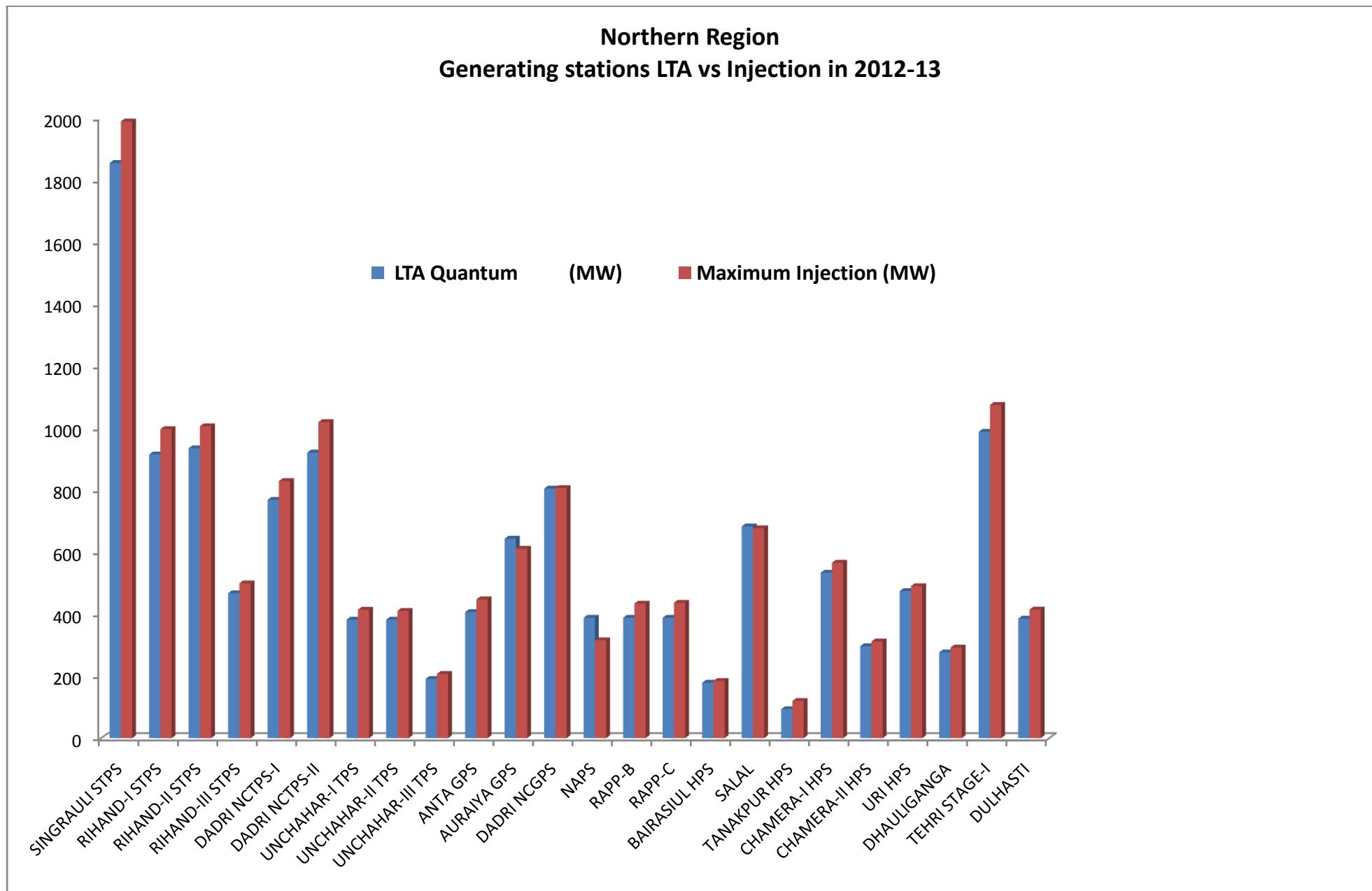
■ Max Drawl (MW) ■ LTA Quantum (MW)



Annexure-1

Drawal by States / UTs vis-a-vis LTA Quantum FY 2012-13

S.No.	State	Max Drawl (MW)	LTA Quantum (MW)	Drawl as % of LTA
1	UP	8217	5251	156.48%
2	Maharashtra	7049	4545	155.09%
3	Punjab	6027	2963	203.41%
4	Madhya Pradesh	5304	4127	128.52%
5	Haryana	4735	2501	189.32%
6	Rajasthan	4555	2571	177.17%
7	Tamilnadu	4315	3466	124.50%
8	Delhi	4295	4722	90.96%
9	Gujarat	4208	5041	83.48%
10	Andhra Pradesh	4005	2871	139.50%
11	Karnataka	2722	2756	98.77%
12	West Bengal	2694	1636	164.67%
13	Kerala	2095	1352	154.96%
14	Orissa	1955	1165	167.81%
15	Bihar	1905	1719	110.82%
16	Chattisgarh	1593	1365	116.70%
17	J&K	1564	1701	91.95%
18	Uttarakhand	1368	834	164.03%
19	HP	1149	1515	75.84%
20	Assam	878	860	102.09%
21	Jharkhand	866	517	167.50%
22	DVC	797	566	140.81%
23	DNH	623	711	87.62%
24	Goa	450	374	120.32%
25	Chandigarh	363	176	206.25%
26	Pondicherry	322	397	81.11%
27	DD	289	319	90.60%
28	Meghalaya	218	240	90.83%
29	Arunachal	140	137	102.19%
30	Nagaland	139	107	129.91%
31	Tripura	128	195	65.64%
32	Manipur	122	141	86.52%
33	Sikkim	114	143	79.72%
34	Mizoram	76	80	95.00%



Maximum Injection Vs LTA Quantum in 2012-13		
Name of the Generating Station	LTA Quantum (MW)	Maximum Injection (MW)
SINGRAULI STPS	1855	1989
RIHAND-I STPS	915	997
RIHAND-II STPS	935	1006
RIHAND-III STPS	468	499
DADRI NCTPS-I	769	829
DADRI NCTPS-II	921	1019
UNCHAHAR-I TPS	382	414
UNCHAHAR-II TPS	382	410
UNCHAHAR-III TPS	191	207
ANTA GPS	407	448
AURAIYA GPS	643	611
DADRI NCGPS	805	807
NAPS	388	316
RAPP-B	388	434
RAPP-C	388	437
BAIRASIUL HPS	179	185
SALAL	683	677
TANAKPUR HPS	93	120
CHAMERA-I HPS	534	566
CHAMERA-II HPS	296	312
URI HPS	474	490
DHAULIGANGA	277	292
TEHRI STAGE-I	988	1075
DULHASTI	385	414
SEWA-II HEP	119	129
NATHPA JHAKRI	1482	1621
Indira Gandhi STPP Jhajjar	1410	960
Koteshwar	396	404
AD Hydro	192	229
Baspa	300	-
Rihand HPS + Matatila	55	-
Malana-II	86	105
Himachal Sorang	100	-
Anpara-C	100	-
Karcham Wangtoo	880	1275
PPCL-Bawana	280	-
CLP Jhajjar	124	-
Chamera III	228	251
PTC Budhil	62	74
Baghlihar	100	-
Parbati III	257	-
Farakka	1489	1561
Kahalgaon - I	764	776
Kahalgaon - II	1403	1431
Talcher	935	984
Rangeet	59	66
Teesta	504	520
DVC Pool	520	-
MPL	983	1018
DSTPS	250	820
Mejia	350	-
Mejia-II	363	1020
Koderma	50	-
Farakka III	468	466

Maximum Injection Vs LTA Quantum in 2012-13		
Sterlite Energy Ltd. (MTOA)	100	-
KSTPS	1949	
KSTPS 7	468	2589
VSTPS-STG-I	1147	1250
VSTPS-STG-II	935	1091
VSTPS-STG-III	935	1045
KAWAS	637	629
GANDHAR	638	644
SIPAT-II	935	
SIPAT I	1851	2905
KAPS	405	419
TAPS 3&4	983	940
NSPCL Bhilai	243	499
JINDAL	700	950
PTC(LANCO Amarkantak)	300	530
APL MUNDRA	2037	-
Torrent Power	300	-
RGPPL	-	1274
Mundra UMPP	3800	3816
VSTPS-STG-IV	468	378
Mauda	468	271
ACB Limited	243	292
BALCO (MTOA)	102	125
SASAN UMPP	620	231
KS K Mahanadi (MTOA)	400	-
Lanco Kondapalli	250	-
NTPC, RAMAGUNDAM STG I &II	1949	2049
NTPC, RAMAGUNDAM STG III	468	497
NTPC ,TALCHER STG II	1870	1976
NTPC, SIMHADRI-II	940	1000
NLC TPS II- STG I	517	565
NLC TPS II- STG II	706	756
NLC TPS I- EXPANSION	380	395
NPC,MAPS	394	327
NPC ,KGS UNITS-1&2	394	329
NPC ,KGS UNITS-3&4	394	306
Vallur TPC	935	-
AGBPP, NEEPCO	282	281
AGTPP, NEEPCO	83	86
Doyang, NEEPCO	74	75
Kopili-1, NEEPCO	198	193
Kopili-2, NEEPCO	25	31
Khandong, NEEPCO	50	49
Ranganadi, NEEPCO	401	412
Loktak, NHPC	104	109
Palatana	359	300
Total		

पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड

(पावरग्रिड की पूर्ण स्वामित्व प्राप्त सहायक कंपनी)

POWER SYSTEM OPERATION CORPORATION LIMITED

(A wholly owned subsidiary of POWERGRID)



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POSOCO/Trans. Pricing/

Date: 16th August 2013

To,
The Chief Engg. (CERC)
Central Electricity Regulatory Commission
3rd and 4th Floor, Chanderlok Building
36, Janpath
New Delhi - 110001

Subject: Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses), Regulations, 2010

Sir,

1. The Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 (hereinafter "Sharing Regulations") were notified on 15th June 2010. These Regulations came into effect from 1.7.2011.

2. In view of wide variation of PoC charges obtained and to smoothen the transition process, the Hon'ble Commission vide order dated 04.04.2011 directed the Implementing Agency to work out the PoC Charges slab wise and obtain the approval of the Commission for the three slab rates.

3. Subsequently the Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010 was amended and the following proviso was added after the first proviso to sub-clause (I) of Clause (1) of Regulation 7 of as quoted below:

"Provided further that there shall be three slab rates for injection and demand PoC charges for the year upto 2013-14, after which the same shall be rationalized in the year 2014-15 based on a review by the Commission."

4. During interaction with various DICs over last two years, there were observations over the adopted methodology of three slabs. Actual POC rate (per MW per month) for drawal of many of the DICs is less than the minimum POC Slab rate. Similarly, actual POC rate (per MW per month) of many of the DICs is more than the maximum POC Slab rate. Therefore, one possibility to address the issue could be to increase the range of PoC rates and number of slabs from 3 to 5.

5. In view of the above and in line with the provision of the Regulations quoted above, a study was carried out by the Implementing Agency, considering five slabs instead of three for the same Basic Network, Load Flow, assumptions used for computation of the final PoC rates and final transmission losses for July'13 to Sep'13 (Q2) period. The following alternatives were considered:

Alternative-1: Total Five Slabs with Step size of 7500 Rs./MW/Month and 1 paisa per unit: With step size of 7500 Rs./MW/Month, the lowest and highest slabs remain same as those of three slabs.

Alternative-2: Total Five Slabs with Step size of 15000 Rs./MW/Month and 2 paisa per unit: Here, the range has been widened keeping the step size of 2 paisa per unit.

The slabs considered for various alternatives are listed below:

Slab rates for NEW Grid for LTA / MTOA and STOA

	Existing Three Slabs		Five Slabs			
			Step Size 7500		Step Size 15000	
	Rs/MW/Month	Paise/Unit	Rs/MW/Month	Paise/Unit	Rs/MW/Month	Paise/Unit
Tier1	79544	11.13	79544	11.13	64544	9.13
Tier2	94544	13.13	87044	12.13	79544	11.13
Tier3	109544	15.13	94544	13.13	94544	13.13
Tier4			102044	14.13	109544	15.13
Tier5			109544	15.13	124544	17.13

Slab rates for SR Grid for LTA / MTOA and STOA

	Existing Three Slabs		Five Slabs			
			Step Size 7500		Step Size 15000	
	Rs/MW/Month	Paise/Unit	Rs/MW/Month	Paise/Unit	Rs/MW/Month	Paise/Unit
Tier1	67773	9.5	67773	9.5	52773	7.5
Tier2	82773	11.5	75273	10.5	67773	9.5
Tier3	97773	13.5	82773	11.5	82773	11.5
Tier4			90273	12.5	97773	13.5
Tier5			97773	13.5	112773	15.5

On the basis of five slabs, the PoC Rates for each Injection and Withdrawal zones have been assigned different tiers of slabs and a comparison is shown below :

With 50 % Uniform Charge Component	NEW Grid			SR Grid		
	Existing Three Slabs	Five Slabs		Existing Three Slabs	Five Slabs	
		7500 step size	15000 step size		7500 step size	15000 step size
No. of Utilities in Tier 1	55	54	41	13	13	6
No. of Utilities in Tier 2	17	6	14	4	0	7
No. of Utilities in Tier 3	27	8	17	3	3	4
No. of Utilities in Tier 4		7	11		2	1
No. of Utilities in Tier 5		24	16		2	2

It may be seen from the above, that with step size of Rs. 15,000/MW/month, the range of slabs varied between 64,544 Rs./MW/month and 1,24,544 R./MW/month for LTA & MTOA and between 9.13 paise/unit and 17.13 paise/unit for STOA in NEW grid. Similarly, in case of SR grid, the range of slabs varied between 52,773 Rs./MW/month and 1,12,773 R./MW/month for LTA & MTOA and between 7.5 paise/unit and 15.5 paise/unit for STOA. Thus, the DICs are evenly distributed among various tiers.

6. In addition to the above study on slab rates, possibility of adopting a different uniform charge of 25% component of net PoC charge was also explored. Sub Clause (q) of Clause (1) of regulation 7 of the Principal Regulations provides as under:

".....For the first two years, the zonal charges obtained using the Point of Connection method shall be adjusted such that 50% of the Yearly Transmission Charge of the ISTS Licensees is recovered through Hybrid methodology and the balance 50% of the Yearly Transmission Charge of the ISTS Licensees is recovered based on Uniform Charge Sharing Mechanism. After a period of two years from the implementation of these arrangements, the Commission may review the weightages accorded to the Hybrid methodology and the Uniform Charge Sharing Mechanism."

Accordingly, Uniform Charge Component has been considered to be 25% and PoC slab rates were evolved using above said slabs. The detailed results are given below:

Spread of net PoC rate before (before assigning slab rates)

	NEW Grid rate (Rs./MW/month)		SR Grid(Rs./MW/month)	
	50% uniform charge	25% uniform charge	50% uniform charge	25% uniform charge
Lowest PoC rate	47,272	23,636	41,386	20,693
Highest PoC rate	78,62,747	1,17,46,849	2,49,077	3,32,229

Table showing number of entities coming in different slabs based on the above methodologies (i.e. 50% uniform charge and 25% uniform charge) is given below:

With 25 % Uniform Charge Component	NEW Grid			SR Grid		
	Three Slabs	Five Slabs		Three Slabs	Five Slabs	
		7500 step size	15000 step size		7500 step size	15000 step size
No. of Utilities in Tier 1	58	55	50	13	13	11
No. of Utilities in Tier 2	10	5	8	3	1	2
No. of Utilities in Tier 3	31	8	10	4	2	3
No. of Utilities in Tier 4		4	10		1	2
No. of Utilities in Tier 5		27	21		3	2

The Hon'ble Commission may peruse the above alternatives and may like to give further directions in this regard.

Thanking You

Yours faithfully

(K.V.S Baba)
General Manager, NLDC