

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 239/MP/2015

Coram:

**Shri Gireesh B. Pradhan, Chairperson
Shri A.K. Singhal, Member
Shri A.S. Bakshi, Member**

**Date of Hearing: 18.2.2016
Date of Order 30.6.2016**

In the matter of

Review Petition under Regulation 21 "Power to Remove Difficulties" of the Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 in the matter of exorbitant hike of Point of Connection (POC) Charges of Assam following implementation of the recent amendment vide the Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) (Third Amendment) Regulations, 2015.

And

In the matter of

1. Assam Power Distribution Company Limited
2. Assam Electricity Grid Corporation Limited
Bijulee Bhawan, Paltanbazar,
Guwahati- 781001

....Petitioners

Vs

1. Power Grid Corporation of India limited
"Saudamini", Plot No. 2,
Sector-29, Gurgaon (Haryana) 122001.
2. National Load Despatch Centre
Power System Operation Corporation Limited
Katwaria Sarai, New Delhi- 110016.
3. North Eastern Regional Power Committee,
NERPC complex, Dong Parmaw, Lapalang,
Shillong-6.

4. North Eastern Regional Load Despatch Centre,
Lower Nongrah, Dongtiah, Lapalang,
Shillong-6.
5. Meghalaya Power Distribution Company Limited
Lumjingshai, Short Round Road, Shillong- 793001.
6. Power and Electricity Department,
Government of Mizoram, Khatla, Aizwal
7. Electricity Department, Government of Manipur,
Keishampat, Imphal
8. Department of Power, Government of Nagaland,
Kohima, Nagaland.
9. Department of Power, Government of Tripura,
Agartala, Tripura- 799001.
10. Government of Arunachal Pradesh,
Itanagar, Arunachal Pradesh

...Respondents

Following were present:

Shri M.K. Adhikary, APDCL
Shri J.K. Baishya, APDCL
Ms. Swapna Seshadri, Advocate, PGCIL
Shri Rajendra Kumar Gujar, PGCIL
Ms. Abilia Zaidi, POSOCO

ORDER

The petitioners, Assam Power Distribution Company Limited (APDCL) and Assam Electricity Grid Corporation Limited (APGCL) have filed the present petition seeking examination and review of the factors of abnormal hike in PoC bills of Assam pursuant to implementation of the Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) (Third Amendment) Regulations, 2015 and take remedial measures for removal of such abnormal increase to enable the petitioners to fulfil its mandate to supply power at affordable cost in terms of Section 61 of the Electricity Act, 2003.

2. The petitioner has submitted that the following facts have led to filing of this petition:

(a) The Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 have been amended by the Commission from time to time depending on the system requirements.

(b) APDCL has been meeting its load demand by import of power from (i) Assam Power Generation Corporation Limited (APGCL) through STU networks; (ii) Central Sector Generating Stations (CSGS) such as NEEPCO, NHPC, OTPC and NTPC through the network of Power Grid Corporation of India Limited (PGCIL) and AEGCL; and (iii) other sources like IPPs, Traders, Power Exchanges, etc. through MTOA/ STOA mode.

(c) The petitioner is paying transmission charges for availing the services of PGCIL from different sources.

(d) Initially for 2011-12, the Commission allowed a single scenario for determination of POC charges on the basis of the generation and demand data published by CEA for both injection and demand POC charges and losses with the following three slabs:

| Items | POC Slab Rates (₹/MW/Month) |
|--------------|-----------------------------|
| Maximum Slab | 100000 |
| Middle Slab | 85000 |
| Lowest Slab | 70000 |

As per the above, the following POC rates were applicable for the State of Assam:

| Item | POC Rate (Rs/MW/Month) | Short Term Slab Rate (Paise/Unit) |
|------------------|------------------------|-----------------------------------|
| Assam Withdrawal | 85000 | 12 |
| Assam Injection | 85000 | 12 |

(e) For the period 2012-13, the Commission allowed continuation of single scenario, with the following three different slab rates, with provision of Yearly Transmission Charge (YTC) on six monthly basis i.e. from April to September and thereafter from October to March:

| Item | POC Rate for April-September 2012 | POC Rate for October- March, 2013 (Rs/MW/Month) |
|---------------|-----------------------------------|---|
| Maximum- Slab | 110000 | 109968 |
| Middle Slab | 95000 | 94968 |
| Lowest Slab | 80000 | 79968 |

As per the above rate, the following rates were applicable to the State of Assam:

| Item | POC Rate (Rs/MW/Month) | Short Term Slab Rate (Paise/Unit) | % increase in POC Rate over the previous one |
|--|------------------------|-----------------------------------|--|
| POC Rate for April, 2012 – September, 2012 | | | |
| Assam Withdrawal | 95000 | 13 | 11.76% |
| Assam Injection | 80000 | 11 | -5.88 % |
| POC Rate for October, 2012 – March, 2013 | | | |
| Assam Withdrawal | 109968 | 15.19 | 15.76 % |
| Assam Injection | 79968 | 11.19 | 0.04 % |

(f) For the year 2013-14, the Commission allowed the following revision of YTC on quarterly basis i.e. on 1st April, 1st July- 1st October and 1st December:

| Item | POC Rate for April - Jun'2013 (₹/MW/Month) | POC Rate for July- Sep'2013 (₹/MW/Month) | POC Rate for October- Dec'2013 (₹/MW/Month) | POC Rate for Jan-Mar'2014 (₹/MW/Month) |
|---------------|--|--|---|--|
| Maximum- Slab | 109350 | 109544 | 109391 | 118280 |
| Middle Slab | 94350 | 94544 | 94391 | 103280 |
| Lowest Slab | 79350 | 79544 | 79391 | 88280 |

As per the above rate, the following POC charges were applicable for the State of Assam:

| Item | POC Rates (Rs/MW/Month) | Short Term Slab Rate (Paise/Unit) | % Increase in POC rate over the previous one |
|--|-------------------------|-----------------------------------|--|
| POC Rates for April, 2013 – June, 2013 | | | |
| Assam withdrawl | 109350 | 15.10 | 0.56 % |
| | 109350 | 15.10 | 36.74 % |
| POC Rates for July, 2013 – September, 2013 | | | |
| Assam withdrawl | 94544 | 13.13 | -13.54% |
| Assam injection | 109544 | 15.13 | 0.18% |
| POC Rates for October, 2013-December, 2013 | | | |
| Assam withdrawl | 109391 | 15.11 | 15.70 % |
| Assam injection | 109391 | 15.11 | 0.11 % |
| POC Rates for January, 2014- March, 2014 | | | |
| Assam withdrawl | 118280 | 16.34 | 8.12% |
| Assam Injection | 88280 | 12.34 | -0.19% |

(g) For the year 2014-15, the Commission allowed the following revision of YTC on quarterly basis i.e. on 1st April, 1st July- 1st October and 1st December:

| Item | POC Rate for April –Jun, 2014 (₹/MW/Month) | POC Rate for July- September, 2014 | POC Rate for October- December,2014 (₹/MW/Month) | POC Rate for January- March, 2015 (₹/MW/Month) |
|--------------|--|------------------------------------|--|--|
| Maximum Slab | 114425 | 117165 | 118067 | 118280 |
| Middle Slab | 99425 | 102165 | 103067 | 103280 |
| Lowest Slab | 88425 | 87165 | 88067 | 88280 |

As per the above rate, the following charges were applicable to the State of Assam:

| Item | POC Rates (₹/MW/Month) | Short Term Slab Rate (Paise/Unit) | % Increase in POC Rate over the previous one |
|---|---------------------------|---|--|
| POC Rates for April'2014 - June'2014 | | | |
| Assam withdrawl | 114425 | 15.81 | -3.26 % |
| Assam injection | 99425 | 13.81 | 12.62 % |
| POC Rates for July, 2014-September, 2014 | | | |
| Assam withdrawl | 117165 | 16.19 | 2.39 % |
| Assam injection | 87165 | 12.19 | -12.33% |
| POC Rates for October, 2014- December, 2014 | | | |
| Assam withdrawl | 118067 | 16.31 | 0.77 % |
| Assam injection | 88067 | 12.31 | 1.03 % |
| POC Rates for January, 2015- March, 2015 | | | |
| Assam withdrawl | 122173 | 16.89 | 3.48 % |
| Assam injection | 92173 | 12.89 | 4.66 % |

(h) The above slab rates of POC have a differential of Rs 15000.00 only. The periodical deviations in the POC charges so far for APDCL were within the affordable limits. The rates of POC charges and losses were extended for the period 1.1.2015 to 31.3.2015 for April, 2015.

3. The Commission approved the PoC charges and losses for May, 2015 and June, 2015 through Third Amendment of Sharing Regulations in which the following nine slab rates for PoC charges and losses and STOA as against the earlier three slabs for May, 2015 to June, 2015 where added:

| PoC Slab | PoC Charges (Rs/MW/Month) | STOA Charges (Paisa/unit) | % Losses |
|---------------|------------------------------|------------------------------|----------|
| Slab - I(Max) | 305438 | 23.23 | V+1.00% |
| Slab - II | 272649 | 20.56 | V+0.75% |
| Slab - III | 239859 | 17.90 | V+0.50% |

| | | | |
|-----------------------|--------|-------|---------|
| Slab - IV | 207069 | 15.24 | V+0.25% |
| Slab - V | 174279 | 12.58 | V |
| Slab - VI | 141489 | 9.91 | V-0.25% |
| Slab - VII | 108699 | 7.25 | V-0.50% |
| Slab - VIII | 75909 | 4.59 | V-0.75% |
| Slab - IX (Lowest) | 43119 | 1.93 | V-1.00% |

4. After the Third Amendment to the Sharing Regulations, the petitioner received the PoC (RTA) bill of July, 2015 with 63% more than the earlier bill amounts which was the highest PoC slab rate of ₹ 305438.00 and approved withdrawal based on peak demand adopted in PoC methodology. The comparison of monthly bill amounts of Assam for June, 2015 and July, 2015 are as under:

(in ₹)

| Bill Item | June, 2015 | July, 2015 | Increase |
|-----------------------------|---------------------|---------------------|--|
| PoC Charges, NER | 181490868.00 | 316051248.00 | 107686927.00 (51.68%) |
| PoC Charges, ER | 26873453.00 | | |
| Reliability Support | - | 23456694.00 | 2345694 |
| Total | 208364321.00 | 339507942.00 | 131143621.00 (62.94%) |
| Approved withdrawal Quantum | 921.43 MW | 1034.75 MW | 113.32 MW (12.30%) |

5. There is an increase of 62.94% (63%) in the monthly bill of Assam although the increase in approved withdrawal is only 12.30%. In the 15th TCC and Committee Meetings of NERPC held on 20.8.2015 and 21.8.2015 respectively, Chairperson CEA advised the aggrieved party to approach the Commission.

6. The petitioners have sought review of the PoC charges on the following grounds:

(a) As per the Electricity Act, 2003, the supply of electricity should be at a

reasonable rate to all consumers. However, due to amendment in the Sharing Regulations from time to time, transmission charge of the State of Assam has been increased by around 63% despite having no significant increase of network assets.

(b) Introduction of nine slabs unilaterally by the Commission having wide range of highest slab of ₹ 305438.00 and lowest slab of ₹ 43119.00 against the recommendation of POSOCO is not at all pragmatic.

(c) Removal of Uniform Charge is another factor of such abnormal hike in POC bill which was against the suggestion of the POSOCO.

(d) The present system of PoC calculation is in contradiction with the terms and conditions for determination of tariff enumerated under Section 61 of the Electricity Act, 2003.

(e) Due to monthly hike in PoC bill @ around ₹ 10.00 crore /month on average basis, the yearly hike in PoC bill would come around ₹ 120 crore. The quantum of energy handled by the State of Assam is around 6000 MUs which results increase of retail tariff by around ₹ 0.20 Paisa/ Kwh.

(f) Due to geographical locations of various States of NER, uneven distribution of potential sources of power, NER was dealt through a separate method of Uniform Common Pool Transmission Tariff (UCPTT) unlike the transmission charge sharing mechanism adopted in other regions of the country.

Though the UCPTT rate was the highest rate among the country but the same rate was applicable on regional perspective. However, under the new PoC system, the differences of POC charges applicable for all NER States are highly significant.

(g) Due to geographical location, major part of all the EHV Artery transmission lines, 400 KV lines and HVDC lines run through the State of Assam, thereby using huge fertile lands. Other States of NER are at various extreme ends forming its boarder. Therefore, major portion of all the logistic supports like land, right of way, etc. are provided by Assam on the hope that development of power scenario would improve the socio-economic conditions of the region as a whole and also make availability of power at reasonable tariff in the region. However, in actual case, it is going other way.

7. The petitioner has submitted that changes in the latest amendment are not yet clear considering various practical aspects. The petitioner has requested to consider peak withdrawal in place average withdrawal considered earlier, ideal scenarios of availability of all ISGS and transmission lines and generators during the period of consideration (quarterly) and availability of transmission networks in the interest of future need, etc.

8. Against the above background, the petitioner has made the following prayers:

(a) To examine and review the factors which are responsible for such abnormal hike in POC bill(s) of Assam as a result of implementation of the Sharing Regulations, 2015 resulting tariff shock as mentioned in Para 8 of the petition in spite of having no increase in Asset value or Approved Withdrawal at the same pace as that of bill amount.

(b) To take remedial measure(s) to remove the shock of abnormal increase of POC bill amount and thus enable Assam to fulfill its mandate to supply power at affordable cost as stated in Section 61 the Electricity Act, 2003.

(c) To allow Assam to continue payment at the earlier rate as an interim measure till this petition is disposed of and necessary fund arrangement is ensured.

9. The matter was heard on 19.11.2015. The staff of the Commission was directed to convene a meeting with the petitioner to discuss the issues and submit a report in this regard. In compliance with the said direction, the staff of the Commission convened a meeting on 11.12.2015 with the representatives of APDCL, NERPC and NLDC to discuss the reasons for increase in transmission charges payable by APDCL and AEGCL as a result of implementation of Third Amendment to the Sharing Regulations. The staff of the Commission have reported that the following aspects of PoC charges were explained to the representatives of the APDCL and NERPC:

(a) Removal of Uniform Charges: In the Sharing Regulations, 2010, which came into effect from 1.7.2011, while specifying 50% component of uniform charges, it was provided that the Sharing Regulations shall be reviewed after two years. Accordingly, the principle of uniform charges was reviewed and 50% uniform charges have been removed from the sharing mechanism through Third Amendment with effect from 1.5.2015. However, Reliability Support Charges have been introduced as 10% of YTC to be levied on all entities due to the reliability which entities get by virtue of being connected to the grid.

(b) Increase in slabs from 3 to 9 slabs: In order to bring the transmission charges close to actual usage, number of slabs has been increased from 3 to 9. In response to the query of APDCL regarding rationale for 9 slabs, Chief (Engg),

of the Commission clarified that in 3 slab rate system, 86 nos. of DICs were falling in the lowest slab. In 5 slabs rate system, 67 nos of DICs fell in lowest slab and in 7 slabs rate system, 39 nos of DICs fell in the lowest slab. This implied that through actual usage based rates of 86/67/39, DICs would be less in the lowest slab rate. However, they would have to pay for the lowest slab rate as per 3/5/7 slab system. In order to bring transmission charges closer to usage, 9 slabs have been introduced wherein only 19 DICs are falling in the lowest slab. The rationale has been explained in detail in Statement of Reasons to Sharing Regulations.

(c) Geo-graphical Location or Non availability of Central Sector Generating Stations in Assam: Basic philosophy of POC is usage based and if Assam is drawing more power from ISTS, using more ISTS, it has to pay for the same.

(d) The basic concept of PoC calculations which is based on Average participation and marginal participation were also explained in detail. It was also clarified that the mechanism for sharing of transmission charges of ISTS has been devised in pursuance of provisions of National Electricity Policy and Tariff Policy.

10. According to the report of the staff of the Commission, the representative of APDCL stated that Assam is drawing power from outside as there are very few generation resources available within the State of Assam for its own use. Though Assam is drawing power to the tune of 1200 MW from ISTS, it is paying large amount of PoC charges. Further, the representative of APDCL mentioned that the transmission

lines are built for evacuation of power for a certain quantum. However, if initially transmission lines are under loaded i.e % utilisation of the transmission lines is less, still entire charges are to be borne by the users. Assam has to pay full charges for certain lines as it is drawing almost the entire power flowing through the line on account of its connectivity.

11. Though the representatives of APDCL and AEGCL highlighted cash flow problem for making payment of transmission charges till SERC approves their tariff as increase in transmission charges of ISTS for Assam, which has become effective from 1.5.2015, could not be factored by Assam in its ARR.

12. The staff of the Commission explained to the representatives of APDCL and NERPC that the transmission charges payable by Assam are based on the usage of ISTS by the State.

13. PGCIL vide affidavit dated 16.2.2016 has submitted that the petition is not maintainable since there is no difficulty. Hon'ble Appellate Tribunal for Electricity vide its judgment dated 25.3.2011 in Appeal No. 130 of 2009 [Ratnagiri gas and Power Pvt Ltd v. CERC and Ors 2011 ELR (APTEL) 532] has discussed the scope of the power to remove difficulties and held that power to remove difficulties is to be exercised when there is difficulty in effecting the Regulations and not when difficulty is caused due to application of the regulations. It was further submitted that the validity of POC Regulations was challenged before the High Court of Delhi, where in the High Court vide its order dated 30.7.2013 held that petitioners to abide by the conditions in the impugned regulations with regard to payment to PGCIL.

14. Power Grid Corporation of India Limited (PGCIL) was directed to file its response on the 'record note of discussion of 16th meeting and 16th NERPC meeting. The petitioner was directed to pay at least 50% of the outstanding amount payable to PGCIL pending disposal of the petition.

Analysis and Decision:

15. Assam Power Distribution Company Limited (APDCL) is engaged in the business of distribution, sale of electricity and purchased power from Central Sector and State Sector Generating Stations as well as from other IPPs, mainly within the State of Assam. While, and Assam Electricity Grid Corporation Limited (AEGCL) which is the State Transmission Utility (STU), is engaged in the business of transmission of electricity within the State.

16. APDCL has been availing the service of PGCIL from different sources (excluding the quantum of power generated within the State by APGCL which are being evacuated through STU networks and paying transmission charges to PGCIL as per the Commission`s orders/ relevant Regulations issued from time to time.

17. As per the Commission`s direction, the staff of the Commission convened a meeting with the representatives of the petitioners, NERPC and NLDC to discuss in certain issues *inter alia* the reasons for increase in transmission charges payable by APDCL and AEGCL as a result of implementation the Third Amendment to the Sharing Regulations, rationale behind increase in transmission charges, and cash flow problem for making payment of transmission charges till approval of tariff by SERC, etc. and other issues raised by them.

18. PGCIL has filed its response on the 'record note of discussion of 16th TCC meeting and 16th NERPC meeting'. We have perused minutes of 16th TCC and 16th NERPC Meetings held on 29.1.2016 and 30.1.2016 respectively in which Assam made a detailed presentation. In the said meetings, the representative of APDCL submitted that the matter should be taken up with the Commission to consider different scenarios of operation in the grid. Chairman, APDCL/APGCL/AEGCL stated that new PoC charges implemented by the Commission has put great financial constraints not only to Assam but also to all other NER States and requested the forum to give a suggestion in this regard. After detailed deliberation, the forum suggested Assam to give the presentation and highlight the views of NERPC forum to the Commission.

19. We have perused presentation given by APDCL in NERPC meeting. APDCL vide its affidavit dated 18.1.2016 has placed on record the points raised in the meeting. We have considered the submissions of the petitioners and the respondents and perused documents available on record. According to the petitioner, the main reasons for increase in POC charges are removal of uniform charges, increase in slabs from 3 to 9 and geographical location or non-availability of CSGS within Assam. These issues are dealt with as under:

Issue No.1: Removal of uniform charges:

20. The petitioners have contended that in accordance with the Regulation 7(1) of the Sharing Regulations, the uniform charges were provided as transitory mechanism which was to be reviewed after two years of implementation of Sharing Regulations. NLDC (POSOCO), vide its letter No. POSOCO/ Trans. Pricing/ dated 16.8.2013

suggested that the Commission should review the weightage accorded to the Hybrid methodology and the uniform charge sharing mechanism in terms of Regulation 7(1) (q) of the Sharing Regulations. POSOCO has submitted the results with 25% uniform charges, which indicates increase in spread between the lowest and the highest POC rates before grouping them in slab rate. POSOCO has submitted that the Commission, after analyzing 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, and did not consider the suggestion of POSOCO.

21. We have considered the submissions of petitioner and the respondents. It is noted that the reasons stated above by the petitioner have been deliberated in the Statement of Reasons to Third Amendment of Sharing Regulations which is extracted as under:

"13.9 We have considered these comments. We do not agree with the suggestion of GRIDCO that the uniform charge should be deleted from 1.7.2011. Sharing Regulations came into force with effect from 1.7.2011 and the Regulations explicitly contained a provision that uniform charge will form 50% of PoC charge and the scheme will be reviewed after two years. The Commission undertook the exercise of reviewing the uniform charge through the Third Amendment and after stakeholders' consultations decided to do away with uniform charge. The Third Amendment was proposed to come into effect from the date of its publication in the Gazette. While notifying the Third Amendment, it was provided that the regulations would come into effect from 1.5.2015. Accordingly, the Third Amendment has come into effect from 1.5.2015. The suggestion of GRIDCO to retrospectively amend the regulations is not possible for two reasons. Firstly, regulations made in exercise of the powers of delegated legislations have to be given effect prospectively. Secondly, the transmission charges collected from the DICs have already been disbursed to the CTU and inter-State transmission licensees and STUs where applicable. If the allocation of liabilities for transmission charges among the DICs are allowed to be revised retrospectively, it will lead to reopening of the entire PoC mechanism from 1.7.2011. Since the DICs and the inter-State transmission licensees have settled their affairs based on the applicable regulations in vogue from 1.7.2011 till 30.4.2015, it is in nobody's interest to unsettle the settled position. Therefore, both from legal and commercial points of view, the suggestion of GRIDCO for retrospective operation of Sharing Regulations with effect from 1.7.2014 cannot be accepted.

13.10 With respect to comments of BSPCL, we are of the view that PoC charges capture the distance, direction and quantum of flow and every DIC has the liability to pay the transmission charges for the system it uses. The issue raised by BSPCL that it should not be burdened with the charges for the transmission lines constructed for power transfer from NER to NR without any benefit to BSPCL, it is clarified that the concerns of BSPCL have been addressed by removing the uniform charges as a component of POC charges. If these lines are of such nature that they directly transfer power from NER to NR with no connection with ER system, it will not burden Bihar. If these are interconnected with ER and Bihar is using the same, its charges will be shared by Bihar to the extent of usage. It may also replace power from farther station(s) and may actually benefit Bihar. Keeping in view increasing Peak Demand Met trends of Bihar from 1000 MW to more than 2100 MW in last five years, these assets may prove beneficial to Bihar. To avail benefit, it is required that Bihar improves its intra-state transmission network and more connections are made with ISTS. This will also help in reducing transmission losses, which will in turn result in important gain through higher net scheduled energy.

13.16 FERC does not propose interconnection-wide cost allocation as a regional allocation method for transmission facilities. The regions will define benefits, and FERC considers at least three primary areas for benefits will be considered reliability, economics and public policy. Order No. 1000 states that there will be no cost allocation where there is no benefit:

13.17 Those that receive no benefit from new transmission facilities, either at present or in a likely future scenario, must not be involuntarily allocated any of the costs of those facilities. That is, a utility or other entity that receives no benefit from transmission facilities, either at present or in a likely future scenario, must not be involuntarily allocated any of the costs of those facilities."

Keeping in view the submissions of the stakeholders above, the uniform charges have been removed vide Third Amendment to the Sharing Regulations. In our view, there is no requirement to revisit the issue of uniform charges which was sought to be replaced by introducing the PoC charges based on distance, direction and quantum of flow of electricity. It is clarified that for Quarter 4 of 2014-15, the usage based transmission charges computed by software for Assam were Rs. 27crore/month. However, due to uniform charges and slabbing, its charges falls to Rs 16 crore/month. The charges of Assam and such other States were being subsidized by other States. In Quarter-1 of 2015-16, since, the usage based transmission charges of Assam were

Rs.35.5 crore and the billing was Rs 34 crore, the transmission charges payable by Assam are based on usage of ISTS by the State.

Issue No.2: Increase in slabs from 3 to 9:

22. The petitioner has submitted that Regulation 7(1) (1) of the Sharing Regulations, which is extracted as under, provides that the slab rates for injection and demand POC charges shall be rationalized in 2014-15 based on a review by the Commission:

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

23. According to the petitioner, POSOCO had submitted that during its interaction period with various DICs during the last two years over the methodology for three slabs, there were observations that the actual POC rate for drawl of number of the DICs is less than the minimum POC slab rate and the same for certain DICs is also more than the maximum POC slab rate. Therefore, POSOCO had considered five slabs instead of prevailing three for the same basic network, load flow, assumptions and transmission losses for Q2 of 2013-14 with alternatives, namely (i) Five slabs with step size of ` 7500/ MW/ Month and 1 Paisa/Unit, keeping the lowest and the highest slab rates same, (ii) Five slabs with step size of **Rs.15000/** MW/ Month and 2 Paisa/Unit, widening the range of slab rates. POSOCO has submitted that the Commission rejected its proposition and introduced nine slabs.

24. We have considered the submissions of petitioner and the respondents. The reasons to introduce three to nine slabs have been deliberated in the Statement of Reasons of Sharing Regulations as under:

"22.9 We had presented the impact of uniform charges and slab system in the Explanatory Memorandum to draft amendment and had observed that this adjustment is 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. It is noted that the slab system also distorts the locational signal. We had proposed to dispense with the Slab Rate in draft amendment and make the DICs pay the Transmission Charges as per actual usage.

22.10 The objection of stakeholders in regard to slab was due to the fact that they were adversely affected due to wide variations in slab rates. Their objection was emanating from their apprehensions that their PoC rates increased due to slabs.

22.11 The slabs were provided in 2011 for reducing the impact of new mechanism for sharing of transmission charges. As the methodology was to be implemented for the first time and it was a shift from Regional postage stamp method, for better understanding and administrative ease in implementation, based on a proposal from implementation committee in which DICs of all regions had representation, slab system was approved by the Commission.

22.12. In Regional postage stamp method, all DICs in a region were paying the same per MW rate for transmission system, which was calculated based on allocation in Central Sector Generating Stations. Also at that time, the differential in transmission charges among various regions were ranging from 2 to 8 paisa per kWh, slab system was designed keeping three slabs around average charges. 22.13. After three years of implementation it was found that the slab design is creating more resentment among DICs. The reason being that the PoC rates of DICs which are at the lower end of PoC rates are shifted upward at the first available lower slab of 'Average rate-Rs.15000.' This lowest slab was Rs. 70,000 initially (Year 2010-11) and now it is Rs 92,173 per MW per month (Q4/ 2014-15). So the PoC charges to be paid by these DICs are increasing. Also it benefits the States which are using ISTS to a large extent as their charges were pegged at 'Average rate + Rs15,000.' It means that for such DICs for whom actual PoC rates are high as per the software output, say Rs 2,00,000 to Rs 3,00,000 /MW per month were pegged at Rs 1,00,000 per MW/month for the Year 2010-11 and now pegged at Rs 1,22,173 per MW per month for Q4/ 2014-15.

22.16. In last five years, more transmission assets have been created for NR and WR keeping in view target region estimates given by generators and projected load growth in these regions. In planning process all the DICs of these regions were aware that assets are being created. If power is not being procured under long term PPAs and LTAs are not adding into system, the rates may increase.

22.17. If design of slab rate is done around average rates and number of slabs is less, it will adversely affect the DICs at lower end of PoC rates. So to actually implement minimum regret principle it is necessary that slab design is reviewed. So a slab mechanism based on statistical and scientific method has been adopted. The other two less significant reasons of retaining Slabs suggested by POSOCO are administrative ease in implementation and some approximations in computation of PoC rates.

22.18. So far as the approximations in computation are concerned, we find that some of these like clubbing of transmission line and transformer cost are inescapable. In Principal Regulations separate cost for these two was to be used but there also transformer cost was to be allocated to high and low voltage line in proportion of 2:1. Later, based on difficulties expressed by CTU like non availability of separate tariff, multiple type of configuration in different substations, additional cost of bay equipment like CT, PT and Reactors, it was not found feasible and method of allocating all tariff to transmission lines depending on length and voltage was approved vide first amendment to Sharing Regulations.

22.19. The approximations in computation are applied to all nodes without any discrimination and they get evened out in four seasons and so no user is, by design, adversely affected by this. Approximation in computation should not be the reason to reduce confidence in computation and increasing and decreasing the PoC rates. The software for computation of transmission charges was got validated by a highly qualified and experienced committee comprising Prof Tukaram of IISc, Bangalore and other experts from CEA, CTU and POSOCO.

22.20. Assumptions and approximations are part of computation of Usage based transmission sharing mechanism and in UK National Grid "Use of System Charging Methodology" even different voltage transmission lines are converted into single base of 400 kV by a factor called circuit expansion factor.

22.21. CEA has suggested that transformer should be included in computation as an element and its tariff can be taken based on Capital cost. This suggestion would be considered after doing some sample case studies and analysis of the results and its implication. Implementing Agency is advised do this exercise in consultation with IIT, Bombay and CEA.

22.22. We have also carefully examined the concept of Min Max Method explained by IIT Bombay, during the public hearing.

22.22.1 The proposed methodology is based on DC Load Flow method. The approach paper for Sharing of Transmission charges published by the Commission in 2009 had also proposed methodology based on DC Load Flow as it has certain advantage like simplicity and fastness in execution but after discussion with stakeholders in various workshops, it was decided to adopt AC Load Flow method. So the issue of DC Load Flow cannot be reopened without giving chance to other stakeholders to respond.

22.22.2 The Min Max method suggested by IIT Bombay, though is based on economic theory, yet it is difficult to implement, as it will change sensitivity to distance, direction and usage. This method reduces the differential of transmission rates of DICs, by

selecting different set of participatory nodes (dispersed slack buses) for each node with the objective to reduce PoC rates at a particular node as compared to original computation based on average participation method. This may lead to results which are technically unexplainable to stakeholders. In present methodology, the major participatory nodes are nodes which are nearby nodes and same is easily explainable and can be understood. In Min Max method, the participatory node selection is based on iterative process, sometimes it selects dispersed slack bus which is too far or too remote from the withdrawal node /injecting node which is difficult to explain to the practicing engineers. Also min max method works on the nodal basis and is useful when transmission pricing or energy pricing is done on nodal basis (Locational Marginal Pricing). Sharing of transmission charges at present is based on aggregated PoC rates on Zonal basis after computing at nodal basis. Even if PoC rates of few nodes is decreased, it will simultaneously increase PoC rates of other nodes so the effect on overall Zonal charges cannot be predicted.

22.22.3 In view of these difficulties, it was decided that min max method although with its intended benefit of reducing diversity of PoC rates cannot be implemented.

22.23 While we had proposed a slabless system for specifying transmission charges, taking note of submissions of POSOCO in regard to assumptions we have decided to keep the slabs. Keeping in view suggestions of Torrent Power and GRIDCO and in order to increase satisfaction level of DICs, we have decided to introduce 9 slabs in this amendment which shall be reviewed after 2 years and considering suggestion of CEA that some maximum and minimum limits on PoC rate should be there, slab design has been formulated as given is succeeding paragraphs.

Although we had proposed the slab less system in draft amendment but we finally approved 9 slabs as per suggestion of POSOCO."

In view of the above detailed discussion, a conscious decision has been taken to increase the slabs from three to nine and accordingly, the Sharing Regulations have been amended. Since APDCL`s drawal from the ISTS falls in the higher slab, it is required to pay the transmission charges for corresponding slab.

Issue No.3: Geographical Location and Non-availability of Central Generating Station:

25. According to the petitioner, geographical location and size of the State vis-a-vis the location and size of the generating station under the present considerations also

seem to have effect on applicable POC rates. For example, Tripura has two Central Sector Generating stations, namely AGTPP, NEEPCO (84 MW) and OTPC Pallatana (363.3x2 MW). The petitioner has submitted that CTU`s network utilization by Tripura is confined within the State itself considering the limited demand of Tripura resulting lesser utilization of CTU networks. Therefore, power does not flow to Tripura physically from other Central Sector Generating Stations located in other States though Tripura has share from other Central Sector Generating Stations located in NER. Similarly, in the State of Manipur where the Loktak HEP (105 MW) is located, the power demand is met by Loktak HEP. Though the States of Mizoram or Meghalaya are smaller but their situation is completely opposite. For example, there is no Central Sector Generating Stations (source of power) within the respective States and their entire shares come from Central Sector Generating Stations located in other States. Therefore, these States have utilised CTU network`s more and are paying higher transmission charges. In the State of Assam, due to power flows from different sources, it is paying higher transmission charges. The petitioner has submitted that due to geographical location of a State or non-availability of resource, APDCL is paying higher transmission charges under present POC mechanism. However, the geographical location or non-availability of power from the Central Sector Generating Station within/nearest to each and every State are not matters under the control of the concerned States for which States cannot be at fault and have to pay more than its neighbouring States.

26. We have considered the submissions of petitioner. We are of the view that the basic philosophy of POC mechanism under Sharing Regulations is usage based. If the State of Assam is drawing more power from ISTS and using ISTS, than it has to pay for

PoC charges which are specified in line with the provisions of the National Electricity Policy and Tariff Policy. As per National Electricity Policy, transmission pricing should be sensitive to distance, direction and related to quantum of power flow. Tariff Policy specified that the ultimate objective under the Policy is to get the transmission system users to share the total transmission cost in proportion to their respective utilization of the transmission system. In our view, the PoC mechanism under Sharing Regulations is in line with guidelines of National Electricity Policy and the Tariff Policy notified by the Govt. of India. The transmission charges should be based on the utilization of the ISTS and utility which uses the more ISTS, should pay accordingly.

Issue No 4: Consideration of Peak withdrawal in Place Average withdrawal consideration earlier:

27. The petitioner has submitted that as per the Sharing Regulations, separate computation is required to be carried out for Peak and Off peak periods. Therefore, the Commission should carry out separate computation for Peak and off peak conditions to take decision after considering the result of both exercises.

28. We have considered the submission of petitioner. In the Statement of Reasons to the Sharing Regulations, the issue raised by the petitioner has been dealt with as under:

"18.9 We have considered objections /suggestions of the stakeholders. We had given detailed analysis of proposing billing on peak injection over average injection in the Explanatory Memorandum to proposed draft amendment which is quoted below:

"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-avis LTA considered for computation of PoC and by different injecting DICs is enclosed at Annexure-2 along with 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 offpeak 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."

18.10 Hence for making transmission charges reflective of its usage, charges should be attributed to users based on maximum injection/withdrawal. Accordingly the base case shall be prepared based on maximum injection /maximum withdrawal. The injection/ withdrawal data to be considered in base case shall be as submitted by DICs and as cross-checked and validated.

18.11 Regarding CTU's suggestions for the requirement of a new generator to submit its generation beforehand, it is stated that new generators are already required to submit these details as per Regulation 7(1)(e) and hence no change is required in the Regulations

18.12 Our observations in regard to suggestions of BSPCL are as under:

- (1) It is not correct to assume that charges would increase if computation is done based on maximum withdrawal. Total transmission charges to be recovered are same and only the distribution of charge among DICs would change depending on their maximum drawal. It would also depend on drawal of a DIC with respect to drawal of other drawee DICs.

(2) Having taken peak based on peak met for the last 3 years during the period corresponding to Application Period and All India Peak Met (normalized with All India peak), the drawal no longer represents one-off situation in which State had drawn heavily due to certain local reasons. The State/UT- wise peak met figures being non-coincidental, the same will be normalized w.r.t peak met on all India basis. Further during peak periods drawal of few entities will be at their peak and the same in respect of few entities may be at their minimum. Similar is the case with off peak condition where drawal of few entities may be at their peak. Hence the approved injection/withdrawal considering average and scaled peak and not the actual peak shall be a representative figure rather than being an abnormal or non-representative figure.

(3) The concept of considering peak scenario instead of average scenario also gets supported by the fact that transmission planning is done considering peak scenario and not average scenario which was also stated in Explanatory Memorandum to Draft Regulations.

(4) For a test period Q2 2014-15, it was examined from All India Load curves that in the month of July, August & Sept, 2014, 56%, 54% and 44% of the time, the load was above the average all India load considered for average case in the study. Thus it emerges that the charges in respect of the assets created to cater to peak drawal or injection do not reflect proper sharing of charges. Such assets are quite underutilized and marginal participation of any state/DICs using these assets comes very high, as base case flow is small and power flow change (Δp) due to 1MW additional drawal becomes large. Hence the costs for such assets are allocated to DICs which are using these assets marginally.

(5) Regarding request of BSPCL that computation should be done both for Peak and Off Peak time, it is clarified that in the Principal Regulations it was envisaged that separate computation will be done for Peak and Off Peak but during the implementation phase it was found difficult due to following reasons:

a. Due to regional diversity it was difficult to define "Peak hours" for all India Grid. Also Peaks of individual DICs were not coinciding with Regional Peaks.

b. For computation, separate node wise data for Peak and off Peak was not submitted by most of the DICs.

c. DICs were not giving firm figures for their drawal.

d. Also in sample cases done on assumption basis, there was wide difference in Peak and Off Peak, which was difficult to comprehend."

Based on the above discussion, we have concluded considering peak usage in place of average usage and separate calculations for peak and off-peak time is not envisaged.

Issue No 5: Consideration of only ideal scenarios of availability of all ISGS and Transmission Lines and Generators during the Period of consideration (quarterly).

29. The petitioner has submitted that in transmission planning system, availability of network is always considered on N-1 basis unlike that, in POC mechanism, availability of ISGS units is considered on N-0 basis, implying all generating stations would always remain in grid during peak hours as ideal condition. However, practically, any units may tripped and remain out from grid at any moment due to any reasons. Under such a scenario, the load flow pattern and the usage of network profile would change. The petitioner has submitted that the existing regulation do not specify this dynamic scenario which is most common in an integrated network. All injection nodes of the network should be examined taking into consideration of outage of highest generating unit keeping the demand intact of the DICs. The petitioner has submitted that after finding out the utilisation of assets by DICs in both scenarios, sharing should be made in 50: 50 to the DICs.

30. According to the petitioner, condition of unit tripping of a generator should also be considered and the dynamic scenario considering the outage of largest generating units keeping demands intact of DICs should also be considered thereafter. In this regard, it is clarified that POC calculations are done for a quarterly basis before the beginning of the quarter based on the data of demand and injection as submitted by DICs. For the ensuing quarter, one rate is specified for the entire quarter. The scenario considered for ensuing quarter is based on the peak usage as transmission system is planned on peak scenario. In the transmission planning, N-1 criteria of network is used for contingency analysis to ascertain reliable and secure operation of the grid.

Consideration of dynamic scenario would lead to incomprehensible PoC rates under various scenarios. Therefore, only one scenario is used for computation of PoC rates. DIC may give the injection data considering most probable peak scenario for its State so that the POC charges are reflective of its peak usage of ISTS. The contention of the petitioner to consider dynamic scenario does not seem acceptable presently.

Issue No 6: Availability of transmission Networks in the interest of future need:

31. The petitioner has submitted that in the State of Arunachal Pradesh in particular and the entire NER in general being the power potential hub, the transmission network of the region is being designed in such a way that excess power can be evacuated from this region to the other regions of the country as in inter-connectivity of all such transmission systems, number of Loop in Loop out (LILo) lines are added within the State of Assam. The petitioner has submitted that due to availability of network connectivity, power flows through all such lines as a result, the usage of Assam has gone up by virtue of power flow principle. The petitioner has submitted that all these inter-State lines meant for evacuation of excess/surplus power from the region through Assam for which Assam has offered its fertile lands in the interest of the nation.

32. The petitioner has contended that number of LILo lines has been added within the State of Assam due to which usage of Assam has gone up and the line which is meant for evacuation of excess power from the region has led to increase in its POC charges. In this regard, we are of the view that the charges for the ISTS lines which pass through Assam are not being levied on Assam in case Assam's load is not being served through such lines. Under the POC mechanism, charges are assigned to any State based on the extent of the usage of ISTS lines by its own load. Therefore, the

lines which are serving the load of other States would not be levied on Assam and would be levied on such State which is using such lines.

33. Learned counsel for PGCIL during the hearing submitted that PGCIL is billing strictly as per the provisions of the Third Amendment to the Sharing Regulations, based upon the data collected from Regional Power Committees prepared on the basis of the POC rates. Learned counsel for PGCIL further submitted that around Rs. 112 crore is outstanding against APDCL. In view of the above discussion, there is no requirement of review of the Sharing Regulations. The petitioner is directed to pay outstanding dues and current dues of POC charges as per the provisions of the Sharing Regulations as amended from time to time.

34. The petition is disposed of with the above direction.

Sd/-

(A.S. Bakshi)
Member

sd/-

(A.K. Singhal)
Member

sd/-

(Gireesh B. Pradhan)
Chairperson