

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 153/MP/2017

**Coram:
Shri P.K. Pujari, Chairperson
Dr. M.K. Iyer, Member**

Date of Order:19thNovember, 2018

IN THE MATTER OF

Petition under Section79 (1)(d) of the Electricity Act, 2003 read with Central Electricity Regulatory Commission (Open Access in Inter-state Transmission) Regulations,2008 and its amendments for approval of Open Access charges for transmission and wheeling of power using Transmission and Distribution network of Damodar Valley Corporation.

AND IN THE MATTER OF

Damodar Valley Corporation
DVC Towers, VIP Road,
Kolkata -700 054

.....Petitioner

VERSUS

1. M/sTATA STEEL LIMITED
Through Chief Power management
Bombay House, 24, HomiModi Street.
Mumbai-400023
2. M/s India Power Corporation Limited
Through the Whole Time Director
Plot No.- X-1,2 & 3, Block EP, Sector –V, Salt Lake City
Kolkata-700091
3. M/s Super Smelters Limited
Through CEO, 39, ShakespearSarani
“PREMLATA”, 3rd Floor
Kolkata-700 017
4. Indian Railways
Through the Chief Electrical Distribution Engineer
Office of Chief Electrical Engineer
East Coast Railway
Hajipur
5. M/s Steel Authority of India Limited
Through Dy. GM (Operation/SLCC)



Corporate Power Group, 8th Floor,
40, Chowringhee Road
Kolkata- 700071

6. M/s Jindal Steel & Power Limited
Through Business Head Jharkhand
Balkudra, Patratu, Ramgarh -829143,
Jharkhand

...Respondents

Parties Present:

- 1) Shri M.G. Ramachandran, Advocate, DVC
- 2) Ms. Ranjitha Ramachandra, Advocate, DVC
- 3) Shri Subham Arya, Advocate, DVC
- 4) Shri Samit Mandal, DVC

ORDER

The Petitioner, DVC, is a statutory body established by the Central Government under the Damodar Valley Corporation Act, 1948 (hereinafter referred to as the 'DVC Act') for the development of the Damodar Valley, with three participating Governments, namely, the Central Government, the Government of West Bengal and the Government of Jharkhand. The Petitioner has mainly submitted as under:

- (a) The activities of the Petitioner include generation of electricity; transmission of electricity; sale of electricity to licensees; and distribution and retail supply of electricity to consumers/end users in the Command Area.
- (b) This Commission determines the tariff as per the provisions of the Electricity Act, 2003 for (i) the generating stations of the DVC, and (ii) the transmission system of the DVC. The State Commissions of West Bengal and Jharkhand determine the distribution and retail supply tariff in regard to the respective States.



(c) The existing 400 kV, 220 kV and 132 kV networks of the Petitioner are inter-connected at different power stations and at different sub-stations located in the two contiguous states i.e. the West Bengal and Jharkhand. In regard to this particular petition involving the transmission and distribution network of the Petitioner, the Hon'ble Appellate Tribunal of Electricity in its order dated 23.11.2007 in the Appeal Nos. 271, 272, 273, 275 of 2006 & 8 of 2007 held as under:-

“111. DVC has been supplying power from its generating stations to West Bengal Electricity Board and Jharkhand Electricity Board along with nearly 120 HT-Consumers either through inter-state transmission lines or through the point-to-point 'dedicated transmission lines'. We, therefore, conclude that all transmission systems of DVC be considered as unified deemed inter-state transmission system, insofar as the determination of tariff is concerned and as such regulatory power for the same be exercised by the Central Commission.”

(d) The Commission by order dated 27.9.2013 in Petition No.270/TT/2012, has determined the tariff for the Transmission and Distribution system activities of the Petitioner for the period from 1.4.2009 to 31.03.2014 and also carried out the trueing up for the period from 2009-10 to 2011-12. The Commission vide its order dated 27.9.2013 in Petition No. 270/TT/2012 had approved the annual fixed charges for the period 2009-14 as under:-

	(Rs. in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	7241.46	8159.87	9076.20	9482.71	9482.71
Interest on Loan	14.07	86.46	82.49	11.03	0.00
Return on Equity	6113.55	7028.58	7725.69	8031.89	8031.89
Interest on Working Capital	1050.18	1202.79	1286.93	1353.90	1410.16
O&M Expenses	15424.22	17680.93	18692.56	19764.04	20893.50
Sub Total	29843.48	34158.62	36863.87	38643.57	39818.27
Pension & Gratuity Contribution	5538.41	5538.41	5538.41	5538.41	5538.41
Sinking fund Contribution	2001.15	2113.10	5451.68	5833.30	6241.63
Common office	246.50	232.65	169.34	169.31	169.39

Expenditure					
Total	37629.54	42042.78	48023.29	50184.58	51767.69

Note: (i) All figures are on annualized basis. (ii) All the figures under each head have been rounded. (iii) The figure in total column in each year is also rounded. Because of rounding of each figure, the total may not be arithmetic sum of individual items in columns.

(e) The Respondents No. (1) M/s Tata Steel Limited, (2) M/s India Power Corporation Limited, and (3) M/s Super Smelters Limited have been granted Open Access to the transmission and distribution system owned and operated by DVC. The Respondents No. (4) Indian Railway (East Central Railway), (5) M/s Steel Authority of India Limited and (6) M/s Jindal Steel & Power Limited have applied for open access to the said system operated and maintained by DVC.

(f) The present petition has been filed for determination of transmission/wheeling charges for open access customers in West Bengal and Jharkhand region under the DVC command area in view of the above quoted part of the Hon'ble Tribunal's order dated 23.11.2007 wherein it has been held that all transmission systems of DVC be considered as a unified inter-State transmission system and the Appropriate Commission for this would, therefore, be the Central Commission.

(g) The Central Electricity Regulatory Commission (Open Access in inter-state Transmission) Regulations, 2008 (hereinafter referred to as "Open Access Regulations") and its amendments upto date defines the eligibility criteria and conditions to be satisfied for availing open access facility, application procedure, application fees, timeline for grant of concurrence, procedure for scheduling and charges to be levied on short term open access customer. The Open Access Regulations provides as under:

“16. Transmission Charges

(1) In case of bilateral and collective transactions, transmission charges for the energy approved at the regional periphery for transmission separately for each point of injection and for each point of drawal, shall be payable in accordance with the provisions of Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 as amended from time to time,

(2) The intra-State entities shall pay the transmission charges for use of the State network as fixed by the respective State Commission in addition to the charges specified under clauses (1) of this regulation:

Provided that where the State Commission has not determined the transmission charges for use of the state network in Rs. /MWh. The charges for use of respective State network shall be payable at the rate of Rs. 80/MWh for the energy approved:

Provided further that non-fixation of the transmission charges by the State Commission for use of the State network shall not be a ground for refusal of open access:

Provided also that the transmission charges payable for use of the State network shall be conveyed by State Load Despatch Centre to the concerned Regional Load Despatch Centre. These charges shall be displayed by the concerned State Load Despatch Centre and Regional Load Despatch Centre on their web sites:

Provided also that the transmission charges shall not be revised with retrospective effect.”

(h) Section 62(1) of the Electricity Act, 2003 provides as under:-

“The Appropriate Commission shall determine the tariff in accordance with provisions of this Act for –

(a) supply of electricity by a generating company to a distribution licensee:

Provided that the Appropriate Commission may, in case of shortage of supply of electricity, fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of an agreement, entered into between a generating company and a licensee or between licensees, for a period not exceeding one year to ensure reasonable prices of electricity;

(b) transmission of electricity;

(c) wheeling of electricity;

(d) retail sale of electricity.

Provided that in case of distribution of electricity in the same area by two or more distribution licensees, the Appropriate Commission may, for

promoting competition among distribution licensees, fix only maximum ceiling of tariff for retail sale of electricity.”

(i) Section 79 (1) (d) of Electricity Act, 2003 provides as under:-

“The Central Commission shall discharge the following functions, namely
.....
(d) to determine tariff for inter-state transmission of electricity.”

(j) The West Bengal Electricity Regulatory Commission (WBERC) has declined to deal with open access issues of the Petitioner filed by one of the HT consumers, namely M/s Super Smelters Limited regarding non – grant of open access. WBERC directed M/s Super Smelters Limited, Respondent No. 3, vide letter dated 28.10.2015 to approach this Commission on issues related to open access of the DVC Transmission and Distribution system. WBERC further stated that the system of DVC is an integrated one and is treated as a deemed inter-State transmission system and thus, the Central Commission is the appropriate authority.

(k) The Petitioner has submitted that the Total Transferable Capacity of the transmission system of DVC for the financial year 2017-18 is 2473 MW. The transmission capacity required for transfer of power for maintaining the supply of electricity to the consumers of DVC, in terms of the contract demand taken as at present is 3790 MVA (as on 30.04.2017). The per MW transmission charge works out to Rs. 20.93 lakh per annum. Therefore, the open access consumers are required to pay the transmission/ wheeling charges at the rate of Rs 1.744 lakh per MW per month. The computation of the above is as under:-

Total Annual fixed charges (AFC) as approved by CERC for the period FY 2013-14 in Rs. Lakhs	51767.69	Ref:CERC order dated 27.09.2013
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Total Transferable Capacity of transmission system for FY 2017-18 in MW	2473	Derived on the basis of Load Flow Analysis of DVC T&D Network considering reliability margin.
Annual Transmission/wheeling charges in Lakh /MW/annum	20.93	
Monthly Transmission / wheeling charges in Lakh / MW/month	1.744	

(l) The open access customers are required to pay the open access charges/transmission and wheeling charges at the above rate as at present subject to adjustment upon the determination of the revenue requirement of DVC in regard to the integrated transmission and distribution network.

2. In view of the above submissions, the Petitioner has prayed as under:

“(a) To determine the transmission/wheeling charge for open access customers in West Bengal and Jharkhand region under the DVC command area for the FY 2017-18 & FY 2018-19.

(b) To authorise the Petitioner to raise bill on the open access customer as per the transmission/wheeling charges determined by the Commission.

(c) Pass an ad-interim order permitting the Petitioner to claim the transmission and wheeling charges at the rate of Rs. 20.93 Lakh per MW per year pending the determination of transmission/wheeling charges as per the prayer (a) above.”

3. The petition was admitted on 29.8.2017 and notices were issued to the Respondents.

4. The Respondent No. 2, India Power Corporation Limited (IPCL), vide affidavit dated 12.10.2017, has submitted the following:

(a) The Petitioner is involved in activities such as Flood control, Irrigation, Social Integration Projects, Soil Conservation activities, Multi-purpose Dams, afforestation, etc. and the revenue from transmission and distribution system should not be allowed to subsidise the aforesaid non-power activities. Further,

while granting the annual fixed charges for the period 2009-14 approved by the Commission for the Petitioner's Transmission & Distribution (wires) system, IPCL was not made a party in the said proceedings, even though it was operating as a distribution licensee and purchasing power from DVC, whereas WBSEDCL and other distribution licensee in the State of West Bengal were a respondents with Jharkhand State Electricity Board.

(b) The Petitioner vide its letter dated 13.6.2017, requested IPCL to agree on a transmission charge of 26.41 paise/kWh for availing Short Term Open Access, based on its proposed submission before the Commission. The Petitioner further denied extension of Short Term Open Access to the Respondent for the period beyond 16.05.2017 leading to considerable difficulty to consumers of IPCL. IPCL requested the Petitioner to allow it to avail the Short Term Open Access at prevailing rates as it earlier used to pay, and vehemently opposed the determination of open access charges/ transmission and wheeling charges for the prospective period based on the revenue requirement approved by the Commission for the year 2013-14. The Petitioner further informed that the prospective charges may be determined only after determination of tariff for the transmission system of the Petitioner for FY 2014-19, as it would reflect the realistic figures based on latest Regulations and norms specified by the Commission.

(c) IPCL is not in agreement with the Total Transferable Capacity of Transmission System for financial year 2017-18, based on the Load Flow Analysis of DVC T&D network considering reliability margin, as submitted by DVC. IPCL has

requested the Commission to direct the Petitioner to furnish the details of the load flow analysis study of DVC T&D network for a better appreciation and analysis. Since, the networks are designed to withstand Maximum Peak Load in MW, the proposal of DVC to take into account the Average Load in MW, is not correct. Further, with the aggregate installed Capacity of the DVC Generating Stations being around 7,400 MW, the proposed total transferable capacity of 2473 MW appears to be inadequate. An optimum network planning is required so that transferable capacity is maximized.

(d) IPCL has requested the Commission to direct Petitioner to submit an update on various litigations that are pending before various forums as per para 100 of Commission's order dated 27.9.2013 in Petition No. 270/TT/2012 for better appreciation of facts and figures.

(e) The charges proposed are not realistic and the details of load flow study should be made available to IPCL and the monthly transmission/wheeling charges in lakh/mw/month should not be allowed.

5. DVC vide its affidavit dated 7.2.2018 has submitted its rejoinder to the Respondent No. 2 as under:-

(a) The activities and the treatment of revenue are being followed strictly in terms of relevant provisions of the DVC Act, 1948. The provisions of DVC Act which are not inconsistent with Electricity Act, 2003 will continue to prevail.

- (b) DVC supplies power also to a large number of firm consumers in and around Damodar Valley Area. It is neither practicable nor essential to make the entire beneficiaries/consumer's respondent. While filing the tariff petition before the Central Commission, a copy of the petition is published in the newspaper and the same is hosted in the DVC website. Hearing at the Central Commission is scheduled a month in advance which is accessible to all including any of the stakeholders. Hence, the excuse forwarded by the respondent is not acceptable and may be ignored *ab-initio*.
- (c) There is no significant difference between agreeing transmission charges payable by IPCL and rate claimed in the petition. Moreover, the rate as claimed in the instant petition, is based on the ARR approved by the CERC in order dated 27.09.2013.
- (d) The rate indicated by DVC to the respondent vide its letter dated 13.06.2017 was a tentative one for the period 2017-18. In the meanwhile, the Commission vide its order dated 29.09.2017 in Petition No.547/TT/2014 determined the transmission tariff for the integrated T&Dsystem of DVC for the period 2009-14 (trued up) by which the transmission charge rate comes to 24.56 paise/Kwh for 2013-14 against the rate of 24.22 paise/Kwh as per the earlier tariff order dated 27.09.2013. The tariff of T&D network of DVC for the period 2014-19 is yet to be determined by CERC. Thus, the rate claimed by the Petitioner before the respondent for open access charges for the period 2017-18 is subject

to adjustment as per the tariff to be determined by the Central Commission for the period 2017-18.

(e) DVC has nowhere mentioned that the open access to IPCL is currently being granted by DVC. IPCL has intentionally added the word "Currently" in its allegation to confuse the Commission which is its own version and not in the submission of DVC. It is denied that the respondent may be allowed to avail the short term open access at prevailing rate as earlier approved by this Commission. The submission of IPCL before CERC seeking open access from DVC is irrelevant in the present context of the petition. The respondent has erred in realizing that the philosophy of the tariff determination is based on the prospective basis and not on retrospective basis subject to truing up.

(f) DVC's total installed capacity of 7400 MW is not evacuated to the existing T&D network of DVC, rather apart of it is directly evacuated from generating station's ex-bus through CTU lines. This 2473 MW is the demand of the consumers (directly wired with DVC T&D system) which DVC's T&D system can safely handle on sustainable basis.

6. The matter was heard on 06.03.2018. During the course of hearing, learned counsel for the Petitioner submitted that the total transferable capacity of the transmission system of DVC for the financial year 2017-18 is 2473 MW based on the Load Flow Analysis of DVC T&D Network considering reliability margin and the per MW open access charges works out to be Rs. 20.93 lakh per annum. Therefore, the

open access customers are required to pay the transmission/wheeling charges at the rate of Rs. 1.744 lakh per MW per month. Learned counsel of IPCL requested the Commission to direct the Petitioner to furnish the details of Load Flow Analysis of DVC T&D Network for a better appreciation and analysis.

7. Learned counsel for IPCL submitted that DVC in its letter dated 13.06.2017 allowed the short term open access for wheeling 10MW power by IPCL to its Luchipur grid on a transmission charge of 26.41paise/kwh on scheduled energy at DVC periphery. However, no transmission charges have been fixed by the Commission till date and with an aggregate installed capacity of the DVC generating stations being around 7400 MW, the proposed total transferable capacity of 2473 MW appears to be inadequate.

8. After hearing learned counsels for both the parties, the Commission directed the Petitioner to submit on affidavit the details of the total transferable capacity of transmission system for financial year 2017-18 based on the Load Flow Analysis of DVC T&D Network.

9. In compliance to the ROP dated 06.03.2018, the Petitioner vide its affidavit dated 23.03.2018 has submitted the following data:

(a) Present Installed Capacity of DVC is 7237.2 MW (Thermal: 7090MW and Hydro: 147.2MW).

(b) Transmission line network of 7660 circuit km. of EHV lines and 49 sub-stations.

(c) Total generation connected directly to the system of CTU: 4700MW.

(d) The 220kV and 132kV grid is required to handle around 2900 MW of DVC's own generation plus net tie flow (import) to the DVC grid through various Tie lines and ICT injection of KTPS & BTPS, in order to cater to the demand of the firm consumers having total Contract Demand (C.D.) of 3777 MVA approximately connected at 220KV, 132KV or 33KV level within the DVC Command area in the State of West Bengal and Jharkhand.

10. The Petitioner has submitted that it computed the transmission/wheeling charge based on the Total Transferable Capacity of DVC's Transmission System for the financial year 2017-18, which was arrived at on the basis of Load Flow Analysis of DVC Transmission as on April - 2017 using <PTI INTERACTIVE POWER SYSTEM SIMULATOR-PSS®E 33' software with database 'All India POC quarter 3 base case' provided by ERLDC in Sept-2016 determined in the para 24.

11. **Determination of Total Transferable Capacity:**The Petitioner has stated that the Total Transferable Capacity (TTC) of DVC Transmission System has been considered as the optimum quantum of electric power (MW) that can be handled by the 220kV & 132kV DVC grid in all connected condition in a reliable manner under specific system conditions for commercial activities after considering applicable reliability margin to take care of (N - 1) contingency in the transmission system.The

computation of TTC is based on off- line computer simulations of the operation of the inter-connected transmission network under a specific set of operating conditions considering factors such as Customer Demands, Generation Despatch, System Configuration of interconnected system and System Contingencies. However, the conditions on the interconnected network continuously vary in real time. Therefore, TTC of the network will also vary from one instant to the next. Depending on actual network conditions, transferable capacity can often be higher or lower than those determined in the off-line simulated conditions. As such, the simulations are viewed as reasonable indicators of network performance and actual transferable capacity as under:

(a) Limits to Transferable Capacity: The ability of inter-connected transmission networks to reliably handle electrical power may be limited by the physical and electrical characteristics such as Thermal Limits, Voltage limits and Stability limits. Therefore, some portions of the transmission network can shift among limits as the network operating conditions changes over time. Such variations may further change Transferable Capacity limits in real time.

(b) Load Flow Scenarios: 220kV & 132kV grid is required to handle around 2900 MW of DVC's own generation plus net tie flow (import) to the DVC grid through various Tie lines & ICT injection of KTPS & BTPS, in order to cater to the demand of the firm consumers having total Contract Demand (C.D.) of 3777 MVA approximately connected at 220kV, 132kV or 33kV level within the DVC Command area in the State of West Bengal and Jharkhand. However, the load demand is so dispersed for sometimes as certain elements of DVC's

T&D system gets overloaded at various points or under-voltage at various buses is experienced while handling 3777 MVA of load on DVC grid in all connected condition.

Case-I: Load Flow Analysis (Considering full Contract demand as 3777 MVA)

Operating Condition: All transmission elements are in connected mode.
Synopsis of the case : The transmission system is not reliable in Case – I, with TTC of 3777 MVA, as overloading and under voltage are observed in various transmission elements, out of which the overloading of the 132kV MHS - Kumardubi line is observed as maximum (137%).

Case- II: Load Flow Analysis (Considering Consumer demand as 90% of CD)

Observation: 132 kV MHS - Kumardhubi line is overloaded up to 122%.
DVC Grid is not reliable.

Case- III: Load Flow Analysis (Considering Consumer demand as 80% of CD)

Observation: 132 kV MHS - Kumardhubi line is overloaded up to 108%.
DVC Grid is not reliable

Case- IV: Load Flow Analysis (Considering Consumer demand as 75% of CD)

It is observed that in this scenario no overloading of any elements of the DVC Transmission System. From the simulation software it may be assumed that the transmission system of DVC can operate reliably (without considering any exigency) under the specified operating condition when the optimum connected load is 2833 MVA. Hence, the transferable capacity of transmission system of DVC is arrived at 2748 MW (considering Power Factor: 0.97) without considering any reliability margin to take care of uncertainties in system conditions.

(c) Determination of reliability margin in DVC Transmission System:-

- From Case-IV it has been observed that the T& D network of DVC operates reliably with 132 kV MHS - Kumardhubi line loaded fully under steady state condition. Hence, the line is considered as a critical element of the grid.
- In order to find out the reliability margin of DVC Transmission System under N-1 contingency, 132kV S/C MHS - Kumardhubi line is made open and this operating condition is simulated in the PSS software under Case IV condition and load flow analysis is done. It is observed that the grid is not reliable as over loading is observed at 132kV S/C MHS - Panchet line up to 124%.

- The load at all generating stations has been reduced gradually and it is observed from the load flow analysis that at 90% of 2833 MVA load i.e. 2550MVA (or 2473MW), the overloading of 132 kV S/C MHS - Panchet is reduced to 109% which is within the permissible limit for short time in post contingency situation. The system operates reliably within the acceptable limit.

12. The Petitioner has further submitted that the Installed Capacity of the DVC generation was 7787.2 MW. However, the present installed capacity is 7237.2 MW as one unit of CTPS and 2 units of BTPS have been de-commissioned.

13. Modified computation of transmission charges as per DVC is as follows:

Yearly Transmission / Wheeling Charge for FY 2017-18

= [AFC for FY 2013-14] / [TTC (MW) for FY 2017-18]

= Rs. 52,479.37 Lakh/ 2473 MW (As per order dated 29.09.2017 in Petition
No.547/TT/2017)

= Rs. 21.221 Lakh/MW/year

= Rs. 1.76 Lakh/MW/month.



14. During the hearing dated 25.07.2018, learned counsel appearing on behalf of India Power Corporation Ltd. (IPCL) submitted that the present petition is liable to be dismissed on various grounds. IPCL submitted that DVC vide its letter dated 13.6.2017 allowed the short-term open access for wheeling of 10 MW power by IPCL to its Luchipur Grid utilizing DVC's T&D network with a condition that IPCL would pay transmission charge @ 26.41 paise/Kwh on scheduled energy at DVC periphery. However, no transmission charge has been fixed by the Commission till date.

15. After hearing the learned counsels for the Petitioner and IPCL, the Commission directed the Petitioner to file the following information on an affidavit:

1. Total contracted capacities in MW by all long-term and medium-term user of DVCT&D system in financial years 2017-18 and 2018-19;
2. Category-wise contracted demand in MW in financial years 2017-18 and 2018-19; and
3. Own and tied-up generation capacity by DVC in MW in financial years 2017-18 and 2018-19.

16. In compliance of the above directions of the Commission, DVC vide its affidavit dated 30.08.2018 has furnished the following details:

- (a) Total contracted capacities in MW by all Long Term and Medium term users of DVC T&D system in financial years 2017-18 and 2018-19:

FY	Contracted capacities for all Medium Term Open Access Users (MW)	Contracted capacities for all Long Term Open Access Users (MW)
2017-18	75	Nil
2018-19	75	Nil

- (b) Category-wise contracted demand in MW in financial years 2017-18 and 2018-19:

Voltage Category	Contracted demand in FY 2017-18 (In MVA) As on 31.03.2018	Contracted demand in FY 2018-19 (In MVA) As on date
33kV	2463.655	2506.255
132kV	658.16	662.16
220kV	537.00	537.00
Total	3658.82	3705.42

- (c) Own and tied-up generation capacity by DVC in MW in financial years 2017-18 and 2018-19:

For Financial Year 2017-18

	As on 01.04.2017	As on 31.03.2018
Own installed capacity(MW)	7787.20	7237.20
Tied up bilateral exportcommitment from own generation (MW)	2861.12	2861.12
Tied up power purchase from other utilities(MW)	440.104	400.104

For Financial Year 2018-19

	As on 01.04.2018	As on date
Own installed capacity(MW)	7237.20	7237.20
Tied up bilateral exportcommitment from own generation (MW)	2861.12	2861.12
Tied up power purchase from other utilities(MW)	400.104	400.104

Analysis and Decisions:

17. We have heard and considered the submissions made by the respondents and the Petitioner at length. The Petitioner in its first prayer has prayed to determine the transmission/wheeling charges for open access customers in West Bengal and

Jharkhand region under the DVC command area in pursuant to the APTEL's judgment dated 23.11.2007 in Appeal No. 271/2017 and batch matter.

18. The Petitioner has placed on record the calculations for wheeling charges as Rs. 21.221 Lakh per MW per annum based on Total Transferable Capacity of 2473 MW for the transmission system for the financial year 2017-18.

19. The Respondent IPCL has submitted that since the transmission networks are designed to withstand maximum peak load in MW, it should be used to calculate per unit wheeling charge. Further aggregate installed capacity of the DVC generating stations is around 7,400 MW.

20. The Petitioner vide affidavit dated 7.2.2018 has submitted that the present installed capacity of DVC is 7237.2MW (Thermal: 7090MW and Hydro: 147.2MW) and its transmission line network consisted of 7660 circuit km. of EHV lines and 49 sub-stations. Further, the total generation connected directly to 400kV system of CTU is 4700MW while 2900 MW of DVC's own generation plus net tie flow (import) to the DVC grid through various Tie lines & ICT injection of KTPS & BTPS is handled by the 220kV & 132kV grid, in order to cater the demand of the firm consumers having total Contract Demand (C.D.) of 3777 MVA approximately connected at 220 kV, 132 kV or 33 kV level within the DVC Command area in the State of West Bengal and Jharkhand.

21. The Petitioner has placed on record the results of load flow studies and has submitted that DVC had computed the total transferable capacity of 2473 MW by considering 75% of the contracted demand of 3777 MVA and at power factor of 0.97.

22. We have deliberated on the method of computation of transmission/wheeling charges followed by the Petitioner. We observe that the total transfer capability mentioned by the Petitioner is dynamic and varies with time to time. The 'capability' always changes with the time by virtue of changes in the system conditions. Hence, we are not inclined to consider TTC as a metric to compute transmission/ wheeling charges.

23. We have perused the methods of computation of transmission/wheeling charges adopted by certain SERCs like Tamil Nadu Electricity Regulatory Commission, Madhya Pradesh State Electricity Regulatory Commission including Gujarat Electricity Regulatory Commission. These SERCs have considered contracted capacity for computation of Open Access charges. We feel that the methodology adopted by these States suits well to the current scenario and have perused the GERC regulation for determination of Open Access charges in the instant petition. Clause 72 of the GERC Multi-year Tariff Regulations, 2016 provides as under:

“72. Sharing of charges for intra-State transmission network

72.1 The Aggregate Revenue Requirement of the Transmission Licensee, as approved by the Commission, shall be shared by all long-term users and medium-term users of the transmission system on monthly basis in the ratio of their respective contracted transmission capacities to the total contracted transmission capacity, in accordance with the following formula:

$$ATC_n = (\text{Transmission ARR} \times CC_n) \div SCC \div 12$$

Where,

ATC_n = annual transmission charges payable by the nth long-term user or medium-term user of the transmission system;

Transmission ARR = Aggregate Revenue Requirement of the Transmission Licensee, determined in accordance with Regulation 68 of these Regulations;

CC_n = capacity contracted in MW by the nth long-term user or medium-term user of the transmission system;

SCC = sum of capacities contracted in MW by all long-term users and medium-term users of the transmission system:

Provided that the ATC_n shall be payable on monthly basis by each long-term user or medium-term user of the transmission system and shall be collected by the State Transmission Utility (STU).

24. The Petitioner has submitted that the installed generation capacity of DVC as on April' 2017 is 7787.2 MW, comprising 7640 MW of Thermal and 147.2 MW of Hydro capacity.

Thermal Power Stations			
Bokaro	BTPS	3 x 210 + 1 x 500 MW	1130 MW
Chandrapura	CTPS	2 x 130 + 2 x 250 MW	760 MW
Durgapur	DTPS	1 x 210 MW	210 MW
Durgapur (Steel)	DSTPS	2 x 500 MW	1000 MW
Koderma	KTPS	2 x 500 MW	1000 MW
Mejia	MTPS	4 x 210 + 2 x 250 + 2 x 500 MW	2340 MW
Raghunathpur	RTPS	2 x 600 MW	1200 MW
Hydro Power Stations			
Maithon		2x 20 + 1 x 23.2 MW	63.2 MW
Panchet		2x40MW	80 MW
Tilaiya		2x2 MW	4 MW
Total			7787.2MW

25. Of this, 4700 MW is connected at 400 kV level to the CTU network are as under:

Bokaro	BTPS	1 x 500 MW	500 MW
Durgapur (Steel)	DSTPS	2 x 500 MW	1000 MW
Koderma	KTPS	2 x 500 MW	1000 MW
Mejia	MTPS	2 x 500 MW	1000 MW
Raghunathpur	RTPS	2 x 600 MW	1200 MW

26. Further, the Petitioner vide letter dated 30.8.2017 has submitted that since one unit of CTPS and two units of BTPS have been de-commissioned , the generating capacity including hydropower of DVC has been reduced to 7237.2 MW. The Petitioner also informed that the 220 kV and 132 kV grid is required to handle around 2900 MW of DVC's generation plus net tie flow (import) to the DVC grid through various tie lines & ICT injection of KTPS & BTPS in order to cater to the demand of the firm consumers.

27. Vide RoP dated 25.07.2018, the Petitioner was directed to provide details of Total Contracted Capacities, including all Long term and Medium term open access users of DVC and category-wise contracted demand at various voltage levels and own and tied up generation of DVC. The Petitioner vide its affidavit dated 30.08.2018 has submitted that Total Contracted demand for the financial years 2017-18 and 2018-19 is 3658.82 MW and 3705.42 MW respectively.

28. Perusal of the data submitted by NLDC for PoC calculation reveals that the Approved Injection/ Withdrawal from DVC during the years 2017-18 and 2018-19 is 450 MW and 500 MW, respectively and the same has been considered by us as LTA from embedded generation of DVC selling outside DVC command area. It is assumed that the LTA is from embedded generation of DVC and not from generator that is connected to CTU network.

29. Based on aforesaid observations, we have adopted the following formula to arrive at the transmission/ wheeling charges for DVC T&D network in case of both Long/Medium-Term and Short-Term customers. The formula for Short term

Customers is inline with methodology followed while determining STOA rates for ISTS.

(i) Charges for Long/Medium Term customers:

$$\begin{aligned} &\text{“Transmission Charges (Rs/MW/month)} \\ &= ((\text{Transmission ARR} \div \text{SCC}) \div 12) \end{aligned}$$

(ii) Charges for Short-Term customers :

$$\begin{aligned} &\text{“Transmission Charges (paise/kWh)} \\ &= ((\text{Transmission ARR} \div \text{SCC}) \div (365*24*10)) \end{aligned}$$

Where,

SCC is sum of contracted demand of DVC and capacities contracted in MW by all long-term users and medium-term users of the transmission system.

ARR is Annual Revenue Requirement i.e Annual Transmisison Charges in Rs.”

30. The above formulae will be used to determine the Transmission/ Wheeling charge for the financial years 2017-18 and 2018-19 only. Further, a power factor of 0.97 has been considered to convert the MVA contracted capacity to MW contracted capacity. Since, the annual transmission charges of DVC forthe financial years 2017-18 and 2018-19 are not availableas the tariff of T&D network of DVC for the period 2014-19 is yet to be determined,we have considered the most recent data of annual transmission charges available for DVC based on trued up values for 2013-14 towards determination of transmission charges/wheeling charges.

31. The total contracted demand which is being catered by the DVC T&D system is equivalent to sum of its own contracted demand, contracted capacities by MTOA users and LTA for beneficiaries outside DVC control area utilizing its T&D system. The Total Contracted Capacity for the financial years 2017-18 and 2018-19 shall be 4074 MW and 4169 MW, respectively and the Transmission/wheeling Charges for Long/Medium-Term and Short-Term rates are determined as under:

S.No	Particulars	Formula	Financial Year 2017-18	Financial Year 2018-19
a	Own contracted demand (MVA)	-	3658.82	3705.42
b	Own contracted demand considering power factor of 0.97 (MW)	=a*0.97	3549	3594
c	MTOA Contracted Capacity (MW)	-	75	75
d	LTA Sell (MW)	-	450	500
e	Total Contracted Capacity of DVC (MW)	=(b+c+d)	4074	4169
f	Annual Transmission charges (trued up) during 2013-14 (Rs. lakhs)	-	52479.37	52479.37
g	Approved Long/Medium-Term rate in (Rs. lakh/MW/month)	(f/e)/12	1.073	1.049
h	Approved Short-Term Rate in (paisa/kWh)	=(f/e)*10000/(365*24)	14.7	14.37

32. In the second prayer, the Petitioner has prayed to authorize to raise bills on the open access customers as per the transmission charges/wheeling charges determined by the Commission. We have considered the submissions of the Petitioner. As per the above table, the open access customers seeking power through the DVC network will pay the open access charges/transmission and wheeling charges at the approved rates. Since, Annual Transmission Charges for financial years 2017-18 and 2018-19 of the Petitioner's transmission system have not been determined yet, the charges have been calculated as per approved ARR

for 2013. However, these charges are subject to revision as and when tariff for 2014-19 period is determined by the Commission.

33. It is noted that vide order dated 10.10.2017, the Commission had, while disposing of petition No. 386/TT/2014 directed DVC to file a revised petition for determination of transmission tariff for 2014-19 period. DVC has filed petition no. 150/TT/2018 in this regard which is pending for disposal.

34. Petition No. 153/MP/2017 is disposed of in terms of above.

sd/-

(Dr. M.K. Iyer)
Member

sd/-

(P.K.Pujari)
Chairperson