Ref. No. MERC/FAC/2023-24/307 **Date: 26 June, 2023**

To,
The Managing Director
Tata Power Company Ltd.
Dharavi Receiving Station
New Shalimar Industrial Estate
Matunga, Mumbai – 400 019

Subject: Prior Approval of Fuel Adjustment Charges (FAC) submission of TPC-D for the month of January, 2023.

Reference: 1. TPC-D's FAC submission dated 15 February, 2023 for prior approval of FAC for the month of January, 2023.

2. Data gaps communicated to TPC-D vide email dated 03 April, 2023.

3.TPC-D's response to data gaps on 13 April, 2023, 06 May, 2023 and 19 May, 2023 respectively.

Sir,

Upon vetting the FAC calculations for the month of January, 2023 as mentioned in the above reference, the Commission has accorded approval for FAC amount of **Rs. 78.41 Crore.** As FY 2022-23 is already over and Provisional Truing-up of FY 2022-23 has also been done by the Commission in the recent MTR Order dated 31 March, 2023, the revised power purchase cost resulting in FAC is already adjusted in the said MTR Order. Accordingly, the FAC chargeable to consumers is as shown in the table below:

Month	FAC Amount (Rs. Crore)
January, 2023	**0 (Zero)**

*FAC already allowed to be recovered as approved in FAC approval dated 28.11.2022 for the period from May 2022 to July 2022 for recovery in four months period between December 2022 to March 2023.

Yours faithfully,

Rue.
(Dr. Prafulla Varhade)
Director (Elect.Engg), MERC

Enclosed: Annexure A: Detailed Vetting Report for the month of January, 2023.

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, कुलाबा, मुंबई - ४०० ००५.
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ANNEXURE A

Detailed Vetting Report
Date: 26 June, 2023

PRIOR APPROVAL FOR FAC CHARGES FOR THE MONTH OF JANUARY, 2023

Subject: Prior Approval of Fuel Adjustment Charges (FAC) submission of TPC-D for the month of January, 2023.

Reference: TPC-D's FAC submission dated 15 February, 2023, 13 April, 2023 , 6 May, 2023 and 19 May 2023 for prior approval of FAC for the month of January, 2023.

1. FAC submission by TPC-D:

TPC-D has submitted FAC submissions for the month of January, 2023 as referred above. Upon vetting the FAC calculations, taking cognizance of all the submissions furnished by TPC-D against the data gaps issued, the Commission has accorded prior approval to TPC-D for FAC amount of Rs. 78.41 Crore for the month of January, 2023. The approved FAC amount is adjusted at the time of Provisional Truing-up of FY 2022-23 in the MTR Order dated 31 March, 2023.

2. Background

2.1 On 30 March, 2020, the Commission has issued Tariff Order for TPC-D, (Case No .326 of 2019) for True-up of FY 2017-18 and FY 2018-19, provisional Truing-up for FY 2019-20, and Aggregate Revenue Requirement and Tariff for FY 2020-21 to FY 2024-25. Revised Tariff has been made applicable from 1 April, 2020.

2.2 In the Tariff Order, the Commission has stipulated methodology of levying FAC as follows:

"6.7.15 Stabilising variation in consumer bill on account of FAC

………………

Therefore, using its powers for Removing Difficulty under Regulation 106 of the MYT Regulations, 2019, the Commission is making following changes in the FAC mechanism specified under Regulation 10 of the MYT Regulations, 2019:

a. Distribution Licensee shall undertake computation of monthly FAC as per Regulation 10 of the MYT Regulations, 2019 except for treatment to be given to negative FAC as follows:

(i) Negative FAC amount shall be carried forward to the next FAC billing cycle with holding cost;

(ii) Such carried forward negative FAC shall be adjusted against FAC amount for the next month and balance negative amount shall be carried forward to subsequent month with holding cost;

(iii) Such carry forward of negative FAC shall be continued till the accumulated negative FAC becomes 20% of monthly tariff revenue approved by the Commission in Tariff Order. In case of TPC-D, such limit shall be Rs. 50 crore. Any accumulated amount above such limit shall be refunded to consumers through FAC mechanism;

(iv) In case such FAC Fund is yet to be generated or such generated fund is not sufficient to adjust against FAC computed for given month, then Distribution Licensee can levy such amount to the consumers through FAC mechanism.

In order to maintain transparency in management and use of such FAC Fund, the Distribution Licensee shall maintain monthly account of such FAC fund and upload it on its website for information of stakeholders. Further, till date, the Distribution Licensees have been levying FAC up to the prescribed limit of 20% of variable component of tariff without prior approval in accordance with the MYT Regulations, 2015, and submitting the FAC computations on a quarterly basis within 60 days of the close of each quarter, for post facto approval. However, as the Commission has created a FAC fund as stated above to address the increase in fuel prices and power purchase costs, the Commission has modified the FAC mechanism such that the Distribution Licensees shall submit the FAC computations on a monthly basis for prior approval, irrespective of whether FAC is chargeable in a month or whether some amount is accruing to the Fund on account of negative FAC. This will ensure that the FAC mechanism is implemented with the changes as desired by the Commission, and the consumers are not levied FAC without prior approval.

The details of the FAC as per the Regulations, shall be submitted by the 15th of the every month prior to the month in which the FAC is proposed to be levied and the Commission will endeavour to decide on the same within 10 days so that the same can be levied from the 1st of the subsequent month. This prior approval will facilitate the addressing of any difficulties that may arise in giving effect to this fund. All the details will be submitted by the Distribution Licensee as is being done for approval of FAC on post facto basis. Thus, the FAC to the consumers shall now be levied with prior approval of the Commission"

2.3 Vide its letter dated 20 April, 2020, the Commission communicated the excel formats along with the checklist to file FAC submissions for prior approval to all Distribution Licensees. The Commission also directed all Distribution Licensees to file FAC submissions by 15th of every month prior to the month for which the FAC is proposed to be levied for prior approval.

2.4 Accordingly, TPC-D has filed FAC submissions for the month of January, 2023 for prior approval. The Commission has scrutinized the submissions provided by TPC-D and has also verified the fuel and power purchase bills provided along with its submissions.

3. Energy Sales of the Licensee

3.1 The net energy sales within licence area as submitted by TPC-D in the FAC submission and as approved by the Commission are as shown in the table below:

Consumer Category	Approved by the Commission* (MU)	Monthly Approved* (MU)	Actual Sales* January 2023 (MU)
	(I)	(II=I/12)	(III)
EHV – Industry	214.59	17.88	65.55
HT I - Industry	929.80	77.48	80.97
EHV- Commercial	106.22	8.85	8.11
HT II - Commercial	389.69	32.47	22.42
HT III - Group Housing Society (Residential)	10.58	0.88	3.04
HT IV – Railways/Metro/Monorail			
22/33 kV	70.61	5.88	7.45
HT V - Public Services			
a) Govt. Edu. Inst. & Hospitals	14.04	1.17	1.10
b) Others	219.79	18.32	10.36
HT VIII – EV Charging Stations			1.28
LT I (A)- Residential (BPL)	0.00	0.00	0.00
LT I (B)- Residential	2032.59	169.38	133.66
LT II - LT Commercial			
(A)- upto 20 kW	260.96	21.75	13.05
(B) >20 kW and <50 kW	139.94	11.66	6.18
(C) - 50 kW	370.85	30.90	23.88
LT III (A) - Industry < 20 kW	27.31	2.28	2.88
LT III (B) - Industry > 20 kW	206.28	17.19	16.98
LT IV - Public Services			
a) Govt. Edu. Inst. & Hospitals	29.87	2.49	0.42
b) Others	8.39	0.70	2.02
LT V - EV Charging Stations	0.10	0.01	0.15
Total	**5031.61**	**419.30**	**399.49**

** - Approved and Actual Sales includes the direct sales and changeover sales of TPC-D*

**- In Case of TPC-D, the sales is approved on annual basis. Monthly approved sales is derived based on approved annual sales for comparison purpose.*

3.2 **It is observed that the total sales for January, 2023 is 399.49 MU which is 4.72% lower than approved monthly sales of 419.30 MU.** With respect to overall consumption of TPC-D, HT category consumption of 200.28 MU is on a higher side by 22.91% as compared to approved monthly HT energy sales of 162.94 MU and the LT sales of 199.21 MU are lower by 22.29% than approved sales of 256.36 MU. The overall sales are higher due to higher demand is observed in EHV and HT Industrial and HT Group Housing Society Category whereas in LT I- Residential, LT-II Commercial and LT IV-A Public Services consumption dips down due to seasonal variation.

3.3 The comparison of estimated sales and sales based on actual meter reading for the month of January 23 is as given below:

Particulars	Actual – MU	Estimated - MU	Total	% sales based on Estimated Reading
January-23	399.26	0.23	399.49	0.06%

It is observed that the assessed sales percentage is marginal at 0.06% in January, 23.

3.4 Further, comparison of sales for January, 23 as compared to last year is as shown below:

Particulars	LT - Residential (MU)	LT Others (MU)	HT (MU)	Total (MU)
Apr-21	189.42	54.20	144.05	387.67
Apr-22	192.93	77.89	221.54	492.36
May-21	200.72	49.95	137.77	388.44
May-22	213.89	82.30	225.12	521.31
June-21	190.84	52.00	142.39	385.23
June-22	212.84	79.26	213.79	505.89
July-21	169.41	56.51	155.57	381.49
July-22	165.02	73.88	209.44	448.34
August-21	165.06	58.24	162.11	385.41
August-22	166.09	73.85	217.86	457.80
September-21	156.41	59.33	178.26	394.00
September-22	167.72	73.65	211.04	452.42
October-21	166.20	66.52	200.92	433.64
October-22	163.16	73.18	210.10	446.45
November-21	173.10	65.00	208.17	446.27
November-22	155.12	70.30	204.06	429.49
December-21	146.89	62.75	185.66	395.30
December-22	146.92	72.37	213.41	432.70
January-22	120.63	54.75	181.82	357.21
January-23	133.66	65.56	200.28	399.49
April 21 – January 22	**1678.68**	**579.24**	**1696.72**	**3954.65**

April 22 - January 23	**1717.35**	**742.24**	**2126.64**	**4586.23**

The Commission observes that overall sales across all categories are higher than last year.

4. **Power Purchase Details**

4.1 The Commission has approved following sources in the Tariff Order for power purchase by TPC-D.

a) Tata Power Company Ltd. (TPC-G)
b) Renewable Energy (Solar and Non-Solar)
c) Short Term Sources (Power Exchange).

In addition to the aforesaid, there may be some variation in real time which will be settled through Deviation Settlement Mechanism approved by the Commission.

4.2 Summary of Power Purchase for TPC-D is as follows:

<table>
<tr><th>Sr. No.</th><th>Particular</th><th>Compliance</th></tr>
<tr><td>1</td><td>Sources of approved Power Purchase</td><td>TPC-D has purchased power from approved sources.</td></tr>
<tr><td>2</td><td>Merit Order Dispatch</td><td>TPC-D has followed merit order for scheduling of power and preference was given to cheapest power.</td></tr>
<tr><td>3</td><td>Fuel Utilization Plan</td><td>Existing contracts expired in July 2020. TPC-G has entered into new coal contracts for 2.2 MT for 2 years further extendable by 2 years as per directions of the Commission in TPC-G MYT Order through Competitive Bidding. Further, APM Gas Contract with GAIL has been for the period 7 July, 2021 to 6 July, 2026.</td></tr>
<tr><td>4</td><td>Deviation Quantum</td><td>TPC-D has overdrawn 2.90 MU as compared to the Schedule.</td></tr>
<tr><td>5</td><td>Sale of Surplus Power</td><td>TPC-D has sold 13.27 MU at Rs. 9.87/kWh thereby benefitting its consumers.</td></tr>
<tr><td>6</td><td>Power Purchase</td><td>Actual Power Purchase is 404.04 MU as against approved quantum of 435.78 MU.</td></tr>
<tr><td>7</td><td>Source wise Power Purchase</td><td>
<table>
<tr><th>Source Name</th><th>Approved (MU)</th><th>Actual (MU)</th><th>Proportion of each Source in Actual Purchase</th></tr>
<tr><td>TPC-G</td><td>314.46</td><td>213.49</td><td>52.84%</td></tr>
<tr><td>RE Sources</td><td>73.44</td><td>90.85</td><td>22.48%</td></tr>
<tr><td>Short</td><td>47.89</td><td>110.07</td><td>27.24%</td></tr>
</table>
</td></tr>
</table>

Sr. No.	Particular	Compliance
		Term / Deviation & Sale: -, (10.37), -2.57% / Total: 435.78, 404.04, 100%
8	Power Purchase: Section 62 of Electricity Act, 2003	As part of verification of fixed cost claimed by TPC-D, the same has been verified from the TPC MYT Order in Case No. 326 of 2019. As part of verification of energy charges claimed by TPC-D, verification of operational parameters, fuel cost, GCV etc. vis-à-vis the MYT Order/Tariff Regulations is carried out.
9	RE Purchase	Solar Cost and Solar MU verified as per Invoice. Non-Solar MU considered as submitted by TPC-D based on the meter reading data/scheduled energy (bilateral purchase) with a direction to submit invoice in next FAC submission.
10	Short Term Power Purchase	Short-term power purchase by TPC-D has been verified from the invoices of January, 2023 submitted by TPC-D.

4.3 **TPC-D has purchased power of 404.04 MU as against approved 435.78 MU from the sources approved by the Commission.**

The following table show the variation in average power purchase cost (Rs/kWh) for the month of January, 2023 submitted by TPC-D as compared to average power purchase cost approved in Tariff Order:

Particulars	Tariff Order Dated 30.03.2020 FY 2022-23 Approved			Actual for January, 2023		
	Net Purchase – Monthly*	Cost – Monthly	Average Power Purchase Cost	Net Purchase	Cost	Average Power Purchase Cost
	MU	Rs. Crore	Rs/kWh	MU	Rs. Crore	Rs/kWh
TPC-G	314.46	143.34	4.56	213.49	173.04	8.11
RE Sources	73.44	26.89	3.66	90.85	28.94	3.19
Short Term	47.89	17.04	3.56	110.07	55.46	5.04
Deviation Quantum and Cost	-	-	-	2.90	1.03	3.55
Sale of Power	-	-	-	(13.27)	(13.10)	9.87
Total	**435.78**	**187.27**	**4.30**	**404.04**	**245.37**	**6.07**

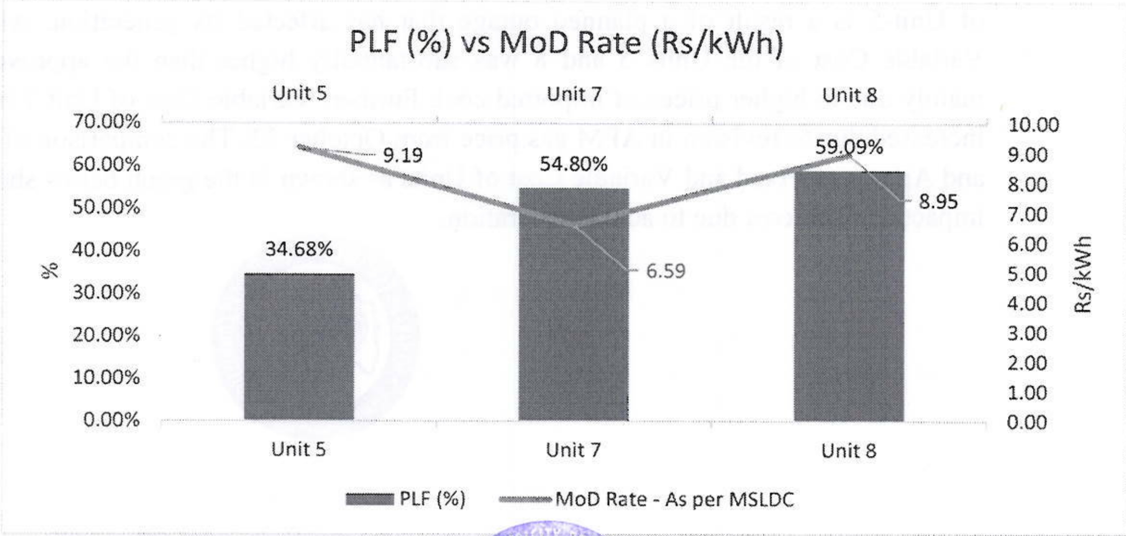
** Although, power purchase quantum is not approved on monthly basis, the monthly quantum is arrived at based on yearly approved quantum and shown for comparison purpose only*

5. Power Purchase Cost

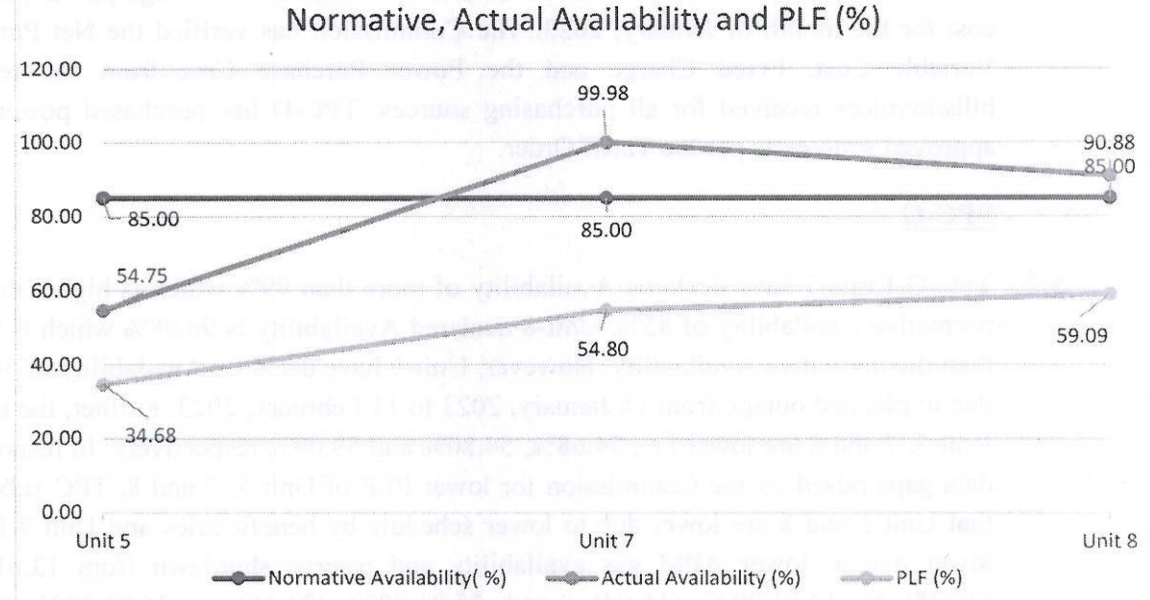
5.1 The Commission has sought detailed bills/invoices for all of the power purchase sources in order to verify the claim of TPC-D with regards to average power purchase cost for the month of January, 2023. The Commission has verified the Net Purchase, Variable Cost, Fixed Charge and the Power Purchase Cost from the relevant bills/invoices received for all purchasing sources. TPC-D has purchased power from approved sources as per the Tariff Order.

TPC-G

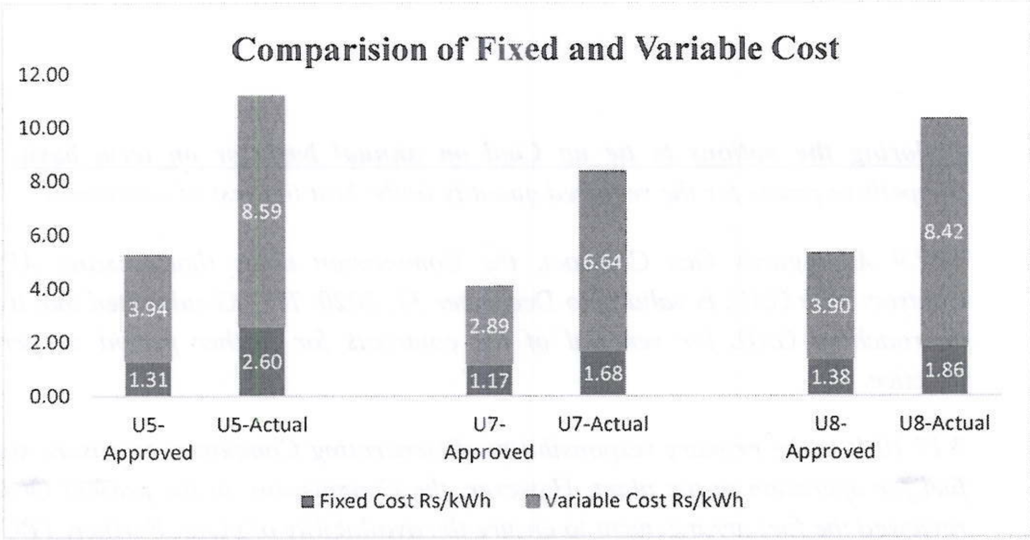
5.2 TPC-G Units 7 have declared Availability of more than 99% which is higher than the normative Availability of 85%. Unit-8 declared Availability is 90.88% which is higher than the normative Availability. However, Unit-5 have declared Availability of 54.75% due to planned outage from 18 January, 2023 to 11 February, 2023. Further, the PLF of Unit 5, 7 and 8 are lower i.e., 34.68%, 54.80% and 59.09% respectively. In response to data gaps raised by the Commission for lower PLF of Unit 5, 7 and 8, TPC submitted that Unit 5 and 8 are lower due to lower schedule by beneficiaries and Unit 7 PLF is lower due to lower APM gas availability and reserve shutdown from 13.01.2023 (21:28) to 14.01.2023 (15:04) and 25.01.2023 (23:15) to 26.01.2023 (20:30) respectively. TPC further submitted that BEST & TPC-D have taken the decision to avoid RLNG consumption in Unit-7 and to schedule power from Unit-7 on APM only to protect consumer's interest with a reasonable and competitive tariff. Further, BEST and TPC-D had provided consent to schedule power from Unit-7 only on APM. The Commission notes the submission of TPC. The graph showing the comparison of Variable Cost in MoD Stack and monthly PLF for TPC-G thermal/gas units is given below:



The graphical comparison of normative availability and actual availability for the month of January, 2023 is as given below:



The entire monthly fixed cost was payable in line with MYT Regulations, 2019 as the cumulative plant availability of Unit 5, 7 and 8 were higher than the normative availability of 85%. It is observed that Unit 7 has lower PLF and lower generation resulting in higher fixed cost per unit than approved by the Commission. The lower PLF of Unit-5 is a result of a planned outage that has affected its generation. Also, the Variable Cost of the Units 5 and 8 was substantially higher than the approved cost mainly due to higher prices of imported coal. Further, Variable Cost of Unit 7 has also increased due to revision in APM gas price from October 22. The comparison of Actual and Approved Fixed and Variable Cost of Units as shown in the graph below shows the impact of fixed cost due to actual generation.



5.3 The Availability of TPC-G units as compared to last year is as given below:

TPC-G Units	Availability – January 2023	Availability – January 2022
Unit 5	54.75%	87.75%
Unit 7	99.98%	99.82%
Unit 8	90.88%	100%

5.4 The Commission has observed that **TPC-D has purchased 213.49 MU from TPC-G as against monthly approved quantum of 314.46 MU.** TPC-D has purchased 55.44 MU of hydro power which is lower than the approved quantum of 59.17 MU, whereas balance quantum of 158.05 MU is purchased from TPC-G Unit 5, 7 and 8 as against approved quantum of 187.31 MU. Further, the Commission has verified that the payment of Fixed Charges for all the Thermal/Gas Units as well as Hydro Units have been worked out based on the cumulative availability as per the provisions of MYT Regulations, 2019.

5.5 The Commission in its Order dated 30 March, 2020 in Case No 300 of 2019 in respect of Fuel Utilisation Plan of TPC-G as held as follows:

*"7.17.7 Regarding the imported coal, it is submitted that Thermal Generating Station at Trombay needs ultra-low sulphur, low ash and Mid GCV coal to adhere with the stringent environment norms. **Since, PPAs were not finalised during the year 2019 and there was uncertainty with respect to future tie-ups, the coal tie-ups were done only for a period of one year.** The long term contract with Adaro is valid till 2020. Also, annual contract with Kideco and with Avra are valid upto July 31, 2020.*

*7.17.8 Regarding further fuel arrangement, **the Commission notes the TPC-G's submission that, existing PPAs are valid till March 31, 2024 and hence, it is***

*<u>**exploring the options to tie up Coal on annual basis or on term basis**</u>, to get competitive prices for the required quantity in the best interest of consumers.*

7.17.9 As regards Gas Contract, the Commission notes that existing APM gas Contract with GAIL is valid upto December 31, 2020. TPC-G submitted that it will be approaching GAIL for renewal of the contracts for further period as per usual practice.

*7.17.10 It is the primary responsibility of Generating Companies to ensure supply of fuel for operation of the plant. However, the Commission, in the present Order, has reviewed the fuel arrangement to ensure the availability of plant. Further, TPC-G has tied up its capacity with BEST and TPC-D, which are supplying power to Consumers in Mumbai city. **The Commission notes that TPC-G has entered into Fuel Supply arrangement for shorter period in view of uncertainty of PPAs. The existing Coal contracts are valid upto July & August 2020 and Gas Contract upto December 2020. There is limited time available for entering into Fuel Supply contract. Hence, the Commission directs TPC-G to enter into fuel supply contracts or arrangement so as to ensure the supply of fuel till the validity of PPA, i.e., upto March 31, 2024 through transparent process of Competitive Bidding**. Further, TPC-G is directed to submit its Status report, on arrangement of Fuel Supply for future period, to the Commission within three (3) months from the date of this Order."*

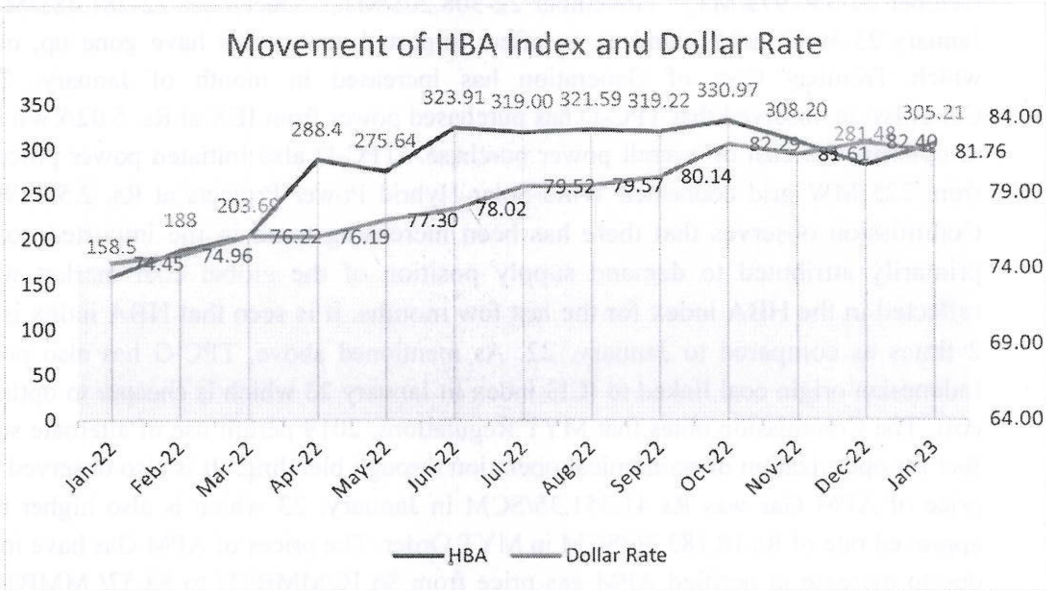
5.6 TPC-G's existing contracts for coal purchase expired in July 2020. Vide its letter dated 8 July, 2020, TPC-G informed that it has entered into coal contracts for 2.2 Million MT for two years from 1 August, 2020 onwards and further extendable by two years through competitive bidding. The Commission notes that the purchase of coal has been from the contracts entered into by TPC-G. The existing contracts which were approved by the Commission in the MYT Order as part of Fuel Utilisation Plan have expired and new contract have been entered through Competitive Bidding. Accordingly, the new contracts for purchase of imported coal will now be considered as part of Fuel Utilisation Plan. TPC-D has also signed contract with GAIL for supply of APM Gas for the period 7 July, 2021 to 6 July, 2026. It is observed that TPC-G has entered into contract to procure Indonesian origin coal with coal specifications similar to TPC-G's long term contracted coal, with price linked to ICI3 index and the same offers significant cost advantage over HBA pricing.

5.7 **The APPC for TPC-G, which generates power on Imported Coal, Domestic Natural Gas (under APM mechanism), Oil (LSHS), imported RLNG and hydro has been worked out at Rs. 8.11/ kWh as against the approved rate of Rs. 4.56/kWh.**

5.8 **The landed cost of coal for energy charge computation as claimed by TPC-G is Rs 14,189.25/MT as compared to approved rate of Rs. 7,114.30/MT. It can be seen that the actual landed price is higher as compared to approved rate in the Tariff Order**. In response to query raised by the Commission in respect of higher rate of TPC-

G, TPC-D submitted that TPC-G's thermal power plant at Trombay is operated with 100% Indonesian coal. The price of this coal is based on HBA Index, which is internationally accepted and since few months, HBA Index has gone up substantially (e.g. HBA Index for October'22-330.97$/MT, November'22-308.20$/MT, December'22-281.48$/MT and January'23-305.21$/MT) and as an effect imported coal prices have gone up, owing to which Trombay Cost of Generation has increased in month of January, 23. The Commission observed that TPC-D has purchased power from IEX at Rs. 5.02/kWh in order to optimise the cost of overall power purchase. TPC-D also initiated power procurement from 225 MW grid connected Wind-Solar Hybrid Power Projects at Rs. 2.59/kWh. The Commission observes that there has been increasing trend in the imported coal price primarily attributed to demand supply position of the global coal market which is reflected in the HBA index for the last few months. It is seen that HBA index is almost 2 times as compared to January, 22. As mentioned above, TPC-G has also purchased Indonesian origin coal linked to ICI3 index in January 23 which is cheaper to optimise the cost. The Commission notes that MYT Regulations, 2019 permit use of alternate source of fuel for optimization of economical operation through blending. It is also observed that the price of APM Gas was Rs 41,351.35/SCM in January, 23 which is also higher than the approved rate of Rs.18,183.36/SCM in MYT Order. The prices of APM Gas have increased due to increase in notified APM gas price from $6.10/MMBTU to $8.57/ MMBTU from October 22 by Ministry of Petroleum and Natural Gas, Government of India.

5.9 TPC-G mainly procures imported coal from Indonesian market. As per the Contract, the coal reference price is HBA index i.e., Harga Batubara Acuan for Indonesian coal which is set by Ministry of Energy and Mineral Resources (Indonesia). The Commission has sought for prevailing HBA index during the aforesaid period along with the detailed computation of FOB price at which the coal has been procured by TPC-G. The graph below shows the trend of HBA index which is considered by TPC-G for energy charge calculations. It can be observed that the HBA index has witnessed substantial increase from January, 2022 onwards. HBA index slightly increased from 281.48$/MT to 305.21$/MT in January 23. Also, the Dollar Exchange rate has witnessed a slight decrease in January 2023 as compared to December 2022.



* - HBA indices at 6,322 kcal/kg GAR coal with 8% total moisture, 15% ash as received and 0.8% sulphur

$ - Dollar Rate source - www.x-rates.com (Average rate for the month for representation purpose and may not be a reference rate at which Coal is procured)

5.10 The Commission has also sought coal purchase bills considered for January, 2023. The Commission has scrutinised the bills submitted and computed the purchase price of coal for the month of January, 2023 as shown in Table below:

Date	Invoice QTY	GCV	Invoice Rate	Coal Cost	Freight Rate	BF Correction	Freight Payable	Total Coal Cost	
	MT	kcal/kg	$/MT	$	$/MT	$/MT	$	$	$/MT
a	B	c	f	g	h	i	j	k	l
15-Dec-22	45,000.00	4756	169.62	7632900	14.65	0.44	679050	8311950	184.71
31-Dec-22	60,000.00	4645	160.70	9642000	14.65	0.67	919200	10561200	176.02
09-Jan-23	66,000.00	4652	113.78	7509480	14.65	0.35	990000	8499480	128.78
Total	**171000**	**4677**	**144.94**	**24784380**	**14.65**	**0.49**	**2588250**	**27372630**	**160.07**

5.11 TPC-D has submitted the detailed coal computation for the coal purchase considered in January, 2023 and also the reconciliation of coal cost considered in Form F12 along with each coal invoice. The coal cost is arrived on the basis of Goods Receipt Note (GRN) in the SAP system which is dependent on the rate of coal purchase (in Rs./MT or USD/MT) considered at the time of coal order (PO) booking. However, the coal cost mentioned in the coal invoice is as per the base price of coal purchase (in Rs./MT or USD/MT) arrived on the basis of actual gross calorific value, Moisture content, Ash content, Sulphur content, HBA indices etc. Once the invoice is booked in the SAP system after GRN of full coal quantity of a shipment, the cost as per coal invoice gets booked against each shipment in the SAP system in order to make payment to the supplier. To facilitate this, the difference between coal cost in Goods Receipt Note (GRN) and coal cost in the invoice is booked as adjustment entry in the SAP. Hence, the coal inventory gets valued ultimately at the invoice values and at the coal purchase rate (in Rs. /MT or USD/MT) prevailing on the date of billing.

5.12 Further, as the coal purchase during a month is generally not utilised in the same month, hence, there is a variation in above computed coal price vis-à-vis coal price as considered by TPC-G for energy charge calculations. The cost of coal for energy charge computation pertains to coal consumed during the respective months which is arrived based on the actual cost of coal inventory as well as the purchased coal cost received in the coal yard.

5.13 From the Table above, the basic purchase cost of imported coal including freight during the month of January, 2023 as per bills submitted works out at USD 160.07 /MT. TPC-D has booked Rs. 13,837.42/MT (i.e., Rs. 12,500.80/MT for Coal and Rs. 1,336.62/MT for freight). Also, other coal handling charges such as insurance, handling and wharfage charges, taxes and duties, clean energy cess and other miscellaneous charges considered by TPC-D are in line with the average prices approved in the previous months and accordingly, the total landed cost of coal arrived is Rs. 15,391.37/MT. Accordingly, the break-up of the cost as submitted by TPC-D and as considered by the Commission against the procurement of coal for the month of January, 2023 is as given below:

Sr. No	Particular	Source / Formula	units	As Submitted – Coal Cost	As Approved – Coal Cost
1	Basic Coal cost + Freight in Rs.	1 X 2	Rs./MT	13,837.42	13,837.42
2	Excise + Custom Duty + CE Cess+ Insurance	AS submitted	Rs./MT	1,101.12	1,101.12
3	Handling and Wharfage	AS submitted	Rs./MT	674.49	674.49
4	Other Fuel Handling Charges	AS submitted	Rs./MT	671.51	671.51
5	Other Adjustment	AS submitted	Rs./MT	(893.16)	(893.16)
6	Total as per Form 12	Sum (3:7)	Rs./MT	**15,391.37**	**15,391.37**

5.14 Apart from above, the Commission has also sought for third party sampling report for GCV verifications. TPC-G has submitted the third-party sampling certificate for the respective period. The Commission has verified the document submitted and found to be in order. TPC-G has also considered the stacking loss as per norms approved by the Commission while computing the Energy Charges.

5.15 The Commission notes that TPC-D in Form 12 had considered coal consumption cost during the month based on usage of coal and not on weighted average of opening inventory and coal purchased during the month. The Commission in its FAC approval for the month of December, 2022 has already directed TPC-G that weighted average rate of computing coal cost should be followed by TPC-G as similar methodology is also being followed by other generators within the State and accordingly raise the FAC bill from April 2023 onwards as per the weighted average method of computation of coal cost as TPC-G would have already raised FAC bills for the month as per its existing methodology and that provisional truing-up of FY 2022-23 is already done by the Commission in the MTR Order dated 31 March, 2023.

5.16 It is observed that there is difference in coal cost considered in Form 11 and Form 12. TPC-D submitted that the difference in the cost is due to Foreign exchange variation due to difference in dollar rate at the time of booking of Purchase Order and the actual payment made to vendor and the employee cost. Accordingly, the coal consumption cost considered by the Commission as per Form 11 is as given below:

Particulars	Units	TPC Submission	As Approved
Form F12 - Coal Consumption Cost	Rs/MT	14,503.47	14,503.47
Foreign Exchange Rate Variation	Rs/MT	(367.56)	(367.56)
Employee Cost	Rs/MT	53.34	53.34
Form F11 - Coal Consumption Cost	Rs/MT	14,189.25	14,189.25

5.17 **In view of the above, the Commission has considered APPC of Rs 8.11/kWh as against approved rate of Rs. 4.56/kWh for power purchased from TPC-G for the month of January, 2023.**

5.18 Variation in power purchase expenses from TPC-G can be divided on account of change in quantum and per unit rate as follows:

Month	Increase in Expenses for power purchase from TPC-G (Rs. Crore)		
	On Account of change Quantum of Power Purchase	On Account of change in Per Unit rate of Power Purchase	Total
January 2023	(46.02)	75.72	29.70

Out of above, variation on account of increased per unit rate is only considered for FAC computation.

Renewable Sources

5.19 TPC-D has tied up non-solar generation (Wind) of 108 MW, 178.06 MW of solar and 225 MW Wind-Solar Hybrid to meet its Renewable Purchase Obligation. The Commission in the Tariff Order has approved the said purchase for non-solar and solar energy at average rate of Rs. 3.62/kWh, Rs. 3.72/kWh and 2.59/kWh respectively.

5.20 TPC-D had purchased non-Solar RE (12.76 MU) and Solar RE (78.09 MU) power during the month of January, 2023. TPC-D has purchased solar energy from its long-term contracts (78.09 MU). It has submitted invoices for solar energy purchase of 36.26 MU and the said solar purchase is considered as per invoice submitted by TPC-D. Further, TPC-D has started procurement of wind-solar hybrid power from 225 MW project, it has purchased 41.83 MU of solar power at Rs. 2.59/kWh. Accordingly, the total purchase of 78.09 MU at the rate of Rs 3.15/kWh is considered by the Commission in FAC computation. In respect of non-solar, TPC-D has submitted that it is yet to receive credit notes (invoices) for the wind power procured from various generators during January, 2023 and accordingly wind power purchase has been considered based on the monthly meter reading data (6.15 MU) at rate of Rs. 4.82/kWh and it has also purchased 1.45 MU of wind power at Rs. 2.52/kWh in bilateral market from M/s Kreate Energy (I) Pvt Ltd.. Further, TPC-D has procured wind power from its wind-solar hybrid power from 225 MW project, it has purchased 6.61 MU at Rs. 2.59/kWh. In response to query raised by the Commission in respect of bifurcation of units from hybrid plant between solar and non-solar, TPC-D submitted that solar plant of wind-solar hybrid project is located in Rajasthan and wind plant is located in Maharashtra. Further, the schedule available on MSLDC DSM portal is considered for solar plant and credit notes issued by MSEDCL are considered for wind plant for bifurcation of units between wind-solar hybrid. The Commission has considered the total non-solar energy of 12.76 MU at the rate of Rs 3.40/kWh as submitted by TPC-D. However, TPC-D is directed to submit the invoices of non-solar wind energy purchase during the FAC submission of next month for verification.

5.21 The Commission observes that TPC-D has purchased total 90.85 MU of RE power during the month of January, 2023. **The average power purchase cost from RE sources is Rs. 3.19/kWh as compared to approved rate of Rs. 3.66/kWh. Accordingly, the Commission has considered RE purchase as submitted by TPC-D.**

5.22 Variation in power purchase expenses from RE Sources can be divided on account of change in quantum and per unit rate as follows:

Month	Increase in Expenses for power purchase from RE Sources (Rs. Crore)		
	On Account of change Quantum of Power Purchase	On Account of change in Per Unit rate of Power Purchase	Total
January2023	6.37	(4.32)	2.05

Out of above, variation on account of increased per unit rate is only considered for FAC computation.

<u>Short Term Purchase</u>

5.23 With regards to short term purchase, **TPC-D has purchased 110.07 MU at average rate of Rs. 5.04/kWh as compared to approved rate of Rs. 3.56/kWh to meet its demand.**

5.24 TPC-D purchased 109.77 MU from Power Exchange at rate of Rs 5.02/kWh. In response to the query raised by the Commission in respect of short-term power purchased at Rs. 5.02/kWh which were higher than approved cost of Rs. 3.56/kWh. TPC-D submitted that monthly RTC landed rate discovered on power exchange (i.e., IEX) was Rs. 6.17/kWh due to which short-term procurement rate was higher than the approved rate. However, the prevalent rates were lower than the long-term tied-up capacity of TPC-D. To meet the shortfall during the peak hours and optimising the power purchase cost, TPC-D had purchased power from power exchange when the market rates were lower than cost of generation from TPC-G units.. The said purchase is verified from the invoice submitted by TPC-D. Accordingly, the Commission has considered the short-term purchase by TPC-D for the month of January 23.

5.25 In addition to the aforesaid, TPC-D has also purchased 0.30 MU of standby power from MSEDCL. In response to data gaps raised by the Commission, TPC-D submitted that invoice for standby power is yet to be received from MSEDCL. However, TPC-D has provisionally considered the rate as per costliest power purchased by MSEDCL for that duration. Accordingly, the Commission has considered the said purchase of 0.30 MU at Rs 0.36 Crore.

5.26 Variation in power purchase expenses from Short Term Sources can be divided on account of change in quantum and per unit rate as follows:

Month	Increase in Expenses for power purchase from Short Term (Rs. Crore)		
	On Account of change Quantum of Power Purchase	On Account of change in Per Unit rate of Power Purchase	Total
January 2023	22.13	16.30	38.42

Deviation Quantum and Cost

5.27 **It was observed that TPC-D has overdrawn 2.90 MU during the month of January, 2023.** The said deviation quantum is arrived after grossing up T<>D periphery quantum to G<>T periphery by considering the normative transmission loss of 3.18%. Accordingly, the deviation quantum (2.90 MU) and cost (Rs. 1.03 Crore) has been considered as per provisional weekly invoice raised by MSLDC for the period 1 January, 2023 to 31 January, 2023. Further, it is observed that TPC-G has not considered DSM and ADSM charges for calculation of energy charges as well as fixed charges. Also, TPC-D has considered only DSM charges and not considered ADSM charges for calculation of cost towards deviation quantum.

Sale of Power

5.28 **TPC-D has done sale of surplus power to the extent of 13.27 MU during the month at Rs. 9.87/kWh. With such a sale of power TPC-D has earned revenue of Rs. 13.10 Crore.** TPC-D has managed to sell the surplus power at a higher rate, thus lowering the APPC and benefitting the consumers. Hence, the Commission has considered the actual quantum and revenue against surplus sale.

Approved Cost of Power Purchase

5.29 In view of the above, the overall cost approved in the Tariff Order and actual for the month of January, 2023 considered by the Commission is as shown below:

Particulars	Source	Power Purchase Quantum (MU)	Fixed Cost (Rs. Crore)	Fixed Cost (Rs./kWh)	Variable Cost (Rs. Crore)	Variable Cost (Rs. /kWh)	Total Cost (Rs. Crore)	APPC (Rs. /kWh)
TPC-G	Approved	314.46	39.46	1.25	103.89	3.30	143.34	4.56
	Actual	213.49	40.25	1.89	133.17	6.24	173.04	8.11
Renewable including REC	Approved	73.44	-	-	26.89	3.66	26.89	3.66
	Actual	90.85		-	28.94	3.19	28.94	3.19
Short Term	Approved	47.89	-	-	17.04	3.56	17.04	3.56
	Actual	110.07		-	55.46	5.04	55.46	5.04
Deviation Quantum	Approved	-	-	-	-	-	-	-
	Actual	2.90			1.03	3.55	1.03	3.55
Sale of Surplus Power	Approved	-	-	-	-	-	-	-
	Actual	(13.27)		-	(13.10)	9.87	(13.10)	9.87
Total	**Approved**	**435.78**	**39.46**	**0.91**	**147.81**	**3.39**	**187.27**	**4.30**
	Actual	**404.04**	**40.25**	**1.00**	**205.50**	**5.09**	**245.37**	**6.07**

5.30 Considering the above, **the Commission allows the average power purchase cost of Rs. 6.07/kWh for the month of January, 2023 as shown in Table above. The variation in power purchase cost is mainly on account of higher cost of TPC-G and Short-term source, surplus sale and deviation quantum. The actual purchase for same month in FY 2021-22 i.e., January, 2022 was 381.57 MU and power purchase cost was Rs. 207.01 Crore with APPC of Rs. 5.43/kWh.**

6. FAC on account of fuel and power purchase cost (F)

6.1 The Commission has worked out the average power purchase cost for the month of January, 2023 as shown in above table. The same has been compared with the average power purchase cost approved by the Commission in Tariff Order dated 30 March, 2020 and accordingly arrived at differential per unit rate at which Z_{FAC} is to be passed on to the consumers.

6.2 The following table shows the Z_{FAC} worked out by the Commission on account of difference in fuel and power purchase cost for the month of January, 2023.

S. No.	Particulars	Units	January 2023
1	Average power purchase cost approved by the Commission	Rs./kWh	4.30
2	Actual average power purchase cost	Rs./kWh	6.073
3	Change in average power purchase cost (=2 -1)	Rs./kWh	1.78
4	Net Power Purchase	MU	404.04
5	**Change in fuel and power purchase cost (=3 x 4/10)**	**Rs. Crore**	71.74

7. Adjustment for over recovery/under recovery (B)

7.1 The adjustment for over recovery/under recovery, the adjustment factor to be added / reduced is as below:

S. No.	Particulars	Units	Jan-23
1.0	**Adjustment for over-recovery/under-recovery (B)**		
1.1	Incremental cost allowed to be recovered in Month n-4	Rs. Crore	47.68
1.2	Incremental cost in Month n-4 actually recovered in month n-2	Rs. Crore	40.97
1.3	(over-recovery)/under-recovery (= 1.1-1.2)	Rs. Crore	6.71
2.0	**Carried forward adjustment for over-recovery/under-recovery attributable to application of ceiling limit for previous month**	Rs. Crore	0.00
3.0	**Adjustment factor for over-recovery/under-recovery (1.3+2.0)**	**Rs. Crore**	**6.71**

7.2 TPC-D submitted FAC recovery of Rs 40.97 Crore for the month of November, 2022 as against approved amount of Rs 47.68 Crore. The adjustment for over recovery/under recovery has to be done for the (n-4) month as per provisions of MYT Regulations, 2019. Thus, the adjustment factor to be considered towards under recovery is Rs 6.71 Crore while computing the allowable FAC for January, 2023.

8. Carrying Cost for over recovery/under recovery (C)

8.1 The following table shows the interest rate and amount worked as carrying / holding cost for under/ over recovery for the month of January 2023:

S. No.	Particulars	Units	Jan-23
1	Adjustment factor for over-recovery/under-recovery	Rs. Crore	6.71
2	Interest rate	%	9.80%
3	**Carrying cost for over-recovery/under-recovery**	**Rs. Crore**	**0.05**

9. Disallowance due to excess Distribution Loss

9.1 Regulation 10.8 of MYT Regulations, 2019 provides for FAC amount to be reduced in case the actual distribution loss for the month exceeds the approved distribution loss. The relevant extract is reproduced as follows.

"10.8 The total Z_{FAC} recoverable as per the formula specified above shall be recovered from the actual sales in terms of "Rupees per kilowatt-hour":

Provided that, in case of unmetered consumers, the Z_{FAC} shall be recoverable based on estimated sales to such consumers, computed in accordance with such methodology as may be stipulated by the Commission:

Provided further that, where the actual annual sliding distribution losses of the Distribution Licensee exceed the level approved by the Commission, the amount of Z_{FAC} corresponding to the excess distribution losses (in kWh terms) shall be deducted from the total Z_{FAC} recoverable"

The following table provides the comparison of approved and actual distribution loss and disallowance due to excess distribution loss if any.

S. N	Particulars	Units	Approved in Tariff Order	January 2023- Actual	Actual Cumulative (January 2023)	Annual Sliding Distribution Loss (February 2022 to January 2023)
1	Net Energy Input at Distribution Voltage	MU	3584.02	237.69	2638.53	3098.22
2	TPC-D Retail Sales (excluding sales at 110/132 kV level)	MU	3547.46	239.90	2617.46	3060.48
3	Distribution Loss (1 - 2)	MU	36.56	-2.208	21.062	37.74
4	Distribution Loss as % of net energy input (3/1)	%	1.02%	-0.93%	0.80%	1.22%
5	Excess Distribution Loss = [Actual Distribution Loss (4) - Distribution loss approved] x Net Energy Input (1)	MU	-	-	-	0.47
6	**Disallowance of FAC due to excess Distribution Loss**	**Rs. Crore**	-	-	-	**0.09**

It is seen that standalone distribution loss for the month of January, 23 is -0.93 % which is negative and lower than the approved loss and cumulative loss up to January 2023 of

0.80% is marginally lower than approved loss i.e., 1.02%. In response to the query raised by the Commission pertaining to negative loss, TPC-D submitted that in monthly distribution loss computation, input energy is considered for calendar month and energy billed in the month (output energy) does not correspond to exact calendar month on account of billing cycle spread across consecutive months. However, such variations normalise when cumulative losses are considered for the year. It is observed that annual sliding distribution loss of 1.22% for February 22 to January 23 is higher than approved loss of 1.02%.

9.2 The Commission notes that estimated sales for the month of January, 2023 is only 0.06% of the total sales i.e. 0.23 MU. The comparison of Distribution Loss for January, 2023 as compared to previous years is as given below:

Particulars	FY2022-23	FY2021-22
Approved Loss	*1.02%*	*1.02%*
April	2.22%	1.08%
May	2.08%	2.60%
June	-1.20%	-0.52%
July	1.11%	1.55%
August	0.94%	0.65%
September	0.36%	0.54%
October	0.37%	2.62%
November	1.34%	-0.11%
December	1.39%	-0.66%
January	-0.93%	0.53%
Cumulative Upto January	**0.80%**	**0.85%**

9.3 **It is observed that annual sliding Distribution Loss of 1.22% is higher than the approved loss of 1.02%. Accordingly, the Commission has disallowed Rs 0.09 Crore towards excess Distribution Loss for the month of January, 2023.**

10. Summary of Allowable Z_{FAC}

10.1 The summary of the FAC amount as approved by the Commission for the month of January, 2023 is as shown in the Table below:

S. No.	Particulars	Units	January 2023 - As per TPC	January 2023– As Approved
1.0	**Calculation of Z_{FAC}**			
1.1	Change in cost of generation and power purchase attributable to Sales within the License Area (F)	Rs. Crore	71.74	71.74
1.2	Carrying cost for over-recovery/under-recovery (C)	Rs. Crore	0.00	0.05

1.3	Adjustment factor for over-recovery/under-recovery (B)	Rs. Crore	0.00	6.71
1.4	**Z_{FAC} = F+C+B**	Rs. Crore	71.74	78.50
2.0	**Calculation of Per Unit FAC**			
2.1	Energy Sales within the License Area	MU	399.49	399.49
2.2	Excess Distribution Loss	MU	0.47	0.47
2.3	Z_{FAC} per kWh	Rs./kWh	1.80	1.97
3.0	**Allowable FAC**			
3.1	FAC disallowed corresponding to excess Distribution Loss [(2.2 x 2.3)/10]	Rs. Crore	0.08	0.09
3.2	FAC allowable [1.4-3.1]	Rs. Crore	71.65	78.41
4.0	**Utilization of FAC Fund**			
4.1	Opening Balance of FAC Fund	Rs. Crore	1,061.10	0.00
4.2	Carrying Cost on FAC Fund	Rs. Crore	8.31	0.00
4.3	Z_{FAC} for the month (Sr. N. 3.2)	Rs. Crore	71.65	78.41
4.4	Closing Balance of FAC Fund	Rs. Crore	1104.44	78.41
4.5	Z_{FAC} leviable/refundable to consumer	Rs. Crore	1104.44	0.00
5.0	**Total FAC based on category wise and slab wise allowed to be recovered in the billing month of March 23**	**Rs. Crore**	1104.44	0.00
6.0	**Carried forward FAC for recovery during future period (4.5-5.0)**	**Rs. Crore**	1104.44	0.00
7.0	**FAC recovery for the month of January 2022**	**Rs. Crore**	36.62	0.00

10.2 The Commission notes that TPC-D has considered the opening FAC Fund and added the standalone monthly FAC amount to the said fund and deducted FAC recovery amount in the month of January, 2023 to arrive at the closing fund. The Commission in its FAC approval for July 2022 has allowed FAC recovery at ceiling rate up to March 2023 and held that any unrecovered FAC at the end of March 23 will get subsumed in the provisional true-up of FY 2022-23 and any gap arising thereof will be allowed to be recovered in tariff of FY 2023-24. The Commission, thereafter, has issued MTR Order on 31 March, 2023 and approved the revised power purchase cost in the Provisional Truing-up of FY 2022-23 and accordingly determined tariff for FY 2023-24 and FY 2024-25. Thus, the Commission is approving the monthly FAC for standalone month along with any under recovery / over recovery as per provisions of MYT Regulations, 2019 and has not considered any adjustment towards FAC fund as the said amount is subsumed and already adjusted in provisional truing-up of FY 2022-23.

11. Recovery from Consumers:

11.1 Regulation 10.9 of MYT Regulations, 2019 provides for methodology of recovery of FAC charge from each category of consumers. The relevant extract is reproduced as below.

"10.9 The ZFAC per kWh for a particular Tariff category/sub-category/consumption slab shall be computed as per the following formula: —

*$Z_{FAC\ Cat}$ (Rs/kWh) = [Z_{FAC} / (Metered sales + Unmetered consumption estimates + Excess distribution losses)] * k * 10,*
Where:

$Z_{FAC\ Cat}$ = Z_{FAC} component for a particular Tariff category/sub-category/consumption slab in 'Rupees per kWh' terms;

k = Average Billing Rate / ACOS;

Average Billing Rate = Average Billing Rate for a particular Tariff category/sub-category/consumption slab under consideration in 'Rupees per kWh' as approved by the Commission in the Tariff Order:

Provided that the Average Billing Rate for the unmetered consumers shall be based on the estimated sales to such consumers, computed in accordance with such methodology as may be stipulated by the Commission:

ACOS = Average Cost of Supply in 'Rupees per kWh' as approved for recovery by the Commission in the Tariff Order:

Provided that the monthly Z_{FAC} shall not exceed 20% of the variable component of Tariff or such other ceiling as may be stipulated by the Commission from time to time:

Provided further that any under-recovery in the Z_{FAC} on account of such ceiling shall be carried forward and shall be recovered by the Distribution Licensee over such future period as may be directed by the Commission…."

11.2 **Accordingly, the Commission allows the FAC amount of Rs. 78.41 Crore for the month of January, 2023. As FY 2022-23 is already over and Provisional Truing-up of FY 2022-23 has also been done by the Commission in the recent MTR Order dated 31 March, 2023, the revised power purchase cost resulting in FAC is already adjusted in the said MTR Order.**

11.3 **In a view of above, the per unit Z_{FAC} for the month of January, 2023 to be levied on consumers of TPC-D is Nil.**

11.3 In a view of above, the per unit Zsoc for the month of January, 2023 to be levied on consumers of TPC-D is Nil.