



# महाराष्ट्र विद्युत नियामक आयोग

## Maharashtra Electricity Regulatory Commission

Ref. No. MERC/FAC/2023-24/303

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 October, 2022.

**Reference:** 1. TPC-D's FAC submission dated 15 November, 2022 for prior approval of FAC for the month of October, 2022.  
2. Data gaps communicated to TPC-D vide email dated 30 November, 2022.  
3. TPC-D's response to data gaps on 15 December, 2022.

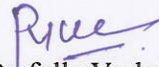
Sir,

Upon vetting the FAC calculations for the month of October, 2022 as mentioned in the above reference, the Commission has accorded approval for FAC amount of **Rs. 119.76 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)
October, 2022	0 (Zero)

\*FAC already allowed to be recovered as approved in FAC approval dated 01.07.2022 for the period from February 2022 to April 2022 for recovery in five months period between July 2022 to November 2022.

Yours faithfully,

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

**Enclosed:** Annexure A: Detailed Vetting Report for the month of October, 2022.

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**PRIOR APPROVAL FOR FAC CHARGES FOR THE MONTH OF  
OCTOBER, 2022**

**Subject:** Prior Approval of Fuel Adjustment Charges (FAC) submission of TPC-D for the month of October, 2022.

**Reference:** TPC-D's FAC submission dated 15 November, 2022 and 30 November, 2022 for prior approval of FAC for the month of October, 2022.

**1. FAC submission by TPC-D:**

TPC-D has submitted FAC submissions for the month of October, 2022 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. 119.76 Crore for the month of October, 2022. 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 15<sup>th</sup> 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 October, 2022 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*
			October 2022 (MU)
	(I)	(II=I/12)	(III)
<b>EHV – Industry</b>	214.59	17.88	64.96
<b>HT I - Industry</b>	929.80	77.48	81.02
<b>EHV- Commercial</b>	106.22	8.85	8.28
<b>HT II - Commercial</b>	389.69	32.47	30.47
<b>HT III - Group Housing Society (Residential)</b>	10.58	0.88	3.38
<b>HT IV – Railways/Metro/Monorail</b>			
22/33 kV	70.61	5.88	7.83
<b>HT V - Public Services</b>			
a) Govt. Edu. Inst. & Hospitals	14.04	1.17	1.50
b) Others	219.79	18.32	11.34
<b>HT VIII – EV Charging Stations</b>			1.32
<b>LT I (A)- Residential (BPL)</b>	0.00	0.00	0.00
<b>LT I (B)- Residential</b>	2032.59	169.38	163.16
<b>LT II - LT Commercial</b>			
(A)- upto 20 kW	260.96	21.75	14.54
(B) >20 kW and <50 kW	139.94	11.66	6.93
(C) - 50 kW	370.85	30.90	27.58
<b>LT III (A) - Industry &lt; 20 kW</b>	27.31	2.28	2.96
<b>LT III (B) - Industry &gt; 20 kW</b>	206.28	17.19	18.33
<b>LT IV - Public Services</b>			
a) Govt. Edu. Inst. & Hospitals	29.87	2.49	0.48
b) Others	8.39	0.70	2.25
<b>LT V - EV Charging Stations</b>	0.10	0.01	0.11
<b>Total</b>	<b>5031.61</b>	<b>419.30</b>	<b>446.45</b>

\* - 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 October, 2022 is 446.45 MU which is 6.47% higher than approved monthly sales of 419.30 MU. With respect to overall consumption of TPC-D, HT category consumption of 210.10 MU is on a higher side by 28.94% as compared to approved monthly HT energy sales of 162.94 MU and the LT sales of 236.34 MU are lower by 7.81% 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 October 22 is as given below:

Particulars	Actual – MU	Estimated - MU	Total	% sales based on Estimated Reading
October-22	445.64	0.80	446.45	0.18%

It is observed that the assessed sales percentage is marginal at 0.18% in October, 22.

3.4 Further, comparison of sales for October, 22 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
April 21 – October 21	1238.06	396.75	1121.07	2755.88
April 22 - October 22	1281.65	534.01	1508.89	3324.56

The Commission observes that overall sales across all categories are higher than last year except for Residential category.

#### 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 (Bilateral and 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:

Sr. No.	Particular	Compliance																								
1	Sources of approved Power Purchase	TPC-D has purchased power from approved sources.																								
2	Merit Order Dispatch	TPC-D has followed merit order for scheduling of power and preference was given to cheapest power.																								
3	Fuel Utilization Plan	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.																								
4	Deviation Quantum	TPC-D has underdrawn 0.32 MU as compared to the Schedule.																								
5	Sale of Surplus Power	TPC-D has sold 2.60 MU at Rs. 3.39/kWh thereby benefitting its consumers.																								
6	Power Purchase	Actual Power Purchase is 472.95 MU as against approved quantum of 435.78 MU.																								
7	Source wise Power Purchase	<table border="1"> <thead> <tr> <th>Source Name</th> <th>Approved (MU)</th> <th>Actual (MU)</th> <th>Proportion of each Source in Actual Purchase</th> </tr> </thead> <tbody> <tr> <td>TPC-G</td> <td>314.46</td> <td>246.33</td> <td>52.08%</td> </tr> <tr> <td>RE Sources</td> <td>73.44</td> <td>102.05</td> <td>21.58%</td> </tr> <tr> <td>Short Term</td> <td>47.89</td> <td>127.49</td> <td>26.96%</td> </tr> <tr> <td>Deviation &amp; Sale</td> <td>-</td> <td>(2.92)</td> <td>-0.62%</td> </tr> <tr> <td><b>Total</b></td> <td><b>435.78</b></td> <td><b>472.95</b></td> <td><b>100%</b></td> </tr> </tbody> </table>	Source Name	Approved (MU)	Actual (MU)	Proportion of each Source in Actual Purchase	TPC-G	314.46	246.33	52.08%	RE Sources	73.44	102.05	21.58%	Short Term	47.89	127.49	26.96%	Deviation & Sale	-	(2.92)	-0.62%	<b>Total</b>	<b>435.78</b>	<b>472.95</b>	<b>100%</b>
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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,																								





Sr. No.	Particular	Compliance
		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 October, 2022 submitted by TPC-D.

4.3 TPC-D has purchased power of 472.95 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 October, 2022 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 October, 2022		
	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	246.33	216.67	8.80
RE Sources	73.44	26.89	3.66	102.05	32.01	3.14
Short Term	47.89	17.04	3.56	127.49	71.90	5.64
Deviation Quantum and Cost	-	-	-	(0.32)	0.22	6.93
Sale of Power	-	-	-	(2.60)	(0.88)	3.39
<b>Total</b>	<b>435.78</b>	<b>187.27</b>	<b>4.30</b>	<b>472.95</b>	<b>319.92</b>	<b>6.76</b>

\* 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

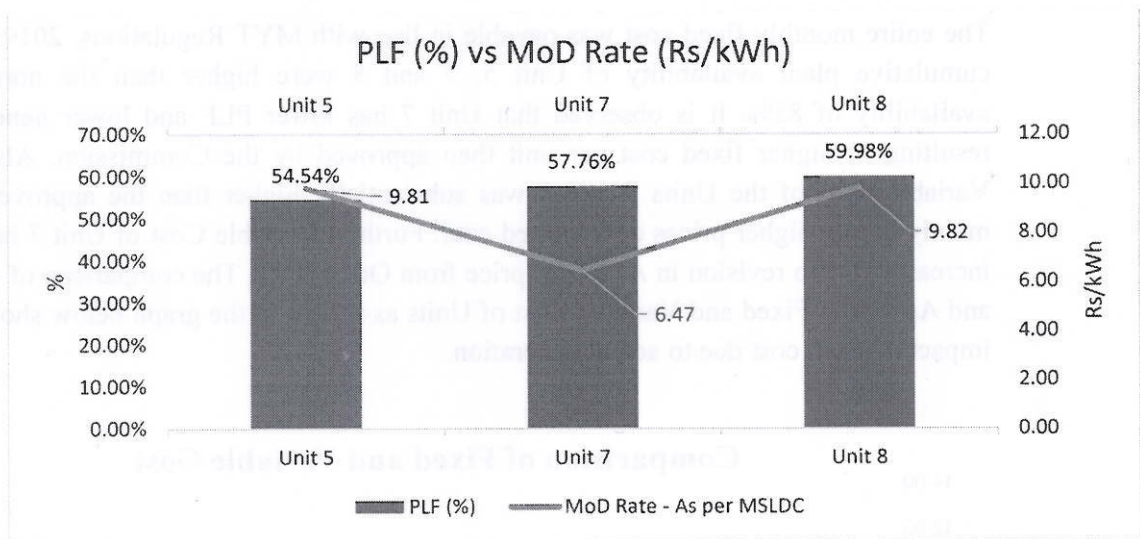
5.1 The Commission has sought detailed bills/invoices for all of the power purchase sources in order to verify the claim of TPC-D with regards to average power purchase cost for the month of October, 2022. The Commission has verified the Net Purchase, Variable Cost, Fixed Charge and the Power Purchase 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**

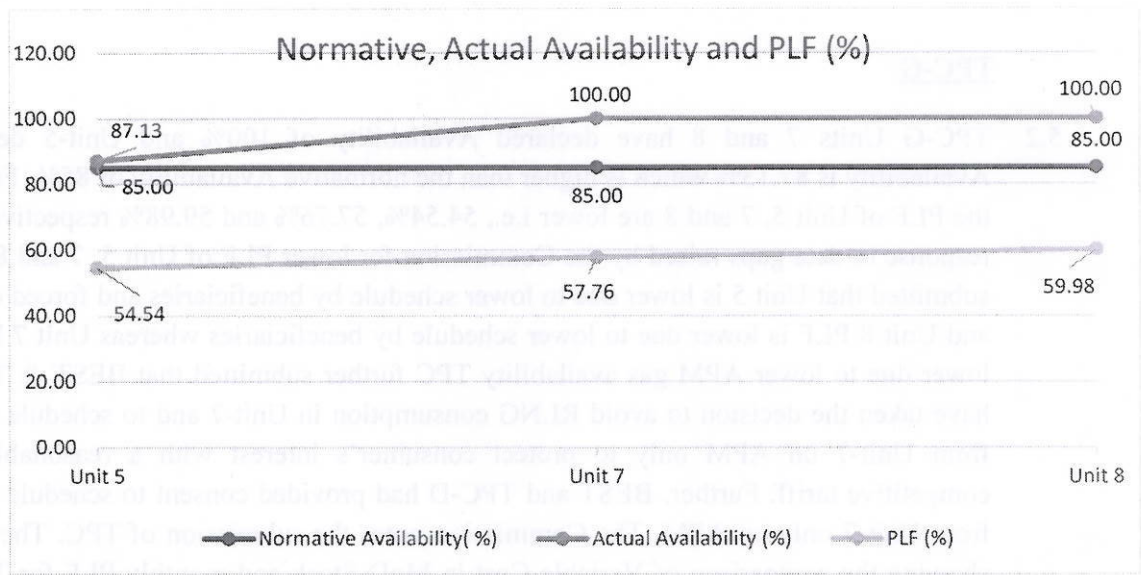
5.2 TPC-G Units 7 and 8 have declared Availability of 100% and Unit-5 declared Availability is 87.13% which is higher than the normative Availability of 85%. Further, the PLF of Unit 5, 7 and 8 are lower i.e., 54.54%, 57.76% and 59.98% respectively. In response to data gaps raised by the Commission for lower PLF of Unit 5, 7 and 8, TPC submitted that Unit 5 is lower due to lower schedule by beneficiaries and forced outage and Unit 8 PLF is lower due to lower schedule by beneficiaries whereas Unit 7 PLF is lower due to lower APM gas availability 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:



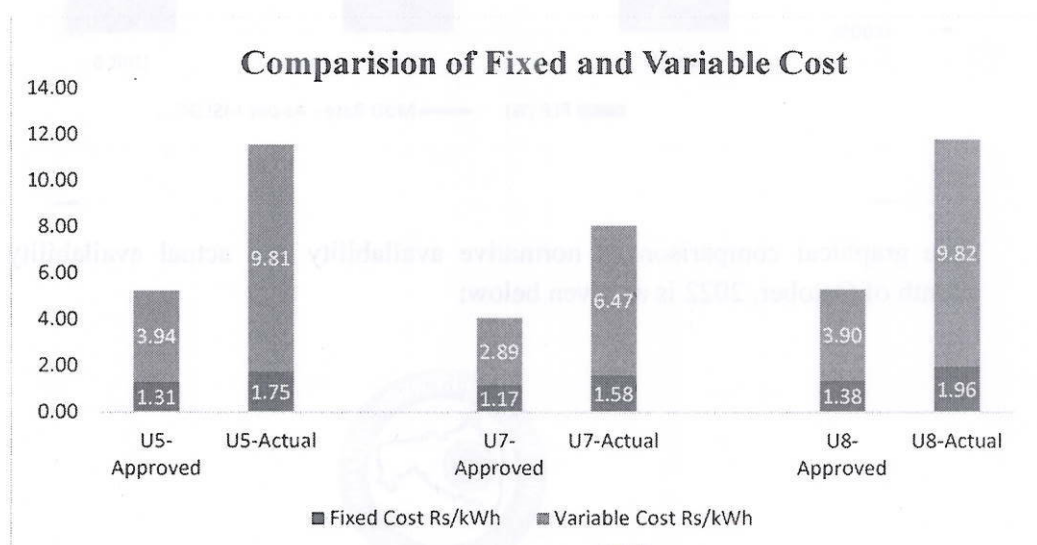
The graphical comparison of normative availability and actual availability for the month of October, 2022 is as given below:







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. 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 – October 2022	Availability – October 2021
Unit 5	87.13%	97.42%
Unit 7	100.00%	93.43%
Unit 8	100.00%	93.83%

- 5.4 The Commission has observed that TPC-D has purchased 246.33 MU from TPC-G as against monthly approved quantum of 314.46 MU. TPC-D has purchased 59.71 MU of hydro power which is higher than the approved quantum of 59.17 MU, whereas balance quantum of 186.62 MU is purchased from TPC-G Unit 5, 7 and 8 as against approved quantum of 255.28 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 exploring the options to tie up Coal on annual basis or on term basis, 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.*

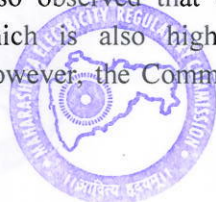
*7.17.10 It is the primary responsibility of Generating Companies to ensure supply of fuel for operation of the plant. However, the Commission, in the present Order, has reviewed the fuel arrangement to ensure the availability of plant. Further, TPC-G has tied up its capacity with BEST and TPC-D, which 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.”*

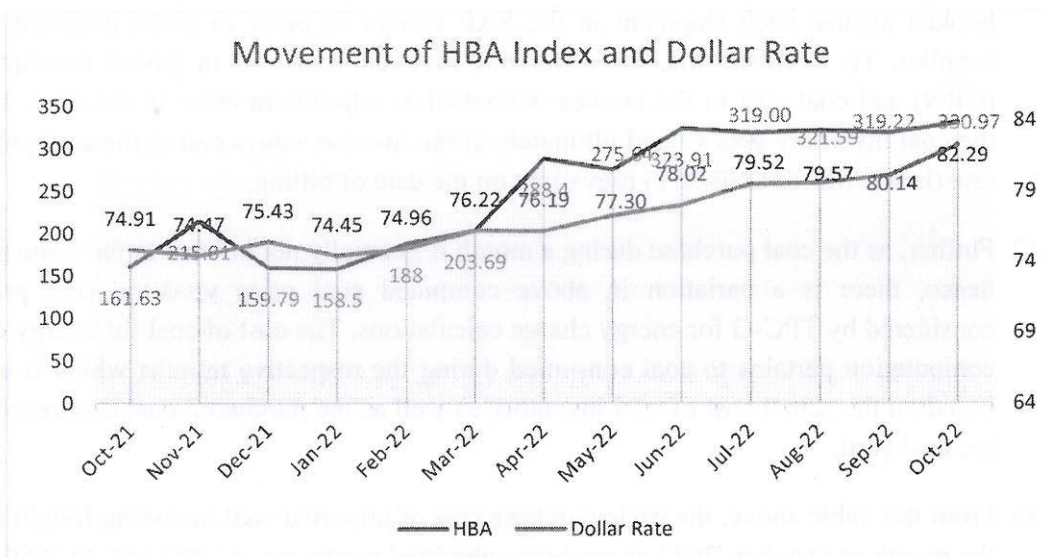
- 5.6 TPC-G's existing contracts for coal purchase expired in July 2020. Vide its letter dated 8 July, 2020, TPC-G informed that it has entered into coal contracts for 2.2 Million MT for two years from 1 August, 2020 onwards and further extendable by two years through competitive bidding. The Commission 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. 8.80/ 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 16.894.25/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 July'22 – 319\$/MT, August'22– 321.59\$/MT, September'22-319.22 and October'22-330.97\$/MT) and as an effect imported coal prices have gone up, owing to which Trombay Cost of Generation has increased in month of October, 22. The Commission observed that TPC-D has entered into IEX linked contract with TPTCL and Dhariwal Infrastructure Limited to ensure power availability at a lower cost compared to purchase from Exchange. 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 more than 2 times as compared to October, 21. As mentioned above, TPC-G has also purchased Indonesian origin coal linked to ICI3 index in October 22 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 40,402.93/SCM in October, 22 which is also higher than the approved rate of Rs.18,183.36/SCM in MYT Order. However, the Commission notes that 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 October, 2021. HBA index has decreased to 319.22 \$/MT in September 22 and subsequently, increased to 330.97\$/MT in October 22. Also, the Dollar Exchange rate has witnessed a sharp surge in October 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](http://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 October, 2022. The Commission has scrutinised the bills submitted and computed the purchase price of coal for the month of October, 2022 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	S/MT	S	S/MT	S/MT	S	S	S/MT
a	b	c	f	g	h	i	j	k	l
21-Sep-22	60500	4871	111.34	6736070	14.65	1.45	974050	7710120	127.44





10-Oct-22	55000	4761	199.26	10959300	14.65	2.15	924000	11883300	216.06
11-Oct-22	62505	4780	120.60	7538103	14.65	1.92	1035708	8573811	137.17
<b>Total</b>	<b>178005</b>	<b>4805</b>	<b>141.76</b>	<b>25233473</b>	<b>14.65</b>	<b>1.83</b>	<b>2933758</b>	<b>28167231</b>	<b>158.24</b>

5.11 TPC-D has submitted the detailed coal computation for the coal purchase considered in October, 2022 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 October, 2022 as per bills submitted works out at USD 158.24 /MT. TPC-D has booked Rs. 14,079.79/MT (i.e., Rs. 12,641.00/MT for Coal and Rs. 1,438.79/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. 15,981.45/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 October, 2022 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	14,079.79	14,079.79
2	Excise + Custom Duty + CE Cess+ Insurance	AS submitted	Rs./MT	1,101.44	1,101.44
3	Handling and Wharfage	AS submitted	Rs./MT	674.49	674.49
4	Other Fuel Handling Charges	AS submitted	Rs./MT	801.63	801.63



5	Other Adjustment	AS submitted	Rs./MT	-675.89	-675.89
6	Total as per Form 12	Sum (3:7)	Rs./MT	15,981.45	15,981.45

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 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	15,602.83	15,602.83
Foreign Exchange Rate Variation	Rs/MT	1,209.58	1,209.58
Employee Cost	Rs/MT	81.84	81.84
Form F11 - Coal Consumption Cost	Rs/MT	16,894.25	16,894.25

5.16 In view of the above, the Commission has considered APPC of Rs 8.80/kWh as against approved rate of Rs. 4.56/kWh for power purchased from TPC-G for the month of October, 2022.

5.17 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
October 2022	(31.05)	104.38	73.33

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

### Renewable Sources

5.18 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.

5.19 TPC-D had purchased non-Solar RE (15.56 MU) and Solar RE (86.82 MU) power during the month of October, 2022. TPC-D has purchased 86.49 MU of solar energy





from its long-term contracts at Rs. 3.05/kWh, including solar from its 225 MW wind-solar hybrid project. The said solar purchase is considered as per the invoice submitted by TPC-D. Additionally, TPC-D has purchased 0.33 MU of solar power at Rs. 2.45/kWh in the bilateral market. Accordingly, the total purchase of 86.82 MU at the rate of Rs 3.05/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 October, 2022 and accordingly wind power purchase has been considered based on the monthly meter reading data (7.64 MU) at rate of Rs. 4.81/kWh. Further, TPC-D has procured wind power from its wind-solar hybrid power from 225 MW project, it has purchased 7.93 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 15.56 MU at the rate of Rs 3.68/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.

5.20 The Commission observes that TPC-D has purchased total 102.39 MU of RE power during the month of October, 2022. **The average power purchase cost from RE sources is Rs. 3.14/kWh as compared to approved rate of Rs. 3.66/kWh. Accordingly, the Commission has considered RE purchase as submitted by TPC-D.**

5.21 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
October2022	10.48	(5.35)	5.12

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

#### **Short Term Purchase**

5.22 With regards to short term purchase, **TPC-D has purchased 127.49 MU at average rate of Rs. 5.64/kWh as compared to approved rate of Rs. 3.56/kWh to meet its demand.**





- 5.23 TPC-D purchased 78.76 MU from Power Exchange at rate of Rs 4.45/kWh. Further, TPC-D has purchased 0.50 MU at average rate of Rs. 8.97/kWh from DIL on day ahead as and when required basis with power purchase rates at weighted average price of IEX (seller's region) for requisitioned time blocks less discount offered by the seller, minimum discount offered is Rs.0.01/kWh. Further, it is noted that TPC-D has purchased 48.19 MU power from TPTCL and KEIPL at Rs. 7.54/kWh in the month of October-22 through Competitive Bidding and same is also approved by the Commission in its Order in Case No. 165 of 2022. In response to the query raised by the Commission in respect of short-term power purchased at Rs. 5.64/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. 4.55/kWh. Due to higher price discovery on power exchange, exchange linked contract rate was also higher. Accordingly, the Commission has considered the short-term purchase by TPC-D.
- 5.24 In addition to the aforesaid, TPC-D has also purchased 0.04 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 0.04 MU at Rs 0.05 Crore.
- 5.25 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
October 2022	28.33	26.53	54.86

#### Deviation Quantum and Cost

- 5.26 It was observed that TPC-D has Underdrawn 0.32 MU during the month of October, 2022. 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 (0.32 MU) and cost (Rs. 0.22 Crore) has been considered as per provisional weekly invoice raised by MSLDC for the period 1 October, 2022 to 31 October, 2022. 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

- 5.27 TPC-D has done sale of surplus power to the extent of 2.60 MU during the month at Rs. 3.39/kWh. With such a sale of power TPC-D has earned revenue of Rs. 0.88





**Crore.** TPC-D has managed to sell the surplus power 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

5.28 In view of the above, the overall cost approved in the Tariff Order and actual for the month of October, 2022 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	246.33	39.57	1.61	177.22	7.19	216.67	8.80
Renewable including REC	Approved	73.44	-	-	26.89	3.66	26.89	3.66
	Actual	102.05	-	-	32.01	3.14	32.01	3.14
Short Term	Approved	47.89	-	-	17.04	3.56	17.04	3.56
	Actual	127.49	-	-	71.90	5.64	71.90	5.64
Deviation Quantum	Approved	-	-	-	-	-	-	-
	Actual	-0.32	-	-	0.22	-6.93	0.22	-6.93
Sale of Surplus Power	Approved	-	-	-	-	-	-	-
	Actual	-2.60	-	-	-0.88	3.39	-0.88	3.39
<b>Total</b>	<b>Approved</b>	<b>435.78</b>	<b>39.46</b>	<b>0.91</b>	<b>147.81</b>	<b>3.39</b>	<b>187.27</b>	<b>4.30</b>
	<b>Actual</b>	<b>472.95</b>	<b>39.57</b>	<b>0.84</b>	<b>280.47</b>	<b>5.93</b>	<b>319.92</b>	<b>6.76</b>

5.29 Considering the above, the Commission allows the average power purchase cost of Rs. 6.76/kWh for the month of October, 2022 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., October, 2021 was 476.33 MU and power purchase cost was Rs. 261.98 Crore with APPC of Rs. 5.50/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 October, 2022 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<sub>FAC</sub> is to be passed on to the consumers.

6.2 The following table shows the Z<sub>FAC</sub> worked out by the Commission on account of difference in fuel and power purchase cost for the month of October, 2022.





S. No.	Particulars	Units	October 2022
1	Average power purchase cost approved by the Commission	Rs./kWh	4.30
2	Actual average power purchase cost	Rs./kWh	6.76
3	Change in average power purchase cost (=2 -1)	Rs./kWh	2.47
4	Net Power Purchase	MU	472.95
5	Change in fuel and power purchase cost (=3 x 4/10)	Rs. Crore	116.670

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

7.1 TPC-D submitted FAC recovery of Rs 44.58 Crore for the month of August, 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 3.10 Crore while computing the allowable FAC for October, 2022.

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

8.1 The carrying cost at 9.2% for under recovery as mentioned above which is to be allowed in FAC for the month of October, 2022 is Rs 0.02 Crore.

**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	October 2022-Actual	Actual Cumulative (October 2022)	Annual Sliding Distribution Loss (November 2021 to October 2022)
1	Net Energy Input at Distribution Voltage	MU	3584.02	266.08	1882.39	3018.98
2	TPC-D Retail Sales (excluding sales at 110/132 kV level)	MU	3547.46	265.09	1866.22	2986.80
3	Distribution Loss (1 - 2)	MU	36.56	0.99	16.168	32.18
4	Distribution Loss as % of net energy input (3/1)	%	1.02%	0.37 %	0.86%	1.07%
5	Excess Distribution Loss = [Actual Distribution Loss (4) - Distribution loss approved] x Net Energy Input (1)	MU	-	-	-	0.12
6	Disallowance of FAC due to excess Distribution Loss	Rs. Crore	-	-	-	0.03

It is seen that standalone distribution loss for the month of October, 22 is 0.37 % which is lower than the approved loss and cumulative loss up to October 2022 of 0.86% is marginally lower than approved loss i.e., 1.02%. In response to the query raised by the Commission, 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 1.07% for November 21 to October 22 is higher than approved loss of 1.02%.

9.2 The Commission notes that estimated sales for the month of October, 2022 is only 0.18% of the total sales i.e. 0.80 MU. The comparison of Distribution Loss for October, 2022 as compared to previous years is as given below:

Particulars	FY2022-23	FY2021-22
<b>Approved Loss</b>	<b>1.02%</b>	<b>1.02%</b>
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%



Particulars	FY2022-23	FY2021-22
October	0.37%	2.62%
Cumulative Upto October	0.86%	1.26%

9.3 It is observed that annual sliding Distribution Loss of 1.07% is higher than the approved loss of 1.02%. Accordingly, the Commission has disallowed Rs 0.03 Crore towards excess Distribution Loss for the month of October, 2022.

#### 10. Summary of Allowable Z<sub>FAC</sub>

10.1 The summary of the FAC amount as approved by the Commission for the month of October, 2022 is as shown in the Table below:

S. No.	Particulars	Units	October 2022 - As per TPC	October 2022- As Approved
<b>1.0</b>	<b>Calculation of Z<sub>FAC</sub></b>			
1.1	Change in cost of generation and power purchase attributable to Sales within the License Area (F)	Rs. Crore	116.67	116.67
1.2	Carrying cost for over-recovery/under-recovery (C)	Rs. Crore	0.00	0.02
1.3	Adjustment factor for over-recovery/under-recovery (B)	Rs. Crore	0.00	3.10
<b>1.4</b>	<b>Z<sub>FAC</sub> = F+C+B</b>	Rs. Crore	116.67	119.79
<b>2.0</b>	<b>Calculation of Per Unit FAC</b>			
2.1	Energy Sales within the License Area	MU	446.45	446.45
2.2	Excess Distribution Loss	MU	0.12	0.12
2.3	Z <sub>FAC</sub> per kWh	Rs./kWh	2.61	2.68
<b>3.0</b>	<b>Allowable FAC</b>			
3.1	FAC disallowed corresponding to excess Distribution Loss [(2.2 x 2.3)/10]	Rs. Crore	0.03	0.03
3.2	FAC allowable [1.4-3.1]	Rs. Crore	116.64	119.76
<b>4.0</b>	<b>Utilization of FAC Fund</b>			
4.1	Opening Balance of FAC Fund	Rs. Crore	863.32	0.00
4.2	Carrying Cost on FAC Fund	Rs. Crore	6.451	0.00
4.3	Z <sub>FAC</sub> for the month (Sr. N. 3.2)	Rs. Crore	116.64	119.76
4.4	Closing Balance of FAC Fund	Rs. Crore	945.76	119.76
4.5	Z <sub>FAC</sub> leviable/refundable to consumer	Rs. Crore	945.76	0.00



5.0	Total FAC based on category wise and slab wise allowed to be recovered in the billing month of November 22	Rs. Crore	945.76	0.00
6.0	Carried forward FAC for recovery during future period (4.5-5.0)	Rs. Crore	945.76	0.00
7.0	FAC recovery for the month of October 2022	Rs. Crore	40.65	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 October 2022 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. 119.76 Crore for the month of October, 2022. 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 October, 2022 to be levied on consumers of TPC-D is Nil.**



