महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

Ref. No. MERC/FAC/2024-25/ 0243 **Date: 18 April, 2024**

To,
The General Manager
The Brihanmumbai Electric Supply and Transport Undertaking
BEST Bhavan, BEST Marg
Post Box No. 192
Mumbai 400 001.

Subject: Prior Approval of Fuel Adjustment Charges (FAC) submission of BEST Undertaking for the month of October, 2023.

Reference:

1. FAC submission dated 20 November, 2023 by BEST Undertaking for prior approval of FAC for the month of October, 2023.
2. Data gaps communicated to BEST vide email dated 29 December, 2023
3. BEST's response to data gaps on 1 January, 2024

Sir,

Upon vetting the FAC calculations for the month of October, 2023 as mentioned in the above reference, the Commission has accorded approval for FAC Amount of **Rs. (6.63) Crore**. However, the total amount of FAC Fund after adding the FAC amount for October, 2023 is **Rs. (95.00) Crore** and the same is being carried forward to next FAC billing cycle with holding cost as per the Order dated 31 March, 2023 in Case No 212 of 2022. Accordingly, the FAC chargeable to its consumers is as shown in the table below:

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

BEST shall maintain the monthly account of FAC Fund and upload it on its website to maintain transparency of FAC Fund and also for information of all the stakeholders.

Yours faithfully,

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

Encl: Annexure A: Detailed Vetting Report for the month of October, 2023.

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ANNEXURE A

Detailed Vetting Report

Date: 17 April, 2023

PRIOR APPROVAL FOR FAC CHARGES FOR THE MONTH OF OCTOBER 2023

Subject: Prior Approval of Fuel Adjustment Charges (FAC) submission of BEST Undertaking for the month of October, 2023.

Reference: FAC submission dated 20 November, 2023 and 1 January, 2024 by BEST Undertaking for prior approval of FAC for the month of October, 2023.

1. FAC submission by BEST Undertaking:

1.1 BEST Undertaking ('BEST') has submitted FAC submissions for the month of October, 2023 as referred above. Upon vetting the FAC calculations, taking cognizance of all the submissions furnished by BEST against the data gaps issued, the Commission has accorded prior approval to BEST for negative FAC amount of **Rs. 6.63 Crore** for the month of October, 2023. The approved FAC amount is being added to the FAC Fund and the total amount of Rs. 95.00 Crore is being carried forward to next FAC billing cycle with holding cost as per the MTR Order dated 31 March, 2023 in Case No. 212 of 2022 (herein after referred to as "Tariff Order").

2. Background

2.1 On 31 March, 2023, the Commission has issued Tariff Order for BEST (Case No.212 of 2022) for Truing-up of FY 2019-20, FY 2020-21 and FY 2021-22, provisional Truing-up for FY 2022-23, and Aggregate Revenue Requirement and Tariff for FY 2023-24 and FY 2024-25. Revised Tariff has been made applicable from 1 April, 2023.

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

> *"8.17 Stabilising variation in consumer bill on account of FAC*
>
> ………………
>
> *8.17.4 Therefore, using its powers for Removal of Difficulties under Regulations 106 of MYT Regulations, 2019, the Commission is making following changes in FAC mechanism stipulated under Regulation 10 of 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 next tariff determination process.

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, upon seeking prior approval from the Commission.

8.17.5 In order to maintain transparency in management and use of such FAC Fund, Distribution Licensee shall maintain monthly account of such FAC fund and upload it on its website for information of stakeholders.

8.17.6 As the Commission has continued concept of FAC fund as stated above to stabilize 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.

8.17.7 The details of the FAC as per the Regulations, shall be submitted by the 15th of every month prior to the month on which the FAC is proposed to be levied and the Commission will endeavour to decide the same within 10 days so that the same can be levied from the 1st of the subsequent month."

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, BEST has filed FAC submissions for the month of October, 2023 for prior approval of the Commission. The Commission has scrutinized the submissions provided by BEST 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 BEST in the FAC submission and as approved by the Commission are as shown in the table below:

Table 1: Energy Sales Approved and Actual for the Month of October 2023 (MUs)

Consumer Category	Approved by the Commission (MU)	Monthly Approved* (MU)	Actual Sales
			October, 2023 (MU)
	(I)	(II=I/12)	(III)
HT I- Industry	194.20	16.18	15.35

Consumer Category	Approved by the Commission (MU)	Monthly Approved* (MU)	Actual Sales
			October, 2023 (MU)
	(I)	(II=I/12)	(III)
HT II - Commercial	245.97	20.50	19.13
HT III - Group Housing Society (Residential)	32.12	2.68	3.27
HT IV – Railways/Metro/Monorail	2.57	0.21	0.23
HT V - Public Services			
a) Govt. Edu. Inst. & Hospitals	27.78	2.32	2.82
b) Others	197.17	16.43	17.76
HT-VI EV Charging Stations	-	-	-
Total HT Sales	**699.82**	**58.32**	**58.55**
LT I (A)- Residential (BPL)	0.04	0.00	0.00
LT I (B)- Residential	2,166.87	180.57	189.34
LT II - LT Commercial			
(A)- upto 20 kW	909.14	75.76	76.77
(B) >20 kW and <50 kW	179.30	14.94	14.80
(C) - 50 kW	365.40	30.45	32.34
LT III (A) - Industry < 20 kW	112.08	9.34	9.05
LT III (B) - Industry > 20 kW	83.80	6.98	6.46
LT IV - Public Services		-	
a) Govt. Edu. Inst. & Hospitals	61.40	5.12	5.33
b) Others	187.76	15.65	16.24
LT V(A) – Agriculture Pumpsets	-	-	-
LT V(B) – Agriculture Others	0.05	0.00	0.01
LT VI - EV Charging Stations	20.90	1.74	2.22
Total LT Sales	**4,086.73**	**340.56**	**352.56**
Total	**4,786.55**	**398.88**	**411.11**

*- *Monthly approved sales is derived based on average of annual sales for comparison purpose.*

3.2 With respect to sales submitted by BEST as per Guidelines dated 19 May 2021, it is observed that the actual sales for the month of October 2023 is 411.11 MU which is higher by 3.07% as compared to the approved energy sales of 398.88 MU. With respect to the consumption, HT category consumption is 58.55 MU which is on a higher side by 0.40% compared to approved monthly HT energy sales of 58.32 MU and increase in the sales has been noticed of 3.52% on LT side whereby the actual sales is 352.56 MU as compared to approved monthly LT energy sales of 340.56 MU. The variation was observed across few categories due to temperature variation (Seasonal variation).

3.3 However, HT III - Group Housing Society (Residential), HT IV – Railways/Metro/Monorail, HT V - Public Services ((a) Govt. Edu. Inst. & Hospitals and b) Others), LT I – Residential (B) 101 - 300 units, LT II - LT Commercial (A) - upto 20kW and (C) - 50 kW, LT IV - Public Services (a) Govt. Edu. Inst. & Hospitals, LT IV - Public Services b) Others and LT-VI Electrical Vehicle Charging have witnessed sales higher than the approved monthly sales whereas other categories have witnessed lower sales than the approved monthly sales.

3.4 BEST has also submitted the data providing actual billing and estimated billing undertaken for the calculation of total energy consumption for the month of October 2023. BEST further submitted the number of actual and estimated meter readings undertaken for the month of October 2023 as shown below:

Table 2: No. of Meters reading on actual and estimated basis for October 2023

Sr. No.	Particulars	No. of Meters for which actual meter reading is done either manually or through AMR	No. of Meters for which meter reading are estimated.	Total Meters
1	HT	194	0	194
2	LT	1037527	12767	1050294
	Total	**1037721**	**12767**	**1050488**
	%	**98.78%**	**1.22%**	**100.00%**

3.5 Accordingly, the Commission has also analysed the comparison of estimated sales and sales based on actual meter reading for last 6 months and it was observed that the assessed sales percentage has been constant for past several months and is less than 1%.

Table 3: Actual and Estimated Sales of past 6 months

Particulars	May-23	Jun-23	July-23	Aug-23	Sept-23	Oct-23
Actual – MUs	422.67	420.48	416.45	373.24	406.24	**407.85**
Estimated – MUs	3.49	3.55	3.75	3.86	3.51	**3.26**
Total	**426.16**	**424.02**	**420.19**	**377.10**	**409.74**	**411.11**
% Sales based on Estimated Reading	0.82%	0.84%	0.89%	1.02%	0.86%	**0.79%**

3.6 **As per the data, 100% of HT billing is undertaken on actual basis due to Automatic Meter Reading (AMR) in place whereas under LT category, the billing of about 98.78% is undertaken as per actual meter readings and balance 1.22% is on estimated basis. Also, with respect to consumption, under LT Category, about 98.48% consumption is undertaken as per actual meter readings and balance 0.92% is on estimated basis.**

3.7 Further, comparison of sales of October 2023 as compared to last year are as shown below:

Table 4: Monthly Comparison of Sales for Residential, LT (Others) and HT Category

Particulars	LT - Residential (MU)	LT Others (MU)	HT (MU)	Total (MU)
Apr-22	180.93	155.77	55.55	392.25
Apr-23	184.04	158.85	55.87	398.76
May-22	216.56	171.07	60.05	447.69
May-23	200.25	164.14	61.76	426.16

Particulars	LT - Residential (MU)	LT Others (MU)	HT (MU)	Total (MU)
Jun-22	195.61	162.95	58.17	416.73
Jun-23	195.78	167.29	60.96	424.02
Jul-22	172.68	152.05	57.50	382.24
Jul-23	195.92	166.11	58.17	420.19
Aug-22	175.34	148.81	56.13	380.28
Aug-23	169.33	150.12	57.65	377.10
Sept-22	181.42	152.17	54.74	388.34
Sept-23	188.19	166.50	55.05	409.74
Oct-22	175.91	154.98	55.18	386.07
Oct-23	189.34	163.22	58.55	411.11
April 22 – October 22	**1,298.45**	**1,097.81**	**397.33**	**2,793.60**
April 23 – October 23	**1,322.85**	**1,136.23**	**408.01**	**2,867.09**

3.8 The Commission observes that the overall sales are higher in October 2023 as compared to October 2022.

4. **Power Purchase Details**

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

a) Tata Power Company Ltd. (TPC-G)

b) Manikaran Power Limited

c) Renewable Energy (Solar and Non-Solar)

d) Short Term Sources (Bilateral and Power Exchange).

4.2 In addition to the aforesaid, there may be some variation in real time (unscheduled interchange) which will be settled through Deviation Settlement Mechanism as approved by the Commission from 10 October 2021.

4.3 Summary of Power Purchase for BEST is as follows:

Sr. No.	Particular	Compliance
1	Sources of approved Power Purchase	BEST has purchased power from approved sources.
2	Merit Order Dispatch	BEST has followed merit order for scheduling of power and preference was given to cheapest power.

<table>
<tr><th>Sr. No.</th><th>Particular</th><th>Compliance</th></tr>
<tr><td>3</td><td>Fuel Utilization Plan</td><td>TPC-G has entered into coal contract for 2 MT based on the HBA index for the period 1 August, 2022 to 31 July, 2024. TPC-G has also contracted to procure imported coal at price linked with ICI index till January 2024.

Further, TPC-G has entered into 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>BEST has underdrawn 0.30 MU as compared to Schedule under Deviation Settlement Mechanism.</td></tr>
<tr><td>5</td><td>Sale of Surplus Power</td><td>BEST has sold 4.32 MU of surplus power in October 2023 (para 5.39 below).</td></tr>
<tr><td>6</td><td>Power Purchase</td><td>Actual Net Power Purchase is 474.01 MU as against approved 428.72 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>269.28</td><td>293.44</td><td>61.91%</td></tr>
<tr><td>Manikaran Power</td><td>62.22</td><td>60.71</td><td>12.81%</td></tr>
<tr><td>RE Sources</td><td>80.67</td><td>3.05</td><td>0.64%</td></tr>
<tr><td>Net Short Term</td><td>16.55</td><td>117.10</td><td>24.71%</td></tr>
<tr><td>DSM Pool</td><td>-</td><td>(0.30)</td><td>-0.06%</td></tr>
<tr><td>Total</td><td>428.72</td><td>474.01</td><td>100.00%</td></tr>
</table></td></tr>
<tr><td>8</td><td>Power Purchase:
a. Section 62 of Electricity Act, 2003</td><td>BEST is procuring power from only one source i.e., TPC-G under Section 62 of EA, 2003.

As part of verification of fixed cost claimed by BEST, the same has been verified from the BEST MTR Order in Case No. 212 of 2022.

As part of verification of energy charges claimed by BEST, verification of operational parameters, fuel cost, GCV etc. vis-à-vis the MTR Order/Tariff Regulations is carried out</td></tr>
<tr><td></td><td>b. Section 63 of Electricity Act, 2003</td><td>The Power procurement from Manikaran Power is through competitive bidding and as approved by Commission.
Cost and MUs verified as per Invoice</td></tr>
<tr><td>9</td><td>RE Purchase</td><td>Cost and MUs verified as per Invoice</td></tr>
<tr><td>10</td><td>Short Term Power Purchase</td><td>Short-term power purchase invoices of October, 2023 are submitted by BEST. All the power purchase quantum and rate are verified from the invoices and has been considered for FAC calculation.</td></tr>
</table>

4.4 **The BEST has purchased 474.01 MU as against approved 428.72 MU from the sources approved by the Commission.**

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

Table 5: Approved and Actual Power Procurement source wise for the Month of October 2023

Particulars	Tariff Order Dated 31.03.2023 FY 2023-24 – Approved			Actual for October 2023 as submitted by BEST		
	Net Purchase	Cost	Average Power Purchase Cost	Net Purchase	Cost	Average Power Purchase Cost
	MU	Rs. Crore	Rs/kWh	MU	Rs. Crore	Rs/kWh
TPC-G	269.28	191.11	7.10	293.44	178.57	6.09
Manikaran	62.22	27.06	4.35	60.71	26.33	4.34
RE Power	80.67	40.49	5.02	3.05	2.61	8.56
REC	-	-	-	-	-	-
Short Term	16.55	12.30	7.43	121.43	77.44	6.38
Deviation Quantum	-	-	-	(0.30)	0.28	(9.35)
Gross Total	**428.72**	**254.26**	**5.93**	**478.33**	**285.22**	**5.96**
Less: Sale of Power				(4.32)	(4.19)	9.69
Net Power Procurement	**428.72**	**254.26**	**5.93**	**474.01**	**281.04**	**5.93**

* - 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 BEST with regards to average power purchase cost for the month of October 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. BEST has purchased power from approved sources as per the Tariff Order.

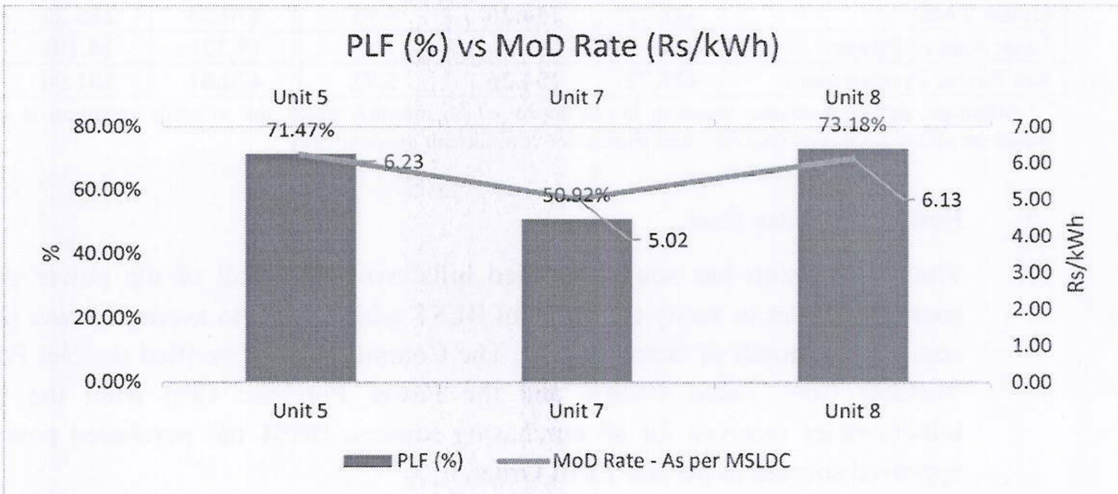
TPC-G

5.2 The Commission in its order dated 2 January, 2019 in Case No 249 of 2018 has allowed BEST to extend its existing PPA for 676.69 MW for a period of five years from 1 April, 2019 to 31 March, 2024. Further, the Commission in its order dated 15 March, 2023 in Case No. 240 of 2022 has allowed BEST to extend existing PPA with TPC-G (Thermal + Hydro) by one more year i.e. till March 2025. In line with the said Order, BEST share is 51.17% of the total capacity of TPC-G Unit 5, 7 and Hydro, whereas its share is 40% in TPC-G Unit 8.

5.3 Since BEST and TPC-D have same generating source i.e., TPC-G, BEST has submitted and relied upon TPC-D's FAC submissions in respect of TPC generating units (TPC-G) to the extent they are relevant to BEST. The Commission has considered the said submissions of TPC-D in respect of TPC-G, while reviewing the power purchase cost for BEST.

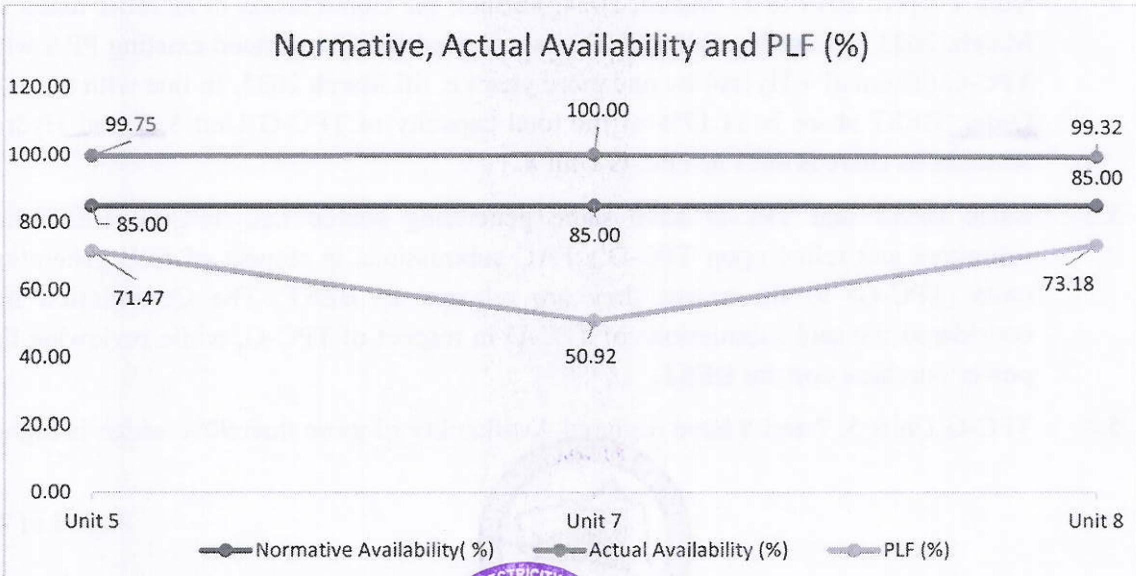
5.4 TPC-G Units 5, 7 and 8 have declared Availability of more than 90% which is higher than the normative availability of 85%. Further, the PLF of Unit 5, 7 and 8 are lower i.e., 71.47%, 50.92% and 73.18% respectively. In response to data gaps raised by the Commission for lower PLF of Unit 5, 7 and 8, TPC submitted that Unit 5 and Unit 8 PLF is lower due to lower schedule by beneficiaries and Unit-7 is lower due to lower APM gas availability and reserve shutdown from 19.10.2023 (02:25 Hrs) to 19.10.2023 (13:06 Hrs). TPC-D further submitted that BEST and 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 reasonable and competitive tariff. The graph showing the comparison of Variable Cost in MoD Stack and monthly PLF for TPC-G thermal/gas units is given below:

Figure 1: PLF of TPC Generating Units



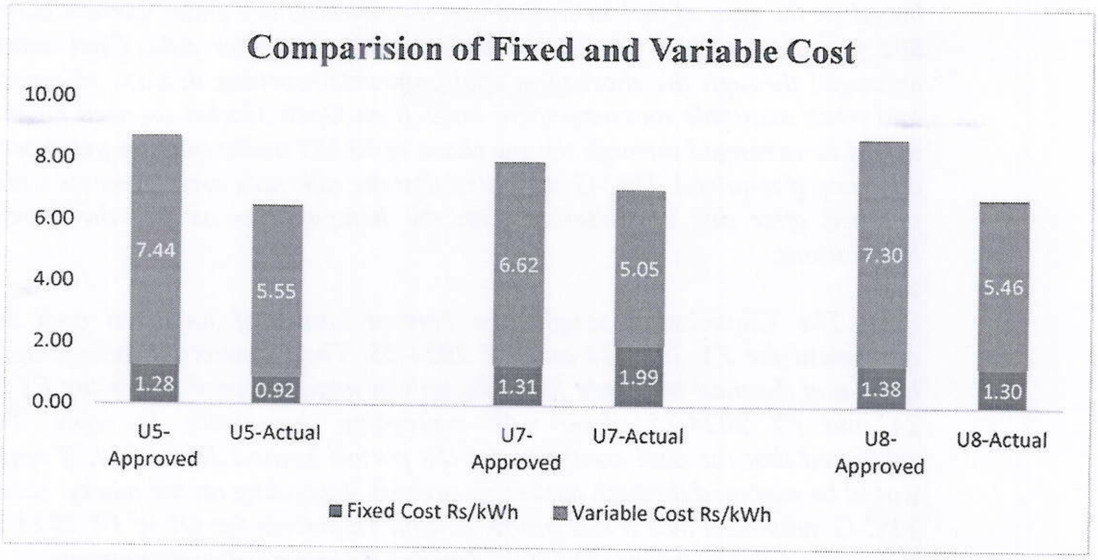
5.5 The graphical comparison of normative availability and actual availability for the month of October, 2023 is as given below:

Figure 2: PAF and PLF of TPC Generating Units



5.6 The entire monthly fixed cost was payable in line with MYT Regulations, 2019 as the cumulative plant availability of Units 5, 7 and 8 were higher than the normative availability of 85%. It is observed that Unit 7 has lower PLF as compared to Unit-5 and 8, which resulted in fixed cost being spread over lower net generation thereby increasing fixed cost per unit than approved by the Commission. 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.

Figure 3: Comparison of Fixed and Variable Cost of TPC Generating Units



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

Table 6: Availability of TPC-G plant for the month of October 2023

TPC-G Units	Availability – October 2023	Availability – October 2022
Unit 5	99.75%	87.13%
Unit 7	100.00%	100.00%
Unit 8	99.32%	100.00%

5.8 The Commission has observed that **BEST has purchased 293.44 MU from TPC-G as against monthly approved quantum of 269.28 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.

5.9 The Commission in its Order dated 31 March, 2023 in Case No 221 of 2022 in respect of Fuel Supply Arrangement (FSAs) of TPC-G as held as follows:

"8.4.2 The Commission notes that the projected Availability of all thermal generating Units and hydro generating stations are greater than the normative Availability as specified in the MYT Regulations, 2019. The Commission sought the details of Fuel Supply Agreements (FSAs) in place for achieving the projected Availability for thermal Units. In reply, TPC-G submitted that the current coal supply agreement is valid upto 31 July, 2026 and the current gas supply agreement is valid upto 31 July, 2026. TPC-G further, submitted that the

new agreements would be executed subject to the outcome of the finalisation of new PPAs.

8.4.3 The Commission sought the details of measures for fulfilling the shortfall in fuel quantum, if any, from the current FSAs. In reply, TPC-G submitted that the current contracts are adequate for meeting the projected Availability of its thermal Units. TPC-G submitted that alternate arrangements have been made based on the type of fuel in case of any non-availability under current contracts due to uncontrollable factors from the existing supplier side. Coal would be arranged through the short-term spot contracts/sourcing distress shipments as and when available on competitive basis from Open Market on need basis. Gas would be arranged through the purchase of RLNG under auction purchase/spot contract, if required. TPC-G submitted that the alternate arrangements would be pursued after due consultation with the beneficiaries as per the prevailing Regulations.

… ….

8.8.9 The Commission sought the current status of imported coal supply agreement for FY 2023-24 and FY 2024-25. The Commission also sought the basis and detailed rationale for reduction in imported coal prices for FY 2023-24 and FY 2024-25 along with supporting documents. In reply, TPC-G submitted that the coal contracts for the period beyond July, 2024, if required, would be executed through tendering process depending on the market scenario. TPC-G submitted that it has procured coal shipments for Q1 of FY 2023-24 on ICI-3/ICI-4 linked prices. TPC-G submitted the copies of coal contracts.

8.8.10 TPC-G further submitted that it has planned to procure coal at the most optimum market price to optimise the cost of generation. TPC-G is closely monitoring the indices on day-to-day basis for procuring the most economic sourcing of coal. Further, the trend of ICI-3/ICI-4 during the period from November 2022 to February 2023 shows a downward trend.

… …

8.8.15 The Commission is aware that in FY 2021-22 and FY 2022-23 there has been a very large volatility in the prices of imported coal. The volatility and the increase in the price directly affect the end tariff of the consumers. The Imported coal needs to be procured based on international index. The Commission has analysed the month wise ICI-3 and ICI-4 index imported coal price for FY 2022-23 i.e., from April 2022 to March 2023. Based on the analysis and the data available in the Public Domain there looks to be a possibility of softening of imported coal prices. The same is indicated by the imported ICI index as ICI 4 imported coal price for the month of March 2023 has reduced to 72.82 $/T in March 2023 from 91.39 $/T in December 2022. (Source www.argusmedia.com). Further, the imported coal price is linked to GCV of coal and hence the imported coal pricing cannot be taken in isolation to GCV of imported coal.

8.8.16 As discussed earlier, the average imported coal price for the latest three months from December 2022 to January 2023 as per the provisions of MYT Regulations, 2019 works out to be around Rs 14072/MT. However, based on the analysis of the ICI 4 index for the past 9 months, the extreme volatility in the imported coal market and in the interest of the consumers, the Commission by exercising its Power to Remove Difficulties under Regulation 106 of MYT Regulations, 2019 has considered the imported coal price of Rs 12500/MT for approving the energy charges for FY 2023-24 and FY 2024-25. This approach of considering imported coal price in deviation to approach as per MYT

Regulations, 2019 is in very specific/isolated condition due to volatility of imported coal prices and hence cannot be taken as precedence.
8.8.17 The Commission in MYT Order has considered escalation of 3% in fuel prices for approving the Energy Charges for ensuing years. In case of TPC-G, the major fuel source is imported coal and as submitted by TPC-G the imported coal prices. As discussed earlier, based on analysis of ICI.4 imported coal prices for the period April 2022 to March 2023, there appears to be a possibility of softening of coal prices. Hence, the Commission, for the purpose of this Order, has not considered any escalation in fuel prices for FY 2023-24 and FY 2024-25. ...."

5.10 The previous coal purchase contract of TPC-G, which was for 2.2 Million MT and valid for two years from August 1, 2020, to July 2022, has expired. It has been further extended for an additional two years through competitive bidding, based on the HBA index, for the period from August 1, 2022, to July 31, 2024. TPC-G has stated that, if extension required post expiry of the contract, it would be executed through tendering process depending on the market scenario and outcome of finalisation of new PPA. The Commission notes that the purchase of coal has been from the contracts entered into by TPC-G. TPC-G has stated that in case of any non-availability under current contracts due to uncontrollable factors from the existing supplier side, it would arrange the coal through open market on competitive basis or short-term spot contract. TPC-G has also signed contract with GAIL for supply of APM Gas for the period 7 July, 2021 to 6 July, 2026.

5.11 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 ICI index and the same offers significant cost advantage over HBA pricing. The said contract has been done up to January, 2024.

5.12 The net design energy for Khopoli hydro as envisaged in the MTR order is 172.58 MU. It is observed that actual cumulative generation in the month of October 2023 exceeds the net design energy generation. The actual cumulative energy generation till October 2023 is 174.46 MU. Therefore, as per Regulation 51.8 of MYT Regulations, 2019 TPC-G has billed energy charges at Rs. 1.20/kWh for the energy generation exceeding net design energy i.e., 1.88 MU. Subsequently, from the month of November 2023 the energy charges for Khopoli hydro will be Rs. 1.20/kWh. Hence, the Commission notes that TPC-G has levied energy charges in line with MYT Regulations, 2019. Relevant clause from MYT Regulations, 2019 is reproduced below –

"*51.8 In case the Energy Charge Rate (ECR) for a Hydro Generating Station, as computed in Regulation 51.6, exceeds ninety paise per kWh, and the actual saleable energy in a Year exceeds { DE x (1 – AUX) } kWh, the Energy Charge for the energy in excess of the above shall be billed at one hundred and twenty (120) paise per kWh only.*"

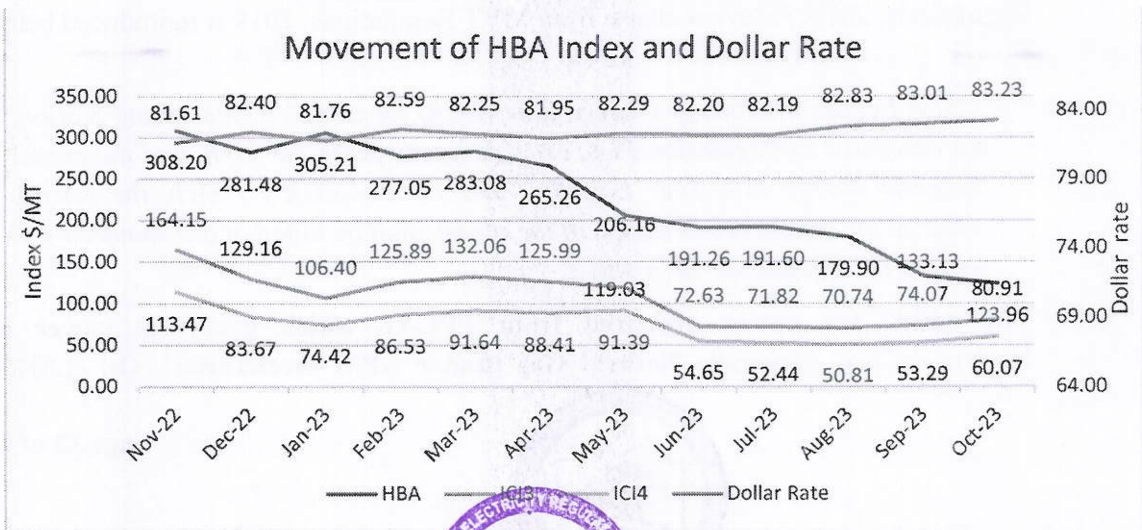
5.13 **The APPC for power procured from TPC-G, which generates power on Imported Coal, Domestic Natural Gas (under APM mechanism), Oil (LSHS),**

imported RLNG and hydro has been worked out at Rs. 5.86/kWh as against the approved rate of Rs. 7.10/kWh.

5.14 **The landed cost of coal for energy charge computation as claimed by TPC-G is Rs. 8.714.62/MT as compared to approved rate of Rs. 12,500/MT. It can be seen that the actual landed price is lower as compared to approved rate in the Tariff Order.** TPC-G's thermal power plant at Trombay is operated with 100% Indonesian coal. As mentioned above, TPC-G has purchased Indonesian origin coal linked to ICI4 index in October 23 which is cheaper to optimise the cost. The Commission observes that there has been decreasing trend in the imported coal price primarily attributed to demand supply position of the global coal market which is reflected in the HBA and ICI index for the last few months. 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. 31,391/SCM in October, 23 which is also lower than the approved rate of Rs. 41,279/SCM in MTR Order. However, the Commission notes that prices of APM Gas as per notification by Ministry of Petroleum and Natural Gas, Government of India in October 23 was \$6.50/MMBTU.

5.15 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 and ICI index i.e., Indonesian Coal Index for Indonesian coal which is set by Ministry of Energy and Mineral Resources (Indonesia). The Commission has sought for prevailing HBA/ICI 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, ICI3 and ICI4 index which is considered by TPC-G for energy charge calculations. It can be observed that the HBA and ICI index has witnessed decrease in trend from April, 2023 onwards with slight increase from September, 2023. Also, the Dollar Exchange rate has witnessed increase in October 2023 as compared to September 2023.

Figure 4: Movement of HBA indices and Dollar Rate



** - HBA indices at 6,322 kcal/kg GAR coal with 8% total moisture, 15% ash as received and 0.8% sulphur*
#-ICI3 index at 4,800 kcal/kg GAR and ICI- 4 index at 4,200kcal/kg GAR.
@ - For the ICI 3 and 4 index, the average rate for the month is considered
$ - 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)

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

Table 7: Computation of Purchase price of Coal by TPC-G for the month of October 2023

Date	Invoice QTY	GCV	Invoice Rate	Coal Cost	Freight Rate	BF Correction	Freight Payable	Total Coal Cost	$/MT
	MT	kcal/kg	$/MT	$	$/MT	$/MT	$	$	
12-Sep-23	27,383.24	4188	53.60	1467742	14.65	0.98	428000	1895742	69.23
19-Sep-23	57,520.00	4074	52.98	3047410	14.65	1.17	909966	3957376	68.80
26-Sep-23	65,401.00	4175	53.46	3496337	14.65	1.09	1029412	4525749	69.20
17-Oct-23	14,388.96	4077	53.60	771248	14.65	0.98	224899	996148	69.23
Total	**164693**	**4133**	**53.33**	**8782737**	**14.65**	**1.09**	**2592278**	**11375015**	**69.07**

5.17 TPC-G has submitted the detailed coal computation for the coal purchase considered in October, 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.

5.18 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.

5.19 From the Table, the basic purchase cost of imported coal including freight during the month of October, 2023 as 69.07/MT. TPC has booked Rs. 6,441.15/MT (i.e. Rs. 5,066.94/MT for Coal and Rs. 1,374.21/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 are in line with the average prices approved in the previous quarters. However, in other adjustments charges of coal computation TPC-G has claimed demurrage / despatch charges in the month of October 2023 of Rs. 54,42,124.59. In response to data gaps raised by the Commission pertaining to Despatch/Demurrage cost claimed TPC-G submitted in order to optimise the generation cost it has taken initiative to buy coal at lower prices through various new contracts. Further, tendering process for such shipment has been timely done as per generation planning with different shippers/miners/coal suppliers. The long-term contract of TPC-G with the vessel owner has different terms related to rate of loading/unloading as compared to the contracts with the new Coal suppliers, and on the basis of these, demurrage/despatch is being calculated. There is mismatch between the long term contracted loading/unloading rates (MT/day) with the vessel owner and the new loading rates (MT/day) of the new coal suppliers. This situation leads to variation in loading time and ultimately resulted in despatch/demurrage cost. The Commission is of the view that any charges related to demurrage / despatch arise when the coal buyer fails to promptly move or unload vessels within specified timeframe, resulting in charges being treated as penalties to coal buyer i.e., TPC-G. Hence, the Commission is of the view that, passing through such penalty charges to the end consumer shall not be allowed. In view of the above, demurrage /despatch charges are not considered in coal cost computation of October 2023. Accordingly, the total landed cost of coal arrived is Rs. 8,008.04/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, 2023 is as given below:

Table 8: Computation of Coal cost for the month of October 2023

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	6,441.15	6,441.15
2	Excise + Custom Duty + CE Cess+ Insurance	As submitted	Rs./MT	739.00	739.00
3	Handling and Wharfage	As submitted	Rs./MT	757.13	757.13
4	Other Fuel Handling Charges	As submitted	Rs./MT	755.94	755.94
5	Other Adjustment	As submitted	Rs./MT	(652.13)	(685.18)
6	Total as per Form 12	Sum (3:7)	Rs./MT	**8,041.09**	**8,008.04**

5.20 Apart from above, the Commission has also sought for third party sampling report for GCV verifications. TPC has submitted the third-party sampling certificate for the respective period. The Commission has verified the document submitted and found to be in order. Further, the 'As received' GCV of imported coal received in October 2023 was 4,096 kCal/kg and 'As billed' GCV was 4,133.32 kCal/kg. The 'As fired' GCV of imported coal considered by TPC-G is 4,016.21 kCal/kg. Considering the difference between the 'As received' GCV and the 'As Fired' GCV, the stacking loss works out to 79.79 kCal/kg which is within limit of 120 kCal/kg as specified in the MYT Regulations, 2019. Therefore, TPC-G has considered the stacking loss as per norms approved by the Commission while computing the Energy Charges. The transit loss claimed by TPC-D for the month of October 2023 is Nil.

5.21 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. Accordingly, the Commission has recomputed the cost of coal from December 2022 onwards and considered the coal cost for October 2023 as given below:

Month	Opening inventory actual			Purchase during the month			Consumption during the month			Closing inventory actual		
	Qty	Cost	Price	Qty	Cost	Price	Qty	Cost	Price	Qty	Cost	Price
	MT	Rs.	Rs./MT	MT	Rs.	Rs./MT	MT	Rs.	Rs./MT	MT	Rs.	Rs./MT
	As Submitted by TPC											
Oct-23	1,67,146	1,57,18,40,829	9,404	1,64,693	1,32,43,12,239	8,041	2,49,604	2,15,87,77,921	8,649	82,234	73,73,75,148	8,967
	As approved by the Commission											
Dec-22	2,65,358	3,93,58,62,379	14,832	1,11,805	1,74,33,02,416	15,592	1,83,607	2,76,46,76,986	15,058	1,93,556	2,91,44,87,810	15,058
Jan-23	1,93,556	2,91,44,87,810	15,058	1,26,944	1,95,38,39,169	15,391	1,31,388	1,99,57,48,819	15,190	1,89,112	2,87,25,78,160	15,190
Feb-23	1,89,112	2,87,25,78,160	15,190	52,082	59,38,07,523	11,401	1,31,526	1,89,02,57,219	14,372	1,09,669	1,57,61,28,464	14,372
Mar-23	1,09,669	1,57,61,28,464	14,372	2,02,747	2,08,16,24,286	10,267	1,93,459	2,26,50,11,203	11,708	1,18,957	1,39,27,41,547	11,708
Apr-23	1,18,957	1,39,27,41,547	11,708	3,11,014	3,01,76,21,158	9,703	2,09,575	2,14,96,88,999	10,257	2,20,395	2,26,06,73,706	10,257
May-23	2,20,395	2,26,06,73,706	10,257	2,19,752	1,99,36,16,399	9,072	2,31,854	2,24,10,10,973	9,666	2,08,293	2,01,32,79,132	9,666
Jun-23	2,08,293	2,01,32,79,132	9,666	2,26,456	2,32,04,79,126	10,247	2,20,999	2,20,30,09,194	9,968	2,13,750	2,13,07,49,064	9,968
Jul-23	2,13,750	2,13,07,49,064	9,968	1,50,897	1,28,17,53,768	8,494	1,43,818	1,34,59,01,843	9,358	2,20,829	2,06,66,00,990	9,358
Aug-23	2,20,829	2,06,66,00,990	9,358	2,11,625	1,66,27,49,163	7,857	2,12,793	1,83,50,59,204	8,624	2,19,661	1,89,42,90,948	8,624
Sept-23	2,19,661	1,89,42,90,948	8,624	1,76,174	1,39,05,45,265	7,893	2,28,690	1,89,77,82,869	8,298	1,67,145	1,38,70,53,344	8,298
Oct-23	1,67,145	1,38,70,53,344	8,298	1,64,693	1,31,88,70,114	8,008	2,49,604	2,03,53,57,252	8,154	82,234	67,05,66,206	8,154

5.22 As seen from above table, there is difference of Rs. (494.47)/MT between TPC's approach vis a vis weighted average methodology of opening inventory and coal purchased during the month. Accordingly, the Commission has recomputed the energy charges which decreased to Rs. 5.55/kWh and Rs. 5.46/kWh from Rs. 5.89/kWh and Rs. 5.79/kWh for Unit-5 and Unit-8, respectively and considered the same in FAC approval. Also, the Commission directs TPC-G to refund the differential in cost in the next monthly bill from TPC-D and BEST.

5.23 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:

Table 9: Coal Consumption Cost for the month of October 2023 of TPC-G

Particulars	Units	TPC Submission	As Approved
Form F12 - Coal Consumption Cost	Rs/MT	8,648.80	8,154.33
Foreign Exchange Rate Variation	Rs/MT	34.58	34.58
Employee Cost	Rs/MT	31.24	31.24
Form F11 - Coal Consumption Cost	Rs/MT	8,714.62	8,220.16

5.24 **In view of the above, the Commission has considered APPC of Rs. 5.86/kWh as**

against approved rate of Rs. 7.10/kWh for power purchased from TPC-G.

5.25 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 2023	14.16	(33.26)	(19.09)

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

<u>**Manikaran Power Limited (Medium Term PPA)**</u>

5.26 The Commission in its Order in Case No. 249 of 2018 dated 2 January, 2019, allowed BEST to tie up 100 MW Power with M/s. Manikaran Power Ltd. through M/s. Sai Wardha Power Generation Ltd for 5 years from 1 April, 2019 to 31 March, 2024 and accordingly Medium Term PPA was signed on 24 May 2019. Further, as per the Tariff order dated dated 31 March, 2023, allowed extension of PPA for 1 year i.e., up to March 2025.

5.27 As submitted by BEST, it has purchased 60.71 MU at average rate of Rs. 4.34/kWh as against approved rate of Rs. 4.35/kWh. The damages are applied as per clause 11.6.2 of PPA as the availability of power for the month of October 2023 was 81.86%, which is slightly lower than normative availability of 85% PAF. This has resulted in shortfall of 1.56 MU for the month of October 2023. The damages for lower availability were payable at the rate of 25% of the Fixed Charge i.e. 50 paise per unit against the shortfall unit. The relevant clause of the PPA is reproduced herein below -.

> "*11.6.2 In the event that Availability in any month is less than the Normative availability, the fixed charge for such month shall be reduced to the extent of shortfall in Normative Availability and in addition, any reduction below the Normative Availability shall be multiplied by a factor of 0.25 (zero point two five) to determine the Damages payable for such reduction in Availability. For the avoidance of doubt, the parties agree that the damages to be deducted for any reduction in Normative availability shall be 25% (Twenty Five Percent) of the Fixed Charge which is reduced on account of shortfall in Availability below Normative availability*".

5.28 Accordingly, the Commission has considered the said purchase from Manikaran Power Limited for the month of October 2023 as per invoice submitted by BEST. The details of approved v/s actual are as shown in the table below:

Table 10: Power Procurement from Manikaran Power Limited for the month of October 2023

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)
Approved	62.22	13.00	2.09	14.06	2.26	27.06	4.35
Actual	60.71	12.73	2.10	13.60	2.24	26.33	4.34

5.29 Variation in power purchase expenses from Manikaran Power Limited (MPL) can be divided on account of change in quantum and per unit rate as follows:

Month	Increase in Expenses for power purchase from MPL (Rs. Crore)		
	On Account of change Quantum of Power Purchase	On Account of change in Per Unit rate of Power Purchase	Total
October 2023	(0.66)	(0.08)	(0.74)

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

Renewable Sources

5.30 BEST has entered into Long term PPA for 20 MW with M/s Walwahn Solar MH Ltd (earlier Welspun) to meet its Solar RPO. The Commission in the Tariff Order has approved the purchase of solar power from the said PPA at Rs. 8.56/kWh.

5.31 **BEST has purchased 3.05 MU of Solar Power at Rs. 8.56/kWh for October 2023 from M/s. Walwahn Solar MH Ltd.** The Commission has verified the said purchase from the invoice submitted by BEST and has accordingly considered the said solar purchase for FAC.

5.32 Apart from the above approved power procurement source from Walwahn Solar MH Ltd., no additional Long term Solar and Non-Solar power has been procured under bidding route for the month of October 2023. Also, the Commission notes that BEST has not purchased any solar/non-solar REC and solar/non-solar power under GTAM and GDAM in the month of October 2023.

5.33 Accordingly, as submitted by BEST, it has purchased overall renewable power of 3.05 MU at average rate of Rs. 8.56/kWh as against approved rate of Rs. 5.02 /kWh.

5.34 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
October 2023	(66.44)	28.56	(37.88)

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

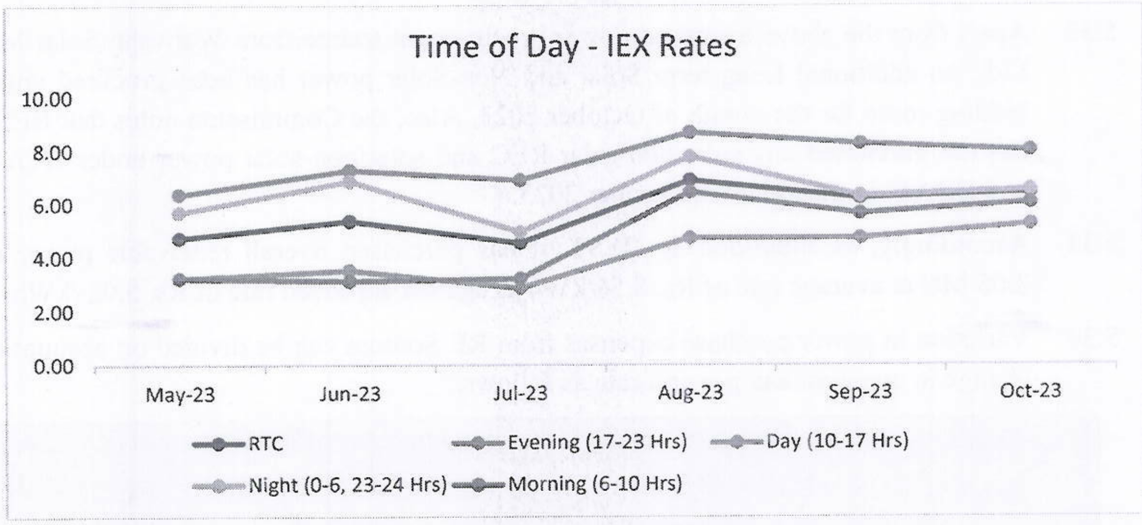
Short Term Purchase

5.35 **With regards to short term purchase, BEST has purchased 121.43 MU at an average rate of Rs. 6.38/kWh.** The Commission in the Tariff Order has approved the purchase from short term source at Rs. 7.43/kWh. The overall power purchased short term source was about 25.62% of net power procured during the month of October, 2023 mainly to meet the shortfall during day-time.

5.36 BEST has purchased 34.29 MU at Rs. 5.31/kWh and 33.64 MU at Rs. 4.80/kWh from DAM and RTM respectively through IEX in the month of October, 2023. Further, it has also purchased 17.31 MU at Rs. 7.84/kWh from Tata Power Trading Company Ltd (TPTCL) - JITPL, Odisha, 17.58 MU at Rs. 8.48/kWh from Manikaran Power Ltd (MPL) – DIL, Chandrapur and 18.60 MU at Rs. 7.84/kWh from Kreate Energy (I) Pvt Ltd (KEIPL) – LMEL, Chandrapur in bilateral market through competitive bidding. The Commission, vide order dated 31 March, 2023 in Case No. 37 of 2023 has approved power procurement on short term basis for the period from April 2023 to March 2024.

5.37 The market trend of past six months has been provided in the following graph with different time slot whereby it can be witnessed that from May 2023 onwards, the price has witnessed a relatively higher in peak hours and is above Rs. 7.00/kWh.

Figure 5: Price Trend of past months at IEX for different time slots



5.38 Considering the relatively higher trend of prices in the short-term market, the Commission has approved the short-term purchase by BEST for October, 2023.

Sale of Power

5.39 The Commission has observed that BEST and AEML-D has executed the agreement of Inter-Discom Sale of Power under MERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2019 read with Scheduling and Dispatch code, which interalia provides guiding principles for exchange of power between utilities on Day-ahead and Intra-day basis.

__" Para 6.3 of Statement of Reasons of DSM Regulations, 2019__

6. 3. ….. Accordingly, the Commission has modified the provisions such that, such inter-se or bilateral sale / purchase of power on day to day basis may be undertaken by respective licensee entirely at the discretion and time block wise rate for settlement of such inter-se exchange of unrequisitioned surplus power for load generation balance during day ahead scheduling may be mutually agreed.

It is expected that these decisions shall be taken by the distribution licensees on the commercial principles."

__Para 8.4.10 and 8.4.11 of Scheduling and Despatch Code:__

8.4.10 As the sellers have contracted their generation capacity through long term / medium term contract with buyers, such exchange of available surplus capacity shall be effected inter-se amongst buyers without need to amend existing PPAs with their respective sellers.

8.4.11 MSLDC shall maintain and publish separate account of exchange of surplus power capacity if any amongst the buyers / distribution licensees."

5.40 **Accordingly, BEST has done sale of surplus power to the extent of 1.53 MU during the month at Rs. 9.93/kWh under the same arrangement and 2.79 MU was sold power exchange (IEX) at Rs. 9.55/kWh.** Therefore, to optimize power purchase cost, the surplus power of 4.32 MU was sold to AEML-D and TPC-D under Inter-Discoms Sale of Power Agreement and to power exchange from which BEST has earned Revenue of Rs. 4.19 Crore (i.e., Rs. 9.69/kWh). In view of the aforesaid, the Commission has considered the actual quantum and revenue against surplus sale.

__Deviation Quantum and Cost__

5.41 It was observed that BEST has underdrawn 0.30 MU during the month of October, 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 of 0.30 MU at Rs. 0.28 Crore has been considered as per provisional weekly invoice raised by MSLDC for the period 1 October, 2023 to 31 October, 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, BEST has considered only DSM charges and not considered ADSM charges for calculation of power purchase cost for deviation quantum.

5.42 **In view of the same, the Commission has considered total deviation quantum of 0.30 MU (underdrawal), which contributes to around -0.06% of the total power procurement, for Rs. 0.28 Crore.**

Approved Cost of Power Purchase

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

Table 11: Approved Power Purchase Cost for the month October 2023

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	269.28	34.56	1.28	156.55	5.81	191.11	7.10
	Actual	293.44	35.28	1.20	136.74	4.66	172.02	5.86
Manikaran Power	Approved	62.22	13.00	2.09	14.06	2.26	27.06	4.35
	Actual	60.71	12.73	2.10	13.60	2.24	26.33	4.34
Renewable Power	Approved	80.67	-	-	40.49	5.02	40.49	5.02
	Actual	3.05	-	-	2.61	8.56	2.61	8.56
Short Term Purchase	Approved	16.55	-	-	12.30	7.43	12.30	7.43
	Actual	121.43	-	-	77.44	6.38	77.44	6.38
Sale of Power	Approved	-	-	-	-	-	-	-
	Actual	(4.32)	-	-	(4.19)	9.69	(4.19)	9.69
Deviation Quantum	Approved	-	-	-	-	-	-	-
	Actual	(0.30)	-	-	0.28	(9.35)	0.28	(9.35)
Total	**Approved**	**428.72**	**47.56**	**1.11**	**223.40**	**5.21**	**254.26**	**5.93**
	Actual	**474.01**	**48.01**	**1.01**	**226.47**	**4.78**	**274.49**	**5.79**

5.44 **Considering the above submission, the Commission allows the power purchase quantum of 474.01 MU for total cost of Rs. 274.49 Crore at average power purchase cost of Rs. 5.79/kWh for the month of October, 2023 as shown in Table above. The actual purchase for same month in FY 2022-23 i.e., October, 2022 was 405.97 MU and power purchase cost was Rs. 312.14 Crore with APPC of Rs. 7.69/kWh.**

Summary

5.45 **To summarise, BEST has optimised its overall power purchase cost by selling the surplus power of quantum 4.32 MU at Rs. 9.69/kWh on IEX and to AEML-D and TPC-D through Inter Discom sale of power and by procuring 60.71 MU at Rs. 4.34/kWh from Manikaran Power Limited.**

5.46 **Entire power purchased from Manikaran Power Ltd to the extent of its Availability having the least Variable Cost is in MOD.**

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, 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 31

March, 2023 and accordingly arrived at differential per unit rate at which Z_{FAC} is to be passed on to the consumers.

6.2 It is noted that BEST has incurred the per unit Power Purchase cost which is lower than the limits Approved per unit Power Purchase Cost hence the Z_{FAC} October, 2023 is negative as shown in the Table below.

Table 12: Computed Z_{FAC} for the month of October 2023

S. No.	Particulars	Units	October 2023
1	Average power purchase cost approved by the Commission	Rs./kWh	5.93
2	Actual average power purchase cost	Rs./kWh	5.79
3	Change in average power purchase cost (=2 -1)	Rs./kWh	(0.14)
4	Net Power Purchase	MU	474.01
5	**Change in fuel and power purchase cost (=3 x 4/10)**	**Rs. Crore**	(6.63)

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

7.1 The adjustment for over recovery/under recovery has to be done for the (n-4) month as per provisions of MYT Regulations, 2019. As no FAC has been levied from April 2023, there would not be any adjustment factor for the month of October 2023 while computing the allowable FAC.

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

8.1 As explained in the above paragraph in absence of any adjustment factor for previous month, there is no carrying cost which is to be allowed in FAC for the month of October 2023.

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"

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

Table 13: Distribution Loss for the month of October 2023

S. N	Particulars	Units	Approved in Tariff Order	October 2023-Actual	Actual Cumulative (October 2023)	Annual Sliding Distribution Loss (Nov 2022 to Oct 2023)
1	Net Energy Input at Distribution Voltage	MU	4,933.20	461.75	3,056.97	4,828.08
2	BEST Retail Sales	MU	4,726.99	411.11	2,867.09	4,595.21
3	Distribution Loss (1 - 2)	MU	206.21	50.63	189.87	232.87
4	Distribution Loss as % of net energy input (3/1)	%	4.18%	10.97%	6.21%	4.82%
5	Excess Distribution Loss = [Actual Distribution Loss (4) - Distribution loss approved (4)] x Net Energy Input (1)	MU	-	31.33	62.09	31.05
6	**Disallowance of FAC due to excess Distribution Loss**	**Rs. Crore**	**0.00**	**0.00**	**0.00**	**0.00**

9.3 As seen from the above table, for the month of October, 2023 the standalone distribution loss is higher than the approved distribution loss. BEST stated that by considering net energy input at distribution voltage of 461.75 MU for the month of October, 2023 and actual energy sales of 411.11 MU for the month of October, 2023, the Standalone Actual Distribution Loss works out to 10.97%, however annual sliding distribution loss (from November, 2022 to October, 2023) works out to 4.82%, which is higher than the approved distribution loss. The standalone distribution loss for the month may give erratic figure due to consideration of energy sales with different bill generation period. Hence, to determine the actual distribution loss for a month, sum of purchase and sales for a period of 12 months is required to be considered. It is observed that the annual sliding distribution loss of 4.82% for the period November, 22 to October, 23 is higher than the approved loss.

9.4 Further, the comparison of standalone Distribution Loss for the October, 2023 as compared to last year is as given below:

Table 14: Monthly Distribution Loss of FY 2022-23 and FY 2023-24

Particulars	FY 2023-24	FY 2022-23
Approved Loss	**4.18%**	**4.18%**
April	6.43%	11.09%
May	9.52%	3.26%
June	9.26%	1.83%
July	-5.25%	1.43%
August	10.36%	2.84%
September	0.26%	0.25%
October	10.97%	4.11%
Cumulative	**6.21%**	**3.65%**

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9.5 **It is observed that annual sliding Distribution Loss of 4.82% is higher that the approved loss of 4.18% and the standalone FAC for the month is negative. Hence, the Commission has not worked out any disallowance on account of Distribution Loss for the month of October, 2023.**

10. Summary of Allowable ZFAC

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

Table 15: Summary of Allowable Z_{FAC} for October, 2023

S. No.	Particulars	Units	October 2023 - As per BEST	October 2023 - As Approved
1	**Calculation of ZFAC**			
1.1	Change in cost of generation and power purchase attributable to Sales within the License Area (F)	Rs. Crore	(0.08)	(6.63)
1.2	Carrying cost for over-recovery/under-recovery (C)	Rs. Crore	-	-
1.3	Adjustment factor for over-recovery/under-recovery (B)	Rs. Crore	-	-
1.4	**ZFAC = F+C+B**	Rs. Crore	(0.08)	(6.63)
2	**Calculation of Per Unit FAC**			
2.1	Energy Sales within the License Area	MU	411.11	411.11
2.2	Excess Distribution Loss	MU	-	-
2.3	ZFAC per kWh	Rs./kWh	(0.00)	(0.16)
3	**Allowable FAC**			
3.1	FAC disallowed corresponding to excess Distribution Loss [(2.2 x 2.3)/10]	Rs. Crore	-	-
3.2	FAC allowable [1.4-3.1]	Rs. Crore	(0.08)	(6.63)
4	**Utilization of FAC Fund**			
4.1	Opening Balance of FAC Fund	Rs. Crore	(79.51)	(87.65)
4.2	Holding Cost on FAC Fund	Rs. Crore	(1.98)	(0.73)
4.3	Z_{FAC} for the month (Sr. N. 3.2)	Rs. Crore	(0.08)	(6.63)
4.4	Closing Balance of FAC Fund	Rs. Crore	(81.58)	(95.00)
4.5	Z_{FAC} leviable/refundable to consumer	Rs. Crore	-	-
5.0	Energy Sales within the License Area	MU	411.11	411.11
6.0	ZFAC per kWh [(4.5/5.0)*10/5]	Rs./kWh	-	-
7.0	**Total FAC based on category wise and slab wise allowed to be recovered**	**Rs. Crore**	-	-
8.0	**Carried forward FAC for recovery during future period (4.5-7.0)**	**Rs. Crore**	(81.58)	0.00

10.2 It can be seen from the above table that standalone FAC for the month of October 2023 is Rs. (6.63) Crore. The negative FAC approved for the month is higher as compared to FAC claimed by BEST in view of the lower energy charges of TPC-G's

Unit 5 and 8 considering the weighted average rate of coal consumed during the month and reduction of demurrage charges from coal cost of October 2023. As the FAC is negative, the said amount will be accumulated in FAC Fund for stabilisation of FAC rate over the period.

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. (6.63) Crore for the month of October, 2023 to be added to the FAC fund and FAC amount accumulated shall be carried forward to the next billing with holding cost to the**

next billing cycle.

11.3 **The Commission in its approval for the month of September, 2023 has allowed Rs. (87.65) Crore to be accumulated in the FAC fund to be carried forward to the next billing cycle with holding cost. Hence, the net opening balance of FAC is Rs. (88.37) Crore along with holding cost.**

11.4 **The Commission in the MTR Order dated 31 March 2023 had held that negative FAC amount may be carried forward to the next FAC billing cycle with holding cost. Such carry forward of negative FAC shall be continued till next tariff determination process. Accordingly, the Commission allows the FAC amount of Rs. (6.63) Crore for the month of October, 2023 to be as added to the FAC Fund and total amount of Rs (95.00) Crore shall be carried forward to the next billing cycle with holding cost.**

11.5 **In a view of above, the per unit ZFAC for the month of October, 2023 to be levied on consumers of BEST is Nil.**