

**MAHARASHTRA ELECTRICITY REGULATORY COMMISSION**  
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**Ref. No. MERC/FAC/2020-2021/E-Letter**

**Date: 6 October, 2020**

To,

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

**Subject:** Post facto approval of BEST Undertaking's Fuel Adjustment Charges (FAC) for the period from October, 2019 to December, 2019.

**Reference:** BEST Undertaking's submission dated 24 April and 5 June 2020 for post-facto approval of FAC for the period from October, 2019 to December, 2019.

Sir,

Upon vetting the FAC calculations for the month of October, 2019 to December, 2019 as mentioned in the above reference, the Commission has accorded post facto approval to BEST Undertaking for charging FAC to its consumers as shown in the Table below:

Month	Oct, 2019	Nov, 2019	Dec, 2019
<b>FAC allowed (Rs. Crore)</b>	14.98	15.96	30.50
<b>Carry forward FAC (Rs. Crore)</b>	-	-	0.78

BEST has computed total quarterly FAC (inclusive of carry forward) as Rs. 66.65 Crore against which the Commission has approved the total FAC for Q3 (inclusive of carry forward) as Rs. 62.22 Crore. Thus, Rs.4.43 Crore is disallowed which is explained in detail at paras 9.3, 9.4, 9.5 and 9.6 of the enclosed Report. Since the recovery of this amount is already done, the above adjustment will be rolled over in next FAC approvals (i.e., FAC of Q4 of FY 2019-20) and subsequently would be adjusted in the final True up of FY 2019-20.



As FY 2019-20 is already over and provisional True-up of FY 2019-20 has also been done in recent MYT Order dated 30 March, 2020, the rationale for post facto approval of Q3 of FY 2019-20 is only to carry forward the allowance or disallowance to Q4 of FY 2019-20. Any variation in final allowance or disallowance of FAC will be reconciled at the time of final True-up of FY 2019-20 under the MERC (Multi Year Tariff) Regulations, 2015.

Yours faithfully,

**Sd/-**  
(Prafulla Varhade)  
Director (EE), MERC

**Encl:** Annexure A: Detailed Vetting Report for the period of October, 2019 to December, 2019



**POST FACTO APPROVAL FOR FAC FOR THE MONTH OF OCTOBER, 2019 TO  
DECEMBER, 2019**

**Subject:** Post facto approval of BEST Undertaking's Fuel Adjustment Charges (FAC) for the period from October, 2019 to December, 2019.

**Reference:** BEST Undertaking's submission dated 24 April and 5 June 2020 for post-facto approval of FAC for the period from October, 2019 to December, 2019.

**1. FAC submission by BEST Undertaking:**

1.1 BEST Undertaking has submitted FAC submissions for the month of October, 2019 to December, 2019 as referred above. Upon vetting the FAC calculations, taking cognizance of all the submissions furnished by BEST Undertaking, the Commission has accorded post facto approval for the FAC amount to be charged in the billing month of January, 2020 to March, 2020.

**2. Background**

2.1 On 28 October, 2016, the Commission has issued Tariff Order for BEST Undertaking, (Case No.33 of 2016) for Truing-up of Aggregate Revenue Requirement (ARR) for FY 2012-13 to FY 2014-15, provisional Truing-up of FY 2015-16 and ARR and Tariff for FY 2016-17 and FY 2019-20. Revised Tariff has been made applicable from 1 October, 2016.

2.2 On 12 September, 2018, the Commission has issued Tariff Order for BEST Undertaking, (Case No.203 of 2017) for Mid-Term Review, including Truing-up of FY 2015-16 and FY 2016-17, provisional Truing-up for FY 2017-18, and revised Aggregate Revenue Requirement and Tariff for FY 2018-19 to FY 2019-20. Revised Tariff has been made applicable from 1 September, 2018.

2.3 On 30 March, 2020 the Commission has issued Tariff Order for BEST Undertaking, (Case No.324 of 2019) for True-up of FY 2017-18 and FY 2018-19, provisional True-up for FY 2019-20 and Aggregate Revenue Requirement and Multi-Year Tariff for 4<sup>th</sup> Control Period from FY 2020-21 to FY 2024-25. Revised Tariff has been made applicable from 1 April, 2020



- 2.4 Vide its letter dated 15 November, 2016, the Commission communicated the excel formats for filing of FAC submissions to all Distribution Licensees. The Commission also directed all Distribution Licensees to submit FAC computations, including details pertaining to variation in fuel cost of generators for the approval of the Commission.
- 2.5 Vide FAC vetting Report dated 4 January, 2017, the Commission accorded prior approval of the FAC for the month of October, 2016.
- 2.6 In terms of MERC (MYT) Regulations, 2015 a Distribution Licensee is required to obtain post facto approval of the Commission on a quarterly basis for FAC charges. Accordingly, on 24 April and 5 June 2020, BEST Undertaking has filed FAC submissions for the month of October, 2019 to December, 2019 for post facto approval. The Commission has scrutinized the submissions provided by BEST Undertaking 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 Undertaking 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 (Oct-19) (MU)	Actual (Nov-19) (MU)	Actual (Dec-19) (MU)
	(I)	(II=I/12)	(III)	(IV)	(V)
<b>LT Category</b>					
LT - I (A) Residential-BPL	0.58	0.05	0.00	0.00	0.00
LT - I (B) Residential	2,188.19	182.35	183.14	166.84	149.08
LT - II (A) Commercial	977.00	81.42	79.16	72.58	68.97
LT - II (B) Commercial	215.93	17.99	17.79	17.86	16.99
LT - II (C) Commercial	371.38	30.95	31.25	31.17	29.98
LT - III (A) Industrial	45.00	3.75	4.04	3.85	3.87
LT - III (B) Industrial	88.94	7.41	7.03	7.11	7.09
LT - IV PWW	6.78	0.57	0.49	0.45	0.47
LT - V Adv & Hoardings	1.63	0.14	0.13	0.12	0.12
LT - VI St. Lighting	18.65	1.55	1.78	1.68	1.74
LT - VII (A) Temp-Religious	0.21	0.02	0.01	0.01	0.01
LT - VII (B) Temp-Others	32.00	2.67	0.99	0.93	0.86



Consumer Category	Approved by the Commission (MU)	Monthly Approved (MU)	Actual (Oct-19) (MU)	Actual (Nov-19) (MU)	Actual (Dec-19) (MU)
	(I)	(II=I/12)	(III)	(IV)	(V)
LT - VIII Crematorium	2.15	0.18	0.12	0.12	0.12
LT - IX (A) Public Service	61.28	5.11	4.76	5.10	4.52
LT - IX (B) Public Service Others	168.09	14.01	13.62	13.84	12.91
LT - X (A) Pumpsets	-	-	-	-	-
LT - X (B) Others	-	-	-	-	-
LT - XI Electric Vehicle Charging Stations	-	-	0.01	0.08	0.10
<b>HT Category</b>					
HT - I Industry	137.28	11.44	14.92	14.88	14.64
HT - II Commercial	270.00	22.50	19.11	18.84	18.15
HT - III Grp.Housing (Residential)	32.63	2.72	2.61	2.53	2.42
HT - IV PWW	37.99	3.17	3.16	2.87	2.71
HT-V (A) Railways, Metro & Monorail	-	-	-	-	-
HT-V (B) Railways, Metro & Monorail	2.29	0.19	0.18	0.19	0.19
HT-VI (A) Public Service	26.49	2.21	2.19	2.14	2.01
HT-VI (B) Public Service-Others	167.24	13.94	13.50	13.23	13.02
HT-VII Temporary Supply	18.31	1.53	2.39	1.94	2.09
HT-VIII Electric Vehicle (EV) Charging Stations	-	-	-	-	-
<b>Total Energy Sale</b>	<b>4,869.75</b>	<b>405.81</b>	<b>402.38</b>	<b>378.38</b>	<b>352.07</b>

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

3.2 **The total monthly sales for the months of October, November and December, 2019 is 402.38 MUs, 378.38 MUs and 352.07 MUs respectively, which is lower as compared to monthly approved MTR sale of 405.81 MUs.** The major variation was observed in November and December, 2019 due to variation in LT – I (B) Residential, LT – II (A) Commercial and HT-II commercial categories on account of seasonal variation during the respective period.



#### 4. Cost of Power Purchase

4.1 BEST Undertaking does not own or operate any generating stations. Accordingly, BEST Undertaking is required to procure power from outside sources in order to fulfil the demand of its consumers. The following are the list of sources from which BEST Undertaking procures power to meet its demand.

- a) Purchases from Tata Power Company Ltd. (TPC-G)
- b) Renewable energy procurement (RPS)
- c) Bilateral contracts and decrements to the imbalance pool.

4.2 The following Table shows the variation in average power purchase cost (APPC) (Rs/kWh) for the month of October, 2019 to December, 2019 as compared to average power purchase cost approved in Tariff Orders dated 12 September, 2018.

Particulars	Approved for October, 2019			Actual for October, 2019		
	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	293.45	1,27.47	4.34	294.65	121.08	4.11
RE Sources <sup>#</sup>	66.59	20.47	3.07	7.48	13.64	18.22
Traders	84.45	30.32	3.59	95.23	36.28	3.81
**Total Variation of Prior period (O/C provision for payment of FBSM Bills & Standby Energy Bills to be received for prior period)	-	-	-	-	0.04	-
<b>Total</b>	<b>444.49</b>	<b>178.25</b>	<b>4.01</b>	<b>397.37</b>	<b>171.03</b>	<b>4.30</b>



Particulars	Approved for November, 2019			Actual for November, 2019		
	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	293.45	1,27.47	4.34	304.53	125.46	4.12
RE Sources <sup>#</sup>	66.59	20.47	3.07	7.11	17.11	24.05
Traders	84.45	30.32	3.59	61.11	22.33	3.65
**Total Variation of Prior period (O/C provision for payment of FBSM Bills & Standby Energy Bills to be received for prior period)	-	-	-	-	-	-
<b>Total</b>	<b>444.49</b>	<b>178.25</b>	<b>4.01</b>	<b>372.76</b>	<b>164.90</b>	<b>4.42</b>

Particulars	Approved for December, 2019			Actual for December, 2019		
	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	293.45	1,27.47	4.34	258.68	105.06	4.06
RE Sources <sup>#</sup>	66.59	20.47	3.07	7.52	19.69	26.19
Traders	84.45	30.32	3.59	96.19	32.63	3.39
**Total Variation of Prior period (O/C provision for payment of FBSM Bills & Standby Energy Bills to be received for prior period)	-	-	-	3.19	23.46	73.50
<b>Total</b>	<b>444.49</b>	<b>178.25</b>	<b>4.01</b>	<b>365.58</b>	<b>180.83</b>	<b>4.95</b>



\*- In Case of BEST, the power purchase quantum and cost is approved on annual basis. Monthly approved cost and quantum is derived based on approved cost and quantum for comparison purpose.

\*\*Total monthly variations of prior period accounted for October, 2019 to December, 2019 are the expenses claimed against the provisional FBSM bills, reimbursement charges, standby charges, revision of energy bills and supplementary bills for prior period etc. The provisional fixed charges (Rs. 22.53 Cr.) paid by BEST as per the Commission's Daily Order dated 6 February 2019 in Case No. 297 of 2018 is also included.

#The APPC for RE sources were approved in MTR Order excluding REC cost, however, in actual BEST has purchased REC. Therefore, it has resulted into higher APPC.

- 4.3 The Commission has scrutinised 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 months of October, 2019 to December, 2019. 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-G

- 4.4 TPC-G operates thermal as well as hydro generating stations. **The thermal generating station of TPC-G are placed in MoD stack by MSLDC whereas, the hydro is considered as must run.**
- 4.5 **BEST Undertaking has purchased 294.65 MUs, 304.53 MUs and 258.68 MUs of power from TPC-G during the months of October, November and December, 2019 as against 239.45 MUs approved in MTR Order.** The reason for monthly variation in power purchase quantum during Q3 period is mainly due to variation in PLF of various generating stations of TPC-G. The Table below shows the monthly/Quarterly Plant Availability Factor (PAF) vis-à-vis Plant Load Factor (PLF) of thermal generating stations of TPC-G during Q3 of FY 2019-20:

Months	Unit 5 (Multi-fired)		Unit 7 (Gas)		Unit 8 (Coal)	
	PAF (%)	PLF (%)	PAF (%)	PLF (%)	PAF (%)	PLF (%)
Oct-19	97.91%	67.46%	99.02%	89.50%	89.72%	79.40%
Nov-19	100.00%	74.80%	100.00%	98.47%	81.48%	78.56%
Dec-19	100.00%	79.66%	100.00%	63.00%	2.34*%	2.01*%
<b>Quarterly</b>	<b>99.50%</b>	<b>74.00%</b>	<b>99.80%</b>	<b>83.50%</b>	<b>57.60%</b>	<b>53.00%</b>

\*lower due to Annual planned outage

- 4.6 From the above Table, it can be seen that the actual PLF of thermal generating stations of TPC-G during Q3 period was lower than the normative value of 85% except for Unit 7 in





the month of October and November, 2019. In response to clarification sought against such lower PLF, BEST has stated that PLF of unit 5 and 8 was lower due to low system demand. Further, in the month of December, 2019 Unit 8 was under annual planned outage, hence, its PAF and PLF was lower. With regard to lower PLF of Unit-7 (Gas) during the month of December, 2019, it was clarified that the PLF of Unit-7 (Gas) was lower due to lesser availability of APM gas. From 6<sup>th</sup> December, 2019 onwards, the Daily Nominated Quantity (DNQ) of APM gas got reduced. The average DNQ from 6<sup>th</sup> December, 2019 to 31<sup>st</sup> December, 2019 was 0.61171 MMSCM as against ~0.94 MMSCM of average DNQ required for PLF of 100%.

- 4.7 Also, from the above Table it was observed that, although the PLF was lower during aforesaid period, the availability of generating stations was seen above normative except for unit 8 during the month December, 2019. In this regard, the Commission has asked BEST Undertaking to confirm whether BEST Undertaking has fully utilised availability declared by TPC-G during Q3 period. BEST Undertaking was also sought to confirm if MoD principle has been followed while scheduling the power. In response to above query, BEST Undertaking confirmed that it has fully utilised declared availability of all of its sources during Q3 of FY 2019-20.
- 4.8 With regard to MoD principle, BEST Undertaking replied that it has intimated MSLDC regarding its various LTOA/STOA power purchase contract whereby the thermal generating units of TPC-G contracted by BEST is placed under MOD stack by MSLDC while the other contracted sources are considered as must run. As per provisions of ABT order and FBSM Code, **based on availability schedule forecasted by generating stations and load requirement forecasted by State Pool participants(SPPs), MSLDC draw up the least cost despatch for the state as a whole as per MOD principle** approved by the Commission. Accordingly, target despatch schedule to generators and target drawl schedule to SPPs is issued by MSLDC for scheduling of power. MSLDC also carry out real-time operation on MOD principle in the State. In this regard the Commission asked to provide the details of Plant-wise scheduled generation given by MSLDC vis-à-vis actual generation achieved during the Q3 period, the same is as provided below:

Units	Oct-19		Nov-19		Dec-19	
	Scheduled Generation (MUs)	Actual Generation (MUs)	Scheduled Generation (MUs)	Actual Generation (MUs)	Scheduled Generation (MUs)	Actual Generation (MUs)
Unit-5	240.96	235.44	260.91	254.39	289.56	280.29
Unit-7	114.46	116.5	124.21	123.69	80.45	81.01
Unit-8	142.17	138.34	134.46	132.61	3.54	2.42
Hydro	120.17	115.76	112.29	113.40	141.84	142.35



Units	Oct-19		Nov-19		Dec-19	
	Scheduled Generation (MUs)	Actual Generation (MUs)	Scheduled Generation (MUs)	Actual Generation (MUs)	Scheduled Generation (MUs)	Actual Generation (MUs)
<b>Total TPC-G</b>	<b>617.76</b>	<b>606.04</b>	<b>631.87</b>	<b>624.09</b>	<b>515.39</b>	<b>506.07</b>

4.9 From the above Table it can be seen that, as against the total schedule of 1,756.02 MUs (617.76 MUs + 631.87 MUs + 515.39 MUs) given during Q3 period, actual generation achieved by TPC-G is 1736.20 MUs, reflecting an overall minor deviation of (1.63)%.

4.10 Further, considering that the monthly fixed charge payment is based on the cumulative availability of plant as per Regulation 48.3 of MYT Regulations 2015, the Commission sought for month wise and cumulative availability declared by TPC-G for its various generating stations during the Q3 period. TPC-G has submitted the details as shown in Table below:

Unit 5 (Thermal)	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Monthly Availability	100.0%	100.0%	100.0%	99.54%	80.73%	97.55%	97.91%	100.0%	100.0%
Cumulative Availability	100.0%	100.0%	100.0%	100%	96.11%	96.35%	96.58%	97.00%	97.41%
Unit 7 (Thermal)	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Monthly Availability	100.0%	100.0%	100.0%	100.0%	99.18%	100.0%	99.02%	100.0%	100.0%
Cumulative Availability	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.90%	99.94%	99.97%
Unit 8 (Thermal)	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Monthly Availability	99.25%	90.50%	97.78%	96.49%	90.05%	89.61%	89.72%	81.48%	2.34%
Cumulative Availability	99.25%	94.81%	95.79%	95.96%	94.77%	93.92%	93.31%	91.86%	81.77%
Bhira (Hydro)	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Monthly Availability	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cumulative Availability	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Bhivpuri (Hydro)	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Monthly Availability	100.0%	100.0%	100.0%	97.94%	100.0%	100.0%	100.0%	72.27%	100.0%
Cumulative Availability	100.0%	100.0%	100.0%	99.48%	99.58%	99.65%	99.70%	96.33%	96.74%
Khopoli (Hydro)	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Monthly Availability	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	81.11%	98.92%
Cumulative Availability	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.68%	97.82%

4.11 As it can be seen from the Table above, **the cumulative availability of all generating Units except Unit-8 (December, 2019) were above normative Target availability of 85%.** Hence, full monthly fixed cost was payable to these Units in line with Regulation 48.3 of MYT Regulations 2015. However, for **Unit-8 the cumulative availability was lower than Target availability mainly in the month of December, 2019 (due to annual planned outage).** Accordingly, the monthly fixed charge was payable on pro rata basis. The



Commission has verified the fixed charge payment from the invoice submitted and found to be in order.

4.12 **The weighted average power purchase cost for TPC-G (thermal and hydro) has been worked out at Rs. 4.11/ kWh, Rs. 4.12/kWh and Rs. 4.06/kWh for the months of October, November and December, 2019, respectively, which is lower as compared to MTR approved rate of Rs. 4.34/kWh. The variation in power purchase price is mainly because of following reasons:**

- **Due to variation in fuel parameters during Q3 period as compared to MTR approved parameters.**
- **Due to the change in actual quantum from various sources of TPC-G as compared to MTR approved quantum.**

**Fuel parameter Analysis:**

4.13 TPC-G generates power on Imported Coal, Domestic Natural Gas (under APM mechanism), Oil (LSHS), imported RLNG and Hydro. During Q3 period, it was observed that the energy charge with respect to coal based generating stations was lower whereas for gas based generating station it was higher as compared to respective MTR approved charges. The Table below shows the comparison of actual energy charges vis-à-vis approved energy charges for thermal generating station.

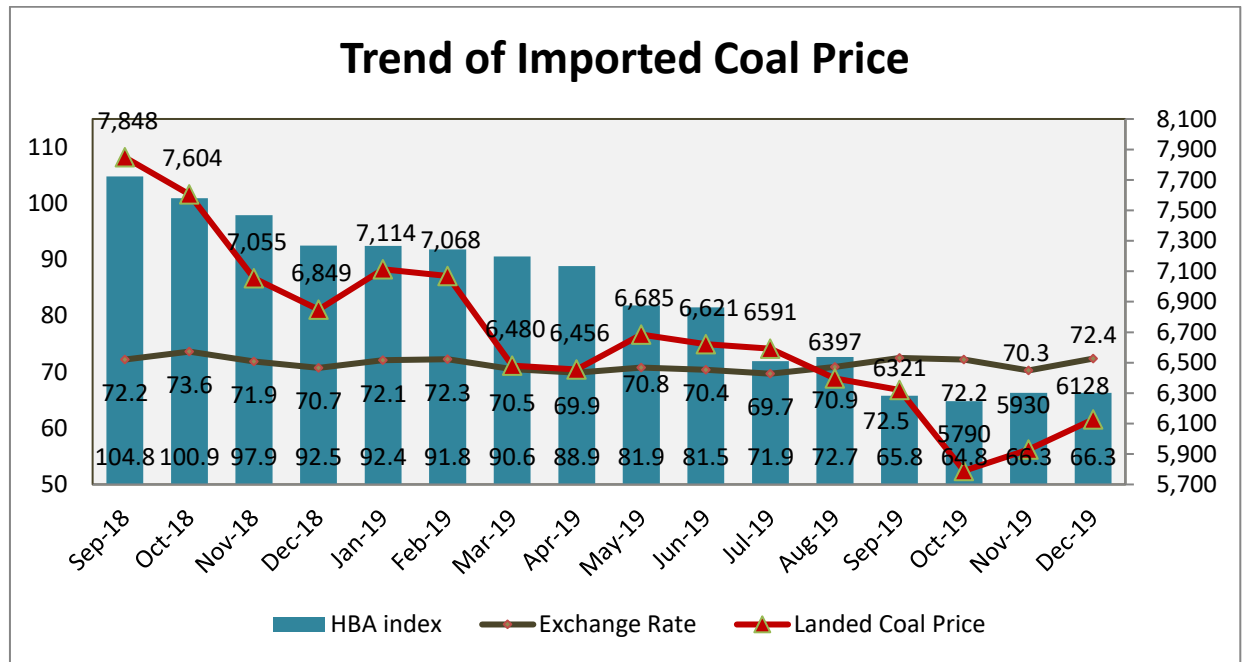
Units/ Months	Unit 5 (Multi-fired)		Variation	Unit 7 (Gas)		Variation	Unit 8 (Coal)		Variation
	Approved	Actual		Approved	Actual		Approved	Actual	
Oct-19	3.99	3.35	(0.63)	1.80	2.68	0.87	3.94	3.33	(0.61)
Nov-19	3.99	3.44	(0.55)	1.80	2.55	0.74	3.94	3.43	(0.51)
Dec-19	3.99	3.49	(0.50)	1.80	2.56	0.75	3.94	3.46	(0.49)

4.14 The above variation in energy charges is mainly due to variation in fuel prices during the respective period. To analyse the variation in fuel price, the Commission sought for fuel purchase bills during present quarter.

4.15 With regards to coal, TPC-G mainly procures imported coal from Indonesian market which is linked to Harga Batubara Acuan (HBA) index. The coal reference price, i.e., Harga Batubara Acuan or HBA index for Indonesian coal is set by Ministry of Energy and Mineral Resources (Indonesia). The Commission has asked BEST to confirm if the imported coal has been procured by TPC-G through competitive bidding along with documentary evidence. The Commission has also 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. In response to above, TPC-G replied that it has procured imported coal through competitive bidding route and submitted the document vide its data gap reply. TPC-G has also provided the HBA indices prevailing during Q3 period. The Commission has observed that the HBA indices and hence, the price of imported coal in international market has shown downward trend as compared to time of MTR Order when the HBA indices was very high (104.81 as shown in graph). This is mainly attributed to demand supply position of the global coal market. The graph below shows the trend of HBA indices vis-à-vis landed coal cost claimed by TPC-G from September 2018 to December, 2019.



4.16 From graph above, it can be observed that the **HBA index was at around 104.8 in September 2018 and has decreased to 66.30 in December, 2019.** Due to this the landed cost of coal and hence, energy charges during present quarter has been lower as compared to cost approved in MTR Order dated 12 September, 2018. **The landed cost of coal claimed by TPC-G is Rs. 5790/MT, Rs. 5930/MT and Rs. 6128/MT for the month of October, November and December, 2019 as against the MTR approved rate of Rs. 7154/MT.**

4.17 Further, the Commission has also scrutinised the sample bills provided in order to verify the landed cost of imported coal. The Table below provides the detailed computation of basic cost of imported cost for the month of November, 2019:

Month	16 Nov-19	29 Nov-19	Remark
Exchange Rate	71.71	71.73	Verified from SAP Entry
Supplier	PT KIDECO JAYA A	PT ADARO	Verified from Invoice



Month	16 Nov-19	29 Nov-19	Remark
Vessel Name	VEENUS	SAGARJEET	Verified from Invoice
HBA	66.27	66.27	Submitted by TPC-G
Coal Qty (MT)	77028.00	57528.00	Verified from Invoice
GCV (kcal/kg)	4954.00	4813.00	Verified from Invoice
Moisture (%)	24.76	29.54	Verified from Invoice
Ash (%)	2.98	1.65	Verified from Invoice
Sulphur (%)	0.09	0.09	Verified from Invoice
FOB (USD/MT)	50.12	46.82	Verified from Invoice
FOB Rs /MT	3594.15	3358.19	Calculated
Avg Base Price Rs./MT	3476.17		Calculated

4.18 As from Table above the average basic cost of imported coal for the month of November, 2019 is Rs. 3,476.17/MT. The landed cost of imported coal is arrived by adding the freight charges, excise duty, custom duty, GST compensation cess, insurance and other handling charges. The Commission has sought TPC-G to provide the details of above expenses. TPC-G in its data gap reply submitted the details, accordingly, the Commission worked out the landed cost of imported coal for the month of November as shown in Table below:

Sr. No	Particular	Source/Formula	Units	Price
1	Base price	As computed above	Rs./MT	3476.17
2	Freight charges	As per bills	Rs./MT	559.76
3	Excise + Custom Duty + C E Cess + insurance	As submitted	Rs./MT	625.45
4	Handling and wharfage	As submitted	Rs./MT	545.09
5	Other Fuel Handling Charges	As submitted	Rs./MT	822.96
6	<b>Total landed cost</b>		<b>Rs./MT</b>	<b>6029.43</b>

4.19 From the Table above, the landed cost of imported coal for the month of November, 2019 has been worked at Rs. 6029.43/MT. Although, the landed cost claimed by TPC-G in FAC computation for the month of November, 2019 is Rs. 5930.23/MT. The variation is mainly due to reason that the cost claimed by TPC-G in FAC computation pertains to cost of coal consumed in respective period from the inventory/stocks which is derived based on the weighted average cost of the inventory/stock and recent purchased coal. Whereas, the cost as calculated above pertains to recent purchase cost only, hence, it does not match exactly. Therefore, there is a variation in between the cost claimed by TPC-G and as computed by the Commission. However, the sample calculations are found to be in similar range as submitted by TPC-G. **The Commission has also verified the details of opening and closing fuel inventory along with its cost and found to be in order.**



4.20 Further, the Commission has also sought for details of GCV along with third party sampling report for GCV verifications. TPC-G submitted the details as shown in Table below:

Sr. No	GCV as Received (kcal/kg)	GCV as fired (kcal/kg)	GCV for energy billing (kcal/kg)	Remark
October-19	4,805	4,685	4,685	GCV for energy billing = GCV as received – stacking loss; subjected to max stacking loss of 150 kcal/kg
November-19	4,782	4,654	4,654	
December-19	4,927	4,736	4,777	

4.21 TPC-G has also submitted the third party sampling certificate issued by Bureau Veritas for the respective period. The Commission has verified the document submitted and found to be in order.

4.22 With regards to higher gas price and hence, energy charges for gas generating station (Unit 7), TPC-G stated the actual energy charge is higher than approved energy charge due to following reasons:

- Revised ONGC differential tariff which has increased from Rs. 5.7/MMBTU to Rs. 34.73/MMBTU.
- Transportation Charges got revised from Rs. 1.04/MMBTU to Rs 25.15 /MMBTU with effect from 1st July, 2019

4.23 Further, there has been an increase in the basic price of APM gas on account of scheduled revisions by MOPNG (Ministry of Petroleum & Natural Gas) every six months. TPC-G has submitted the sample gas bills issued by GAIL showing the above revised rate and the same has been verified.

4.24 Based on above, considering the downward price of imported coal and the upward price of APM Gas, the net impact of FAC has been worked out for respective months, as shown in Table below:

Particulars for Oct, 2019	Units	Unit 5	Unit 7	Unit 8	Impact
Energy Available to BEST	MUs	120.47	59.61	55.33	
Approved Energy Charge	Rs./kWh	3.99	1.80	3.94	
Actual Energy Charge	Rs./kWh	3.35	2.68	3.33	
Fuel Surcharge Adjustment	Rs./kWh	(0.63)	0.87	(0.61)	
<b>Refundable through FAC</b>	<b>Rs. Crore</b>	<b>(7.64)</b>	<b>5.20</b>	<b>(3.36)</b>	<b>(5.80)</b>





Particulars for Nov, 2019	Units	Unit 5	Unit 7	Unit 8	Impact
Energy Available to BEST	MUs	130.17	63.29	53.04	
Approved Energy Charge	Rs./kWh	3.99	1.80	3.94	
Actual Energy Charge	Rs./kWh	3.44	2.55	3.43	
Fuel Surcharge Adjustment	Rs./kWh	(0.55)	0.74	(0.51)	
<b>Refundable through FAC</b>	<b>Rs. Crore</b>	<b>(7.11)</b>	<b>4.70</b>	<b>(2.70)</b>	<b>(5.11)</b>

Particulars for Dec, 2019	Units	Unit 5	Unit 7	Unit 8	Impact
Energy Available to BEST	MUs	143.42	41.45	0.97	
Approved Energy Charge	Rs./kWh	3.99	1.80	3.94	
Actual Energy Charge	Rs./kWh	3.49	2.56	3.46	
Fuel Surcharge Adjustment	Rs./kWh	(0.50)	0.75	(0.49)	
<b>Refundable through FAC</b>	<b>Rs. Crore</b>	<b>(7.21)</b>	<b>3.12</b>	<b>(0.05)</b>	<b>(4.14)</b>

4.25 As can be seen from above, the net impact of change in fuel prices (i.e., increase in gas price and decrease in coal price) is negative in all the months of Q3, FY2020, i.e., refund of around Rs. (5.80) crore in October, 2019, Rs. (5.11) crore in November, 2019 and Rs. (4.14) crore in December, 2019. This has resulted into lowering of variable charge and thus total power purchase cost during respective period.

4.26 Based on above, the APPC of TPC-G for the months of October, November and December, 2019 worked out to be Rs. 4.11/kWh, Rs. 4.12/kWh and Rs. 4.06/kWh respectively as compared to MTR approved rate of Rs. 4.34/kWh. **The actual APPC is lesser as compared to approved APPC by Rs. (0.23)/kWh, Rs. (0.22)/kWh and Rs. (0.28)/kWh in October, November and December, 2019 respectively.**

#### **Renewable Purchase:**

4.27 In order to meet its RPO requirement, BEST Undertaking procure renewable power from both solar RE sources and non-solar RE sources. For solar RE power, BEST has long term power purchase agreement with Walwhan (Welspun) Solar Energy Maharashtra. The non-solar RE power has been procured through various generators (GRETA Energy Ltd. and Lokmangal Agro Ltd.) on short-term basis at preferential tariff.



4.28 BEST has purchased total 7.48 MUs, 7.11 MUs and 7.52 MUs of RE power (solar and non-solar) at a weighted average price of Rs. 7.46/kWh, Rs. 7.53/kWh and Rs. 7.47/kWh during the months of October, November and December, 2019. The Table below shows the summary of RE power purchased by BEST during Q3 of FY 2019-20:

Particular	As approved in MTR Order			Actual for October		
	Quantum (MUs)	% share	Rate (Rs./kWh)	Quantum (MUs)	% share	Rate (Rs./kWh)
Solar Sources:						
Welspun	31.50	3.94%	8.56	2.40	32.09%	8.56
New Solar	155.23	19.43%	2.72*	-	-	-
Non-Solar Sources:						
New Non- Solar (MU)	612.31	76.63%	2.87*	5.08	67.91%	6.94 <sup>#</sup>
<b>Total RE Power</b>	<b>799.04</b>	<b>100.00%</b>	<b>3.07</b>	<b>7.48</b>	<b>100.00%</b>	<b>7.46</b>
<b>REC Solar</b>	-	-	-	-	-	<b>1.13<sup>^</sup></b>
<b>REC Non-solar</b>	-	-	-	-	-	<b>6.92<sup>^</sup></b>
<b>APPC with REC Cost</b>						<b>18.22</b>

\*Generic Tariff solar and non-solar Tariff as considered in MTR Order

#Actual preferential Tariff for the month

<sup>^</sup>REC purchase in Rs.Crore

Particular	Actual for November			Actual for December		
	Quantum (MUs)	% share	Rate (Rs./kWh)	Quantum (MUs)	% share	Rate (Rs./kWh)
Solar Sources:						
Welspun	2.62	36.85%	8.56	2.45	32.58%	8.56
New Solar	-	-	-	-	-	-
Non-Solar Sources:						
New Non- Solar (MU)	4.49	63.15%	6.94 <sup>#</sup>	5.06	67.29%	6.94 <sup>#</sup>
<b>Total RE Power</b>	<b>7.11</b>	<b>100.00%</b>	<b>7.53</b>	<b>7.52</b>	<b>100.00%</b>	<b>7.47</b>
<b>REC Solar</b>	-	-	<b>0.38<sup>^</sup></b>	-	-	<b>0.67<sup>^</sup></b>
<b>REC Non-solar</b>	-	-	<b>11.37<sup>^</sup></b>	-	-	<b>13.40<sup>^</sup></b>
<b>APPC with REC Cost</b>			<b>24.05</b>			<b>26.19</b>

#Actual preferential Tariff for the month

<sup>^</sup>REC purchase in Rs.Crore

4.29 Further, apart from the RE power, BEST has also purchased REC of worth Rs. 8.06 Crore during October 2019, Rs. 11.75 crore in November 2019 and Rs. 14.07 Crore during December, 2019 as shown in Table above. However, in MTR Order no REC purchase was approved for BEST Undertaking. This additional REC cost has resulted





**in increase in power purchase cost from RE sources thus impacting average power purchase cost.** The APPC from RE sources considering the RE power purchase cost and REC cost, during the months of October, November and December, 2019 is Rs. 18.22/kWh, Rs. 24.05/kWh and Rs. 26.19/kWh, respectively, as compared to MTR approved rate of Rs.3.07/kWh. The reason for such an increase in APPC is explained in paras below.

- 4.30 The Commission in its MTR Order has approved the APPC from RE sources at Rs. 3.07/kWh. This approved APPC from RE sources has been arrived by the Commission considering solar and non-solar RPO obligation of BEST Undertaking. For solar RPO obligation, the Commission has considered solar purchase from M/s. Welspun Energy Maharashtra Ltd. at the rate of Rs. 8.56/kWh as approved in its Order dated 29 October, 2013 in Case No. 92 of 2013. The remaining requirement towards the solar RPO target was envisaged to be met through new solar sources instead of REC purchase. However, in absence of any identified RE sources at that time, the Commission has considered the additional requirement of Solar power for FY 2019-20 to be purchased at generic tariff of Rs. 2.72/kWh as determined in the Order in Case No. 204 of 2018. Similarly, for non-solar RPO obligation, the Commission has considered the same to be met through new non-solar sources at the generic tariff of Rs. 2.87/kWh as determined in the Order in Case No. 204 of 2018 instead of any REC purchase as proposed by BEST. Accordingly, the Commission in its MTR Order has approved the APPC from RPS as Rs. 3.07/kWh.
- 4.31 As against the above, in the present quarter the part of solar RPO target has been fulfilled through Welspun (20 MW) at approved Tariff of Rs. 8.56/kWh and remaining through purchase of solar REC. Also, part of non-solar RPO target has been fulfilled through non-solar power from GRETA Energy Ltd. and Lokmangal Agro. Ltd. at a weighted average preferential Tariff of Rs. 6.94/kWh as against the MTR approved generic Tariff of Rs. 2.87/kWh and remaining through purchase of non-solar REC. Due to this, the APPC has increased.
- 4.32 Further, **with regards to rationale for such REC purchase, BEST Undertaking had earlier replied that its long term tied up PPA is not sufficient to meet its solar RPO.** Further, the non-solar RE generators with whom BEST Undertaking has long term tied up, has not commissioned the project as per the agreement and hence, will not be able to supply renewable energy to BEST Undertaking. Therefore, **BEST had purchased REC which is in accordance with Regulation 7.2 of MERC (RPO-REC) Regulations, 2016.** The relevant provision of MERC (RPO-REC) Regulations, 2016 is reproduced below;

*“Every 'Obligated Entity' may meet its RPO target by way of own generation or procurement of power from RE developer or by way of purchase from other licensee or by way of purchase of renewable energy certificate or by way of combination of any of the above options.”*



4.33 BEST Undertaking in its previous submission in order to support its REC Purchase had also stated that, in its Judgment dated 20 April, 2015 in O.P. No. 1, 2 and 4 of 2013 and IA No. 291 and 420 of 2013, the APTEL has given the following among other directions regarding RPO compliance;

*“28... ii) ...If the distribution licensee is not able to tie up procurement of renewable energy to meet the RPO target, it may plan to purchase RECs to meet its RPO target as per the provisions of the Regulations. Advance planning of REC purchase will give opportunity to the distribution licensees/other obligated entities to purchase REC when the market conditions are more favorable to them... “*

4.34 BEST Undertaking in its present submission has stated that the Commission in its recent MYT Order dated 30 March 2020 in Case No. 324 of 2019, has provisionally approved the procurement of Solar RE, Non-Solar RE and Solar & Non-solar RECs. BEST further stated that it is in the process of initiating the bidding process to procure solar as well as non-solar power on long term basis. Therefore, based on above the Commission has considered the respective amount towards REC purchase in this FAC approval. The Commission has also verified the respective amount and cost of RE purchases during the aforesaid period from the bills and documents as submitted by BEST Undertaking.

**Traders:**

4.35 Bilateral Power Purchase (Traders) sources for the months of October to December, 2019, mainly include PTC India Ltd., Kreate Energy Pvt. Ltd., Dhariwal Infrastructure, Adani Enterprises, GMRETL and IEX. BEST Undertaking has purchased bilateral power during aforesaid period after inviting e-tender through Ministry of Power's DEEP e-portal, in line with MoP guidelines on short term competitive bidding. BEST Undertaking has submitted NIT, Bid document as well as reverse auction result as a documentary evidence for bilateral purchase.

4.36 **BEST has purchased power of 95.23 MUs (including IEX) during the month of October, 2019, 61.11 MUs (including IEX) during the month of November, 2019 and 96.19 MUs (only IEX) during the month of December, 2019.** The reason for variation in bilateral power purchase as stated by BEST Undertaking was on account of seasonal variation of demand and availability of contracted sources. BEST further stated that, as the month of October, 2019 was warmer, therefore, the quantum of bilateral purchase during the said month was higher as compared to November, 2019. However, in the month of December BEST has purchased higher bilateral power, due to scheduled outage of TPC-G's Unit-8 and lower generation from Unit-7 due to lower availability of APM Gas as mentioned above.



- 4.37 BSET Undertaking further clarified that power purchase against demand is carried out by BEST using approved contracted sources. The availability from all contracted sources including RE sources in a month is considered to work out bilateral power requirement to meet any shortfall and competitive bidding for short term bilateral power purchase is carried out in advance. In real time, any shortfall in power over and above availability declared by contracted conventional /RE source/Short term bilateral contract is met from power purchase from Power exchange on day-ahead basis. Also, to optimize the power purchase cost, based on market scenario power is also purchased from Power exchange.
- 4.38 **The weighted average power purchase price from Traders during the months of October to December, 2019 were Rs. 3.81/ kWh, Rs. 3.65 /kWh and Rs. 3.39 /kWh, respectively, as compared to the MTR approved rate of Rs. 3.59 /kWh.** BEST Undertaking has submitted the soft copies of invoices vide its data gap and the same was found to be in order. In view of above, the Commission has considered the short-term power as submitted by BEST as the same has been procured through competitive bidding, on DEEP e-portal and IEX.
- 4.39 Further, the Commission has also asked BEST Undertaking to confirm if there was any surplus power available during Q3 and the details of revenue earned from it. In its reply BEST stated that there was surplus power of 1.82 MUs in the month of October, 2019. **This surplus power was sold in IEX and revenue of Rs.0.53 Crores was earned which has been adjusted against power purchase from IEX.** The price at which BEST Undertaking has sold surplus power was Rs. 2.91/kWh. The Commission has compared the price of sale of surplus power by BEST vis-à-vis the Market Clearing Price (MCP) prices of power traded at IEX. The average MCP prices prevailed for the month of October, 2019 was at Rs. 2.71/kWh. BEST has managed to sell the surplus power at a rate higher than the MCP rate as already mentioned above. Accordingly, the surplus sale is considered as submitted by BEST.

#### **FBSM and Others:**

- 4.40 BEST Undertaking has made adjustment in the Total Power Purchase on account of “Total Monthly Variation of prior period” mainly for the month of December, 2019. The monthly variation as mentioned above is mainly on account of provisional bills for standby energy support provided by MSEDCL for prior period, Debit/Credit note for refund towards reimbursement of Open Access Charges, provisional fixed charge under Intra State ABT for the Financial Year 2011-12 to FY 2017-18 vide MERC daily order dated 15-01-2019 in Case No. 297 of 2018 & in Case No. 25 & 28 of 2019 dated 06-02-2019 etc. The Table below shows the summary of “Total Monthly Variation of prior period” as considered during the respective months of Q3:



**October, 2019:**

Sr.No	Particulars	MU	Rs. Cr.
1	Short Term Open Access Application Processing Fee (Ref.No. MSLDC/BEST/R0/OCT-19, dtd. 24-09-2019) paid to MSLDC for October-2019.	-	0.00075
2	Payment in September-2019 regarding balance GST amount of Non-Solar REC's purchased through Trading on PXIL (Power Exchange India Ltd.) platform from November-2017 to March-2018 to fulfill the non-solar RPO of BEST for FY 2017-18 ( <b>Total 02 Nos. Invoices</b> )	-	0.034
Total Variations		-	<b>0.035</b>

**November, 2019:**

Sr.No	Particulars	MU	Rs. Cr.
1	Short Term Open Access Application Processing Fee (Ref.No. MSLDC/BEST/R0/NOV-19, dtd. 24-10-2019) paid to MSLDC for November-2019.	-	0.00075
2	Debit Note No. AEL/Dec19/000042 dtd. 04-12-2019 towards reimbursement of Open Access charges to M/s. AEL for the month of Oct-2019 & Nov-2019.	-	0.0024
Total Variations		-	<b>0.0032</b>

**December, 2019:**

Sr.No	Particulars	MU	Rs. Cr.
1	Short Term Open Access Application Processing Fee (Ref.No. MSLDC/BEST/R0/Dec19, dtd. 27-11-2019) paid to MSLDC for December-2019.	-	0.00075
2	Debit Note No. GMR/BEST/01-A dtd. 18-12-2019 towards reimbursement of Open Access charges to M/s. GMR for the month of Nov-2019.	-	0.0004
3	Provisional Bill Ref: CE/PP/STBY/Apr-17/No. 35088 dtd. 20-12-2019 for standby energy support provided by MSEDCL to BEST for the month of April-2017	0.34	0.139
4	Provisional Bill Ref: CE/PP/STBY/May-17/No. 35089 dtd. 20-12-2019 for standby energy support provided by MSEDCL to BEST for the month of May-2017	0.94	0.356



Sr.No	Particulars	MU	Rs. Cr.
5	Provisional Bill Ref: CE/PP/STBY/Jun-17/No. 35092 dtd. 20-12-2019 for standby energy support provided by MSEDCL to BEST for the month of June-2017	1.01	0.345
6	Payment of 20% Bill amount of Provisional Fixed Charge Bill Ref: MS/MSPC/FCR BILL/No. 00158, dtd.25-01-2019 under Intra State ABT for the Financial Year 2011-12 to FY 2017-18 vide MERC daily order dtd. 15-01-2019 in Case No. 297 of 2018 & in Case No. 25 & 28 of 2019 dtd. 06-02-2019.	-	22.53
7	Invoice No. WSMHL/FY 2018-19/ADDITIONAL Dtd. 31 July, 2019 for Purchase of additional Solar RE power generated from Welspun Energy Maharashtra Pvt. Ltd. plant, 20 MW Solar Plant Mangalwedha for FY 2018-19.	0.90	0.09
Total Variations		<b>3.19</b>	<b>23.46</b>



4.41 The Table below shows the summary of variation in power purchase in terms of per unit variable charge, per unit fixed charge and average power purchase cost for BEST during Q3 of FY 2019-20 as compared to MTR approved figures:

Particular	Approved* for October, 2019						Actual for October, 2019						Variation					
	Quantum (MUs)	Variable cost (Rs. Cr)	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr)	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr) (ΔQ)	Fixed cost (Rs. Cr) (ΔP)	Variable charge (Rs./kWh)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)
	a	b	C	d	e	f=c+e	a	b	c	d	E	f=c+e	A	b	c	d	e	f=d+e
TPC-G	293.45	86.41	2.94	41.05	1.40	<b>4.34</b>	294.65	80.03	2.72	41.05	1.39	<b>4.11</b>	1.2	(6.38)	-	(0.22)	(0.01)	(0.23)
RE Sources	66.59	20.47	3.07	-	-	<b>3.07</b>	7.48	13.64	18.22	-	-	<b>18.22</b>	(59.11)	(6.83)	-	15.15	-	15.15
Traders	84.45	30.32	3.59	-	-	<b>3.59</b>	95.23	36.28	3.81	-	-	<b>3.81</b>	10.78	5.96	-	0.22	-	0.22
Total Variation of Prior period	-	-	-	-	-	-	-	0.04	-	-	-	-	-	0.04	-	-	-	-
<b>Total</b>	<b>444.49</b>	<b>137.20</b>	<b>3.09</b>	<b>41.05</b>	<b>0.92</b>	<b>4.01</b>	<b>397.37</b>	<b>129.98</b>	<b>3.27</b>	<b>41.05</b>	<b>1.03</b>	<b>4.30</b>	(47.12)	(7.22)	-	0.18	0.11	<b>0.29</b>

Particular	Approved* for November, 2019						Actual for November, 2019						Variation					
	Quantum (MUs)	Variable cost (Rs. Cr)	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr)	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr) (ΔQ)	Fixed cost (Rs. Cr) (ΔP)	Variable charge (Rs./kWh)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)
	a	b	C	d	e	f=c+e	a	b	c	d	E	f=c+e	a	b	c	d	e	f=d+e
TPC-G	293.45	86.41	2.94	41.05	1.40	<b>4.34</b>	304.53	84.41	2.77	41.05	1.35	<b>4.12</b>	11.08	-2.0	-	-0.17	-0.05	-0.22



Particular	Approved* for November, 2019						Actual for November, 2019						Variation					
	Quantum (MUs)	Variable cost (Rs. Cr)	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr)	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr) (ΔQ)	Fixed cost (Rs. Cr) (ΔP)	Variable charge (Rs./kWh)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)
	a	b	C	d	e	f=c+e	a	b	c	d	E	f=c+e	a	b	c	d	e	f=d+e
RE Sources	66.59	20.47	3.07	-	-	3.07	7.11	17.11	24.05	-	-	24.05	-59.48	-3.36	-	20.98	-	20.98
Traders	84.45	30.32	3.59	-	-	3.59	61.11	22.33	3.65	-	-	3.65	-23.34	-7.99	-	0.06	-	0.06
Total Variation of Prior period	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>444.49</b>	<b>137.20</b>	<b>3.09</b>	<b>41.05</b>	<b>0.92</b>	<b>4.01</b>	<b>372.76</b>	<b>123.85</b>	<b>3.32</b>	<b>41.05</b>	<b>1.10</b>	<b>4.42</b>	-71.73	-13.35	-	0.23	0.18	<b>0.41</b>

Particular	Approved* for December, 2019						Actual for December, 2019						Variation					
	Quantum (MUs)	Variable cost (Rs. Cr)	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr)	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr) (ΔQ)	Fixed cost (Rs. Cr) (ΔP)	Variable charge (Rs./kWh)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)
	a	b	c	d	e	f=c+e	a	b	c	d	E	f=c+e	A	b	c	d	e	f=d+e
TPC-G	293.45	86.41	2.94	41.05	1.40	4.34	258.68	66.85	2.58	38.21	1.48	4.06	(34.77)	(19.56)	(2.84)	(0.36)	0.08	(0.28)
RE Sources	66.59	20.47	3.07	-	-	3.07	7.52	19.69	26.19	-	-	26.19	(59.07)	(0.78)	-	23.12	-	23.12
Traders	84.45	30.32	3.59	-	-	3.59	96.19	32.63	3.39	-	-	3.39	11.74	2.31	-	(0.20)	-	(0.20)
Total Variation	-	-	-	-	-	-	3.19	23.46	-	-	-	-	3.19	23.46	-	-	-	-



Particular	Approved* for December, 2019						Actual for December, 2019						Variation					
	Quantum (MUs)	Variable cost (Rs. Cr)	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr)	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr) ( $\Delta Q$ )	Fixed cost (Rs. Cr) ( $\Delta P$ )	Variable charge (Rs./kWh)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)
	a	b	c	d	e	f=c+e	a	b	c	d	E	f=c+e	A	b	c	d	e	f=d+e
of Prior period																		
<b>Total</b>	<b>444.49</b>	<b>137.20</b>	<b>3.09</b>	<b>41.05</b>	<b>0.92</b>	<b>4.01</b>	<b>365.58</b>	<b>142.62</b>	<b>3.90</b>	<b>38.21</b>	<b>1.05</b>	<b>4.95</b>	(78.91)	5.42	(2.84)	0.81	0.13	<b>0.94</b>

*The power purchase quantum/cost approved in MTR Order is on yearly basis, however monthly approved numbers are derived from comparison purpose*





4.42 Based on above, on an overall basis the **key reasons for variation in APPC are due to variation in actual quantum of power purchase from TPC-G coupled with variation in fuel prices, additional REC purchase for solar and non-solar RPO target, increased short term power purchase rate and adjustment towards monthly variation related to prior period and other settlements.** Accordingly, the Commission allows the average power purchase cost of **Rs. 4.30/kWh** for the month of October, 2019, **Rs. 4.42/kWh** for the month of November, 2019 and **Rs. 4.95/kWh** for the month of December, 2019.

#### **5. FAC on account of fuel and power purchase cost (F)**

5.1 The Commission has worked out the average power purchase cost for the month as shown above. The same has been compared with the average power purchase cost approved by the Commission in Tariff Orders dated 12 September, 2018 and arrived at differential per unit rate at which ZFAC is to be passed on to the consumers.

5.2 The following Table shows the ZFAC worked out by the Commission on account of difference in fuel and power purchase cost for the month of October, 2019 to December, 2019.

<b>S. No.</b>	<b>Particulars</b>	<b>Units</b>	<b>Oct, 2019</b>	<b>Nov, 2019</b>	<b>Dec, 2019</b>
1	Average power purchase cost approved by the Commission	Rs./kWh	4.01	4.01	4.01
2	Actual average power purchase cost	Rs./kWh	4.30	4.42	4.95
3	Change in average power purchase cost (=2 -1)	Rs./kWh	0.29	0.41	0.94
4	Net Power Purchase	MU	397.37	372.76	365.58
<b>5</b>	<b>Change in fuel and power purchase cost (=3 x 4/10)</b>	<b>Rs. Crore</b>	<b>11.68</b>	<b>15.42</b>	<b>34.23</b>

#### **6. Adjustment for over recovery/under recovery (B)**

6.1 Adjustment factor for over recovery/under recovery (B) for the period of October, 2019 to December, 2019, the adjustment factor to be added/reduced is as below;

<b>S. No.</b>	<b>Particulars</b>	<b>Units</b>	<b>Oct, 2019</b>	<b>Nov, 2019</b>	<b>Dec, 2019</b>
1.1	Incremental cost allowed to be recovered in Month n-4	Rs. Crore	29.79	9.66	23.61
1.2	Incremental cost in Month n-4 actually recovered in month n-2	Rs. Crore	27.12	9.12	26.48



S. No.	Particulars	Units	Oct, 2019	Nov, 2019	Dec, 2019
1.3	(over-recovery)/under-recovery (=1.1 - 1.2)	Rs. Crore	2.67	0.54	(2.86)
2.0	Carried forward adjustment for over-recovery/under-recovery attributable to application of ceiling limit for previous month	Rs. Crore	0.61	-	-
3.0	<b>Adjustment factor for over-recovery/under-recovery (1.3+2.0)</b>	<b>Rs. Crore</b>	3.28	0.54	(2.86)

6.2 While working out adjustment factor, BEST Undertaking has considered incremental cost allowed to be recovered as Rs. 30.02 Crore for the month of October, Rs. 9.09 crore for November, Rs. 26.79 crore for December, 2019 and carry forwards adjustment for the month of October as Rs. 0.25 Crore. BEST Undertaking has considered the above values as per its own computation of FAC pertaining to Q1 and Q2 of FY 2019-20. However, the Commission in its post facto approval of Q1 and Q2 had rectified certain errors and has worked out incremental cost allowed to be recovered as Rs. 29.79 crore for October, Rs. 9.66 crore for November and Rs. 23.61 crore for December and carry forwards adjustment as Rs. 0.61 Crore for October, 2019. The Commission has considered the same in this FAC approval.

## 7. Carrying Cost for over recovery/under recovery (B)

7.1 The following Table shows the month wise interest rate and amount worked out as Carrying cost for under/over recovery for the month of October, 2019 to December, 2019.

S. No.	Particulars	Units	Oct, 2019	Nov, 2019	Dec, 2019
1	Adjustment factor for over-recovery/under-recovery	Rs. Crore	3.275	0.539	(2.864)
2	Applicable Interest rate	%	9.55%	9.50%	9.40%
3	<b>Carrying cost for over-recovery/under-recovery</b>	<b>Rs. Crore</b>	<b>0.026</b>	<b>0.004</b>	<b>(0.022)</b>

## 8. Disallowance due to excess Distribution Loss

8.1 Regulation 10.8 of MYT Regulations, 2015 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 ZFAC 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 ZFAC 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 distribution losses of the Distribution Licensee exceed the level approved by the Commission, the amount of ZFAC corresponding to the excess distribution losses (in kWh terms) shall be deducted from the total ZFAC recoverable”*

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

S.No.	Particulars	Units	Approved in Tariff Order	Actual up to Oct-19	Actual up to Nov-19	Actual up to Dec-19
1	Net Energy input at Distribution Voltages	MU	5,158.63	3,000.33	3,409.83	3,796.40
2	Energy sales (metered) at Distribution voltages	MU	4,869.75	2,847.41	3,225.79	3,577.86
3	Distribution Loss (=1-2)	MU	288.88	152.92	184.05	218.54
4	Distribution Loss as % of net energy input (=3/1)	%	5.60 %	5.10%	5.40%	5.76%
5	Excess Distribution Loss = [Distribution Loss (4) - Distribution loss approved] x Net Energy Input (1)	MU	-	-	-	0.61
6	<b>Disallowance of FAC due to excess Distribution Loss</b>	<b>Rs. Crore</b>	-	-	-	<b>0.06</b>

8.3 As seen from the above Table, cumulative distribution loss is 5.10% for the month of October, 2019, 5.40% for November, 2019 and 5.76% for the month of December, 2019. **The cumulative distribution loss is observed higher than the approved Distribution Loss of 5.60% in December, 2019. Hence, there is excess distribution loss of 0.61 MU and disallowance of FAC of Rs. 0.06 crore in December, 2019 on account of excess distribution loss.**

## 9. Summary of Allowable ZFAC

9.1 The summary of the FAC amount as approved by the Commission for the month of October, 2019 to December, 2019 which is allowed to be recovered in the billing month of January, 2020 to March, 2020 is as shown in the Table below:



S. No.	Particulars	Units	Oct, 2019	Nov, 2019	Dec, 2019
<b>1.0</b>	<b>Calculation of ZFAC</b>				
1.1	Change in cost of generation and power purchase attributable to Sales within the License Area (F)	Rs. Crore	11.68	15.42	34.23
1.2	Carrying cost for over-recovery/under-recovery (C)	Rs. Crore	0.03	0.00	(0.02)
1.3	Adjustment factor for over-recovery/under-recovery (B)	Rs. Crore	3.28	0.54	(2.86)
<b>1.4</b>	<b>ZFAC = F+C+B</b>	<b>Rs. Crore</b>	<b>14.98</b>	<b>15.96</b>	<b>31.34</b>
<b>2.0</b>	<b>Calculation of FAC Charge</b>				
2.1	Energy Sales within the License Area	MU	402.38	378.38	352.07
2.2	Excess Distribution Loss	MU	-	-	0.61
2.3	ZFAC per kWh	Rs./kWh	0.37	0.42	0.89
2.4	Cap at 20% of variable component of tariff	Rs./kWh	0.97	0.97	0.97
2.5	FAC Charge allowable (Minimum of 2.3 and 2.4)	Rs./kWh	0.37	0.42	0.89
<b>3.0</b>	<b>Recovery of FAC</b>				
3.1	Allowable FAC [(2.1 x 2.5)/10]	Rs. Crore	14.98	15.96	31.34
3.2	FAC disallowed corresponding to excess Distribution Loss [(2.2 x 2.5)/10]	Rs. Crore	-	-	0.06
<b>4.0</b>	<b>Total FAC based on category wise and slab wise allowed to be recovered</b>	<b>Rs. Crore</b>	<b>14.98</b>	<b>15.96</b>	<b>30.50</b>
<b>5.0</b>	<b>Carried forward FAC for recovery during future period</b>	<b>Rs. Crore</b>	-	-	0.78

9.2 It can be seen from the above Table that standalone FAC for the months of October to December, 2019 is Rs. 14.98 Crore, Rs. 15.96 Crore and Rs. 31.34 Crore, respectively. Based on total energy sales, FAC per unit has been worked out as Rs. 0.37/kWh, Rs. 0.42/kWh and Rs. 0.89/kWh for the months of October to December, 2019, respectively. Further, the Regulation 10.9 of MYT Regulations, 2015 specifies as:

*Provided that the monthly ZFAC 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:*

9.3 The FAC per unit for the months of October, 2019 to December, 2019 are lower than the capping of 20% cap specified in Regulation as shown in Table above. Hence, there is no restriction triggered with regards to such ceiling for the overall FAC per unit (computed



based on standalone FAC and total sales) for months of October, 2019 to December, 2019. Accordingly, FAC per unit leviable is considered as Rs. 0.37/kWh, Rs. 0.42/kWh and Rs. 0.89/kWh for the months of October to December, 2019, respectively.

- 9.4 However, while working out Category wise and Slab wise FAC Rate (Rs./kWh) based on above ceiling rate, it was observed that for some of the categories, the Slab wise FAC Rate (Rs./kWh) worked out was above 20% of energy charges applicable for respective category. Therefore, the allowable FAC is again reworked as Rs. 30.50 Crore for December 2019, considering the 20% capping on energy charges of individual category. Hence, an amount equivalent of Rs. 0.78 Crore (Rs. 31.34 Crore minus Rs. 30.50 Crore minus Rs. 0.06 Crore) got unrecovered in December due to applicability of 20% FAC cap on these individual consumer categories. The same is then considered as carry forward adjustment for next month, i.e., January.
- 9.5 Further, as against the above, BEST Undertaking has erroneously computed FAC allowable as Rs. 14.85 Crore, Rs. 15.39 Crore and Rs. 36.41 Crore (inclusive of carry forward) for the month of October, November and December, 2019 respectively. This is mainly due to error in adjustment factor computation as stated in para 6.2 above. The Table below shows the summary of FAC (inclusive of carry forward) claimed vis-à-vis approved for Q3 of FY 2019-20:

Particular	Units	Claimed			Total	Approved			Total
		Oct	Nov	Dec		Oct	Nov	Dec	
FAC	Rs. Crore	14.85	15.39	34.48	<b>64.72</b>	14.98	15.96	30.50	<b>61.44</b>
Carried forward FAC	Rs. Crore	-	-	1.93	<b>1.93</b>	-	-	0.78	<b>0.78</b>
<b>Total FAC</b>	Rs. Crore	<b>14.85</b>	<b>15.39</b>	<b>36.41</b>	<b>66.65</b>	<b>14.98</b>	<b>15.96</b>	<b>31.28</b>	<b>62.22</b>

- 9.6 **Based on above total quarterly FAC (inclusive of carry forward) worked out by BEST Undertaking stands at Rs. 66.65 Crore, however, the Commission has worked out the same as Rs. 62.22 Crore. Hence, there is an over-recovery of Rs. 4.43 Crore which is required to be refunded to consumers.** However, as FY 2019-20 is already over, therefore, above adjustment will be rolled over in next FAC approvals (i.e., FAC of Q4 of FY 2019-20) and finally would be reconciled and adjusted in the final True up of FY 2019-20.

## 10. Recovery from Consumers:



10.1 Regulation 10.9 of MERC MYT Regulations, 2015 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:—*

*ZFAC Cat (Rs/kWh) = [ZFAC / (Metered sales + Unmetered consumption estimates + Excess distribution losses)] \* k \* 10,*

*Where:*

*ZFAC Cat = ZFAC 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 ZFAC 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 ZFAC 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....”*

10.2 The Commission has worked out FAC per unit for each category of consumer based on the formula provided in the above Regulations. The Commission observed that there is an under recovery of ZFAC in absolute terms on considering category wise per unit FAC worked out and category wise actual sales for the month of October, 2019 to December, 2019.

10.3 The following Table shows per unit ZFAC to be charged to the consumers of BEST Undertaking for the billing month of January, 2020 to March, 2020.



S. No.	Consumer categories	Slab	ZFAC to be levied in billing month of January' 2020	ZFAC to be levied in billing month of February' 2020	ZFAC to be levied in billing month of March' 2020
			Rs./kWh	Rs./kWh	Rs./kWh
<b>(A)</b>	<b>LT Category</b>				
1	LT - I (A) Residential-BPL	0 - 30	0.13	0.14	0.20
2	LT - I (B) Residential	0 - 100	0.17	0.19	0.29
3		101 - 300	0.30	0.33	0.74
4		301 - 500	0.42	0.46	1.10
5		> 501	0.49	0.54	1.27
6	LT - II (A) Commercial	0 – 20 kW	0.40	0.45	1.02
7	LT - II (B) Commercial	>20 and ≤ 50 kW	0.43	0.47	1.02
8	LT - II (C) Commercial	>50 kW	0.44	0.48	1.10
9	LT - III (A) Industry	Up to 20kW	0.36	0.40	0.94
10	LT - III (B) Industry	>20 kW	0.39	0.43	0.93
11	LT - IV PWW	all units	0.39	0.43	0.92
12	LT - V Advertisement & Hoardings	all units	0.65	0.72	1.39
13	LT - VI Street Lights	all units	0.40	0.44	0.84
14	LT - VII (A) Temp-Religious	all units	0.29	0.32	0.72
15	LT - VII (B) Temp-Others	all units	0.51	0.57	1.35
16	LT - VIII Crematorium & Burial Grounds	all units	0.29	0.32	0.77
17	LT - IX (A) Public Service	all units	0.38	0.42	1.00
18	LT - IX (B) Public Service Others	all units	0.40	0.44	1.05
19	LT - X (A) Agriculture- Pumpsets	all units	0.21	0.23	0.50
20	LT - X (B) Agriculture-Others	all units	0.29	0.32	0.75
21	LT - XI Electric Vehicle (EV) Charging Stations	all units	0.43	0.46	0.90
<b>(B)</b>	<b>HT Category</b>				
22	HT - I Industry	all units	0.41	0.45	1.08
23	HT - II Commercial	all units	0.43	0.47	1.12
24	HT - III Group Housing	all units	0.36	0.39	0.94
25	HT - IV PWW	all units	0.39	0.43	1.02
26	HT-V (A) Railways, Metro & Monorail (110/132 kV)	all units	-	-	-





27	HT-V (B) Railways, Metro & Monorail (33kV)	all units	0.38	0.41	0.99
28	HT-VI (A) Public Service	all units	0.39	0.43	1.03
29	HT-VI (B) Public Service-Others	all units	0.42	0.46	1.09
30	HT-VII Temporary Supply	all units	0.46	0.51	1.21
31	HT-VIII Electric Vehicle (EV) Charging Stations	all units	-	-	-

## 11. Summary

11.1 The Table below shows the summary of FAC claimed by BEST vis-à-vis approved by the Commission for Q3 of FY 2019-20:

Particular	Month	Claimed	Approved	Remarks
FAC (Rs. Cr.)	October	14.85	14.98	<b>For Q3, 2019 (Rs. 62.22 Cr.- Rs. 66.65 Cr.) =Rs.(4.43) Cr. refundable</b>
	November	15.39	15.96	
	December	34.48	30.50	
Carried forward FAC (Rs. Cr.)	October	-	-	
	November	-	-	
	December	1.93	0.78	
Total FAC (Rs Cr.)	October	14.85	14.98	
	November	15.39	15.96	
	December	36.41	31.28	
<b>Q3 FAC</b>	<b>Total</b>	<b>66.65</b>	<b>62.22</b>	
<b>FAC per Unit</b>	<b>October</b>	<b>0.37</b>	<b>0.37</b>	
	<b>November</b>	<b>0.41</b>	<b>0.42</b>	
	<b>December</b>	<b>0.97</b>	<b>0.89</b>	

11.2 BEST has computed total FAC of Rs. 66.65 Cr. against which the Commission has approved Rs. 62.22 Cr. Thus, Rs. 4.43 Cr. is disallowed. Since the recovery of this amount is already done, the above adjustment will be rolled over in next FAC approvals (i.e., FAC of Q4 of FY 2019-20) and finally would be adjusted in the final True up of FY 2019-20.

