

**MAHARASHTRA ELECTRICITY REGULATORY COMMISSION**  
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**Ref. No. MERC/FAC/20182019/E-Letter**

**Date: 26 September, 2020**

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

**Subject:** Post facto approval of TPC-D's Fuel Adjustment Charges (FAC) for the period of July, 2019 to September, 2019.

**Reference:** 1. TPC-D's FAC submission dated 28 February 2020 for post-facto approval of FAC for the period from July, 2019 to September, 2019.

2. Replies to Data gap submitted on 13 June and 3 August 2020

Sir,

Upon vetting the FAC calculations for the months of July, 2019 to September, 2019 as mentioned in the above reference, the Commission has accorded post facto approval to TPC-D for charging FAC to its consumers as shown in the table below:

<b>Month</b>	<b>July, 2019</b>	<b>Aug, 2019</b>	<b>Sep, 2019</b>
Z <sub>FAC</sub> allowed for recovery (Rs. Crore)	11.44	12.00	17.69

The cumulative FAC for the last two months of quarter as worked out by the Commission stands at Rs. 29.69 crore, however, as against this TPC-D has actually recovered Rs. 24.01 Crore only. Hence, there is an under-recovery of amount Rs. 5.67 Crore (Rs. 29.69 Crore – Rs. 24.01 Crore) which is due to reason mentioned in para **Error! Reference source not found.** of the enclosed Report. Therefore, TPC-D is allowed to recover additional FAC of Rs. 5.67 Crore from consumers. Since, FY 2019-20 is already over, the above adjustment will be rolled over in next FAC approvals (i.e., FAC of Q3 of FY 2019-20) and finally 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 objective for post facto approval of Q2 of FY 2019-20 is only to carry forward the allowance or disallowance to next quarter and subsequently 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 July, 2019 to September, 2019.



**POST FACTO APPROVAL FOR FAC CHARGES FOR THE MONTHS OF JULY, 2019  
to SEPTEMBER, 2019**

**Subject:** Post facto approval of TPC-D's Fuel Adjustment Charges (FAC) for the period of July, 2019 to September, 2019.

**Reference:** TPC-D's FAC submission dated 28 February, 13 June and 3 August 2020 for post-facto approval of FAC for the period from July, 2019 to September, 2019.

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

1.1 TPC-D has submitted FAC submissions for the months of July, 2019 to September, 2019 as referred above. Upon vetting the FAC calculations, taking cognizance of all the submissions furnished by TPC-D, the Commission has accorded post facto approval for the FAC amount to be charged in the billing months of September, 2019 to November, 2019.

**2. Background**

2.1 On 21 October, 2016, the Commission has issued Tariff Order for TPC-D, (Case No.47 of 2016) for True-up of FY 2014-15, provisional Truing-up for FY 2015-16, and Aggregate Revenue Requirement and Tariff for FY 2016-17 to 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 TPC-D (Case No.69 of 2018) 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 MYT Tariff Order for TPC-D (Case No.326 of 2019) for Truing-up of FY 2017-18 and FY 2018-19, provisional Truing-up for FY 2019-20, and Aggregate Revenue Requirement and Tariff for FY 2020-21 to FY 2024-25. 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 16 January, 2017, the Commission accorded prior approval to 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 28 February, 13 June and 3 August 2020 TPC-D has filed FAC submissions for the months of July, 2019 to September, 2019 for post facto approval. The Commission has scrutinized the submissions provided by TPC-D and has also verified the fuel and power purchase bills provided along with its submissions.

### 3. Energy Sales of the Licensee

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

Consumer Category	Approved by the Commission (MU) (I)	Monthly Approved (MU) (II=I/12)	Actual Sales		
			July' 19 (MU) (III)	August '19 (MU) (IV)	September'19 (MU) (V)
<b>LT Category</b>					
LT I(B) – Residential	2072.63	172.72	175.31	159.31	158.00
LT II(A) - Commercial upto 20 kW	163.38	13.62	15.32	15.28	14.26
LT II(B) - Commercial 20 to 50 kW	96.94	8.08	7.95	9.47	7.44
LT II(C) - Commercial > 50 kW	318.15	26.51	25.86	35.25	25.75
LT III(A) - Industrial upto 20 kW	36.07	3.01	3.07	3.79	3.10
LT III(B) - Industrial > 20 kW	202.40	16.87	14.05	21.98	15.37
LT IV - PWW & Sewage Treatment Plants	25.80	2.15	0.01	0.17	0.11
LT V - Advertisement & Hoardings	0.10	0.01	0.00	0.00	0.01
LT VI – Streetlights	0.75	0.06	0.05	0.06	0.05
LT VII(A) - Temporary Religious	0.03	0.00	0.00	0.00	0.00
LT VII(B) - Temporary Others	32.58	2.72	2.29	3.11	2.11
LT VIII - Crematoriums & Burial Grounds	0.29	0.02	0.02	0.02	0.03



Consumer Category	Approved by the Commission (MU)	Monthly Approved (MU)	Actual Sales		
			July' 19 (MU)	August '19 (MU)	September'19 (MU)
	(I)	(II=I/12)	(III)	(IV)	(V)
LT IX(A) - Public Service Govt Hospital & Educational Institutions	2.09	0.17	0.35	0.38	0.35
LT IX(B) - Public Services Others	0.09	0.01	1.58	2.69	1.76
LT XI - Electric Vehicle Charging Stn.	0.00	0.00	0.01	0.01	0.01
<b>HT Category</b>					
HT I – Industry	925.25	77.10	97.78	95.15	87.25
HT II – Commercial	644.60	53.72	48.04	44.36	40.87
HT III - Group Housing Society (Resi)	3.76	0.31	0.83	1.31	1.09
HT IV - PWW & Sewage Treatment Plants	76.00	6.33	6.81	7.62	6.87
HT V(A) - Railways 22/33 kV	70.08	5.84	6.31	6.26	5.91
HT V(B) - Railways Metro & Monorail	11.77	0.98	0.00	0.00	0.00
HT VI(A) - Public Service Govt Hospital & Educational Institutions	14.66	1.22	1.40	1.36	1.31
HT VI(B) - Public Services Others	166.37	13.86	14.38	11.66	6.83
HT VII - Temporary Supply	37.21		3.87	4.33	3.58
<b>Total</b>	<b>4901.00</b>	<b>408.42</b>	<b>425.29</b>	<b>423.56</b>	<b>382.06</b>

3.2 It was observed that the total sale for July, August & September, 2019 is 425.29 MUs, 423.56 MUs and 382.06 MUs respectively as compared to 408.42 MUs of sales approved vide MTR Order. The variation in energy sale during September was primarily on account of lower sales observed in LT-I (B) Residential, HT II – Commercial and HT VI(B) - Public Services Others categories. **TPC-D has stated that lower sales in September was due to seasonal impact and increased open access sales which led to equivalent reduction in direct sales.**

#### **4. Cost of Power Purchase**

4.1 TPC-D purchases majority of its power from TPC-G. Further, TPC-D also procures power from other sources in order to fulfil the demand of its consumers. The following are the list of sources from which TPC-D 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.
- d) Unscheduled Interchanges (Interstate UI)

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

Particulars	Tariff Order Dated 12.09.2018			Actual for July, 2019		
	Net Purchase	Cost	APPC	Net Purchase	Cost	APPC
	MU	Rs. Crore	Rs/kWh	MU	Rs. Crore	Rs/kWh
TPC-G	295.32	131.63	4.46	325.92	144.79	4.44
RE Sources#	58.96	25.62	4.34	61.80	36.85	5.96
Bilateral@	44.08	12.63	2.87	10.57	2.84	2.68
Others*	-	-	-	40.71	13.00	3.19
<b>Total</b>	<b>398.36</b>	<b>169.88</b>	<b>4.26</b>	<b>438.99</b>	<b>197.48</b>	<b>4.50</b>

Particulars	Tariff Order Dated 12.09.2018			Actual for August, 2019		
	Net Purchase	Cost	APPC	Net Purchase	Cost	APPC
	MU	Rs. Crore	Rs/kWh	MU	Rs. Crore	Rs/kWh
TPC-G	295.32	131.63	4.46	310.27	134.85	4.35
RE Sources#	58.96	25.62	4.34	58.83	35.04	5.96
Bilateral@	44.08	12.63	2.87	26.05	7.90	3.03
Others*	-	-	-	27.61	9.38	3.40
<b>Total</b>	<b>398.36</b>	<b>169.88</b>	<b>4.26</b>	<b>422.77</b>	<b>187.17</b>	<b>4.43</b>

Particulars	Tariff Order Dated 12.09.2018			Actual for September, 2019		
	Net Purchase**	Cost	APPC	Net Purchase	Cost	APPC
	MU	Rs. Crore	Rs/kWh	MU	Rs. Crore	Rs/kWh
TPC-G	295.32	131.63	4.46	267.28	126.84	4.75



Particulars	Tariff Order Dated 12.09.2018			Actual for September, 2019		
	Net Purchase**	Cost	APPC	Net Purchase	Cost	APPC
	MU	Rs. Crore	Rs/kWh	MU	Rs. Crore	Rs/kWh
RE Sources#	58.96	25.62	4.34	41.97	30.19	7.19
Bilateral@	44.08	12.63	2.87	56.63	16.30	2.88
Others*	-		-	28.78	10.03	3.48
<b>Total</b>	<b>398.36</b>	<b>169.88</b>	<b>4.26</b>	<b>394.66</b>	<b>183.36</b>	<b>4.65</b>

\*Others include UI/OLA Sale- Pl. refer para.4.33 to 4.36 below.

# the rates of the RE sources include the cost of REC which were not considered in the MTR Order. Also, there is absence of new cheaper RE sources which was envisaged under the MTR Order. Pl. refer para. 4.23 to 4.29 below.

@ The Commission approved the ceiling rate to Rs. 5 per Unit in a subsequent Order in December, 2018. Pl. refer para.4.31 and 4.32 below.

\*\*In case TPC-D, the power purchase quantum and cost is approved on annual basis. The monthly quantum and cost has been arrived based on yearly approved numbers for comparison purpose.

- 4.3 The Commission has scrutinised detailed bills/invoices for all of the power purchase sources in order to verify the claim of TPC-D with regards to average power purchase cost for the months of July, 2019 to September, 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 generating stations are considered as must run. **TPC-D has purchased total 325.92 MUs, 310.27 MUs and 267.28 MUs of power from TPC-G during the months of July, August and September, 2019, respectively as against 295.32 MUs approved in MTR Order** as shown in table below:

TPC-G Stations	MTR approved (MUs)	MTR approved/12 (MUs)	Jul-19 (MUs)	Aug-19 (MUs)	Sep-19 (MUs)
Hydro Generating Stations:					
Bhira	-	-	48.55	52.39	22.77
Bhivpuri	-	-	1.29	13.87	17.95
Khopoli	-	-	17.70	19.16	19.04
<i>Total Hydro</i>	<i>706.66</i>	<i>58.89</i>	<i>67.54</i>	<i>85.41</i>	<i>59.75</i>



TPC-G Stations	MTR approved (MUs)	MTR approved/12 (MUs)	Jul-19 (MUs)	Aug-19 (MUs)	Sep-19 (MUs)
Thermal Generating Stations:					
Unit 5 (Multi-fired)	1,358.54	113.21	116.75	99.87	110.66
Unit 7 (APM Gas)	638.33	53.19	56.84	41.83	17.30
Unit 8 (Coal)	840.31	70.03	84.79	83.16	79.57
<i>Total Thermal</i>	<i>2,837.17</i>	<i>236.43</i>	<i>258.37</i>	<i>224.86</i>	<i>207.53</i>
<b>Total TPC-G</b>	<b>3543.85</b>	<b>295.32</b>	<b>325.92</b>	<b>310.27</b>	<b>267.28</b>

- 4.5 The reason for **variation in monthly power purchase quantum as shown in Table above during Q2 period is mainly on account of variation in PLF of various generating station of TPC-G.** The Table below shows the monthly/Quarterly PAF and PLF of its thermal generating stations during Q2 of FY 2019-20:

Months	Unit 5 (Multi-fired)		Unit 7 (Gas)		Unit 8 (Coal)	
	PAF (%)	PLF (%)	PAF (%)	PLF (%)	PAF (%)	PLF (%)
Jul-19	99.54%	68.43%	100.00%	89.38%	96.49%	81.11%
Aug-19	80.73%	58.75%	99.18%	66.27%	90.05%	79.55%
Sep-19	97.55%	67.07%	100.00%	28.56%	89.61%	78.66%
<b>Quarterly</b>	<b>92.55%</b>	<b>64.72%</b>	<b>99.88%</b>	<b>61.76%</b>	<b>92.08%</b>	<b>79.87%</b>

- 4.6 From the above Table, it can be seen that the actual PLF of thermal generating stations of TPC-G during Q2 period was lower than the normative value of 85% except for Unit 7 in the month of July, 2019. In response to clarification sought for lower PLF, TPC-D vide its data gap reply stated that the PLF of unit 5,7 & 8 were lower (below normative level of 85%) mainly due to low system demand. TPC-D further stated during September-2019, TPC-G Unit 7 was out of service from 3 to 24 September, 2019 due to non-availability of gas arising out of fire at ONGC platform.
- 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 5 during the month of August. TPC-D in its reply stated that the generation availability of Unit-5 was lower in August due to forced outage of 103.75 hours (withdrawn for attending tube leak in superheater section) and wet coal issues during the monsoon season. The Commission has asked TPC-D to confirm whether it has fully utilised the units availability declared by TPC-G during Q2 period. TPC-D was also sought to confirm if MoD principle has been followed while scheduling the power. In response to above query, **TPC-D confirmed that it has fully utilised declared availability of all of its contract sources during Q2 of FY 2019-20.**





4.8 With regard to MOD principle, TPC-D replied that the State Merit Order Despatch (MOD) is run by State Load Despatch Centre (SLDC) and TPC-D gets the drawl schedules, accordingly from SLDC. TPC-D has followed such schedule provided by SLDC during the months of July-2019, August-2019 and September-2019. In this regard, the Commission sought details of schedule given by SLDC to TPC-D vis-à-vis actual generation achieved by TPC-D during Q2 period. TPC-D submitted the details as shown in Table below:

Units	July-19		August-19		September-19	
	Scheduled Generation (MUs)	Actual Generation (MUs)	Scheduled Generation (MUs)	Actual Generation (MUs)	Scheduled Generation (MUs)	Actual Generation (MUs)
Unit-5	245.02	238.09	212.86	204.52	233.17	226.63
Unit-7	115.75	116.40	85.84	85.66	35.37	35.42
Unit-8	142.76	141.31	141.41	138.61	136.21	132.61
Hydro	145.78	138.33	166.46	174.92	118.20	122.36
<b>Total TPC-G*</b>	<b>649.31</b>	<b>634.13</b>	<b>606.57</b>	<b>603.71</b>	<b>522.95</b>	<b>517.02</b>

\*Total Generation includes TPC-G shares and BEST Undertaking share

4.9 From the above Table it can be seen that, as against the total schedule of 1,778.83 MUs (649.31 MUs + 606.57 MUs + 522.95 MUs) given during Q2 period, actual generation achieved by TPC-G is 1754.86 MUs, reflecting an overall minor deviation of (1.35)%.

4.10 Further, with regard to variation in power generation from Hydro stations, TPC-G vide its data gap replies that monthly generation of hydro generating stations is dependent on various parameters like power requirement/demand by Distribution Licensee, water availability in Lake/overflow for the period, tail race user's requirement etc. It further stated that during the month of July, 2019 (monsoon season), the generation of Bhivpuri Hydro station was kept at minimum due to less probability of Lake spilling and also, due to non-requirement of irrigation water at tail race. Also, during the month of September, 2019, the generation at Khopoli and Bhivpuri station was kept higher due to high lake contents /overflow and to avoid submersion of road under water at Walwhan and Thokerwadi. Accordingly, equivalent generation during the same period, i.e., in September, 2019 was reduced at Bhira generating station.

4.11 Although, the generation or PLF was lower during Q2 period due to various reasons as stated above, the cumulative availability of all of its units was more than normative availability during Q2 period. The Table below shows the month wise and cumulative availability declared by TPC-G for its various generating stations during the Q2 period:

Unit 5 (Thermal)	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
Monthly Availability	100.00%	100.00%	100.00%	99.54%	80.73%	97.55%



Cumulative Availability	100.00%	100.00%	100.00%	100.00%	96.11%	96.35%
<b>Unit 7 (Thermal)</b>	<b>Apr-19</b>	<b>May-19</b>	<b>Jun-19</b>	<b>Jul-19</b>	<b>Aug-19</b>	<b>Sep-19</b>
Monthly Availability	100.00%	100.00%	100.00%	100.00%	99.18%	100.00%
Cumulative Availability	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
<b>Unit 8 (Thermal)</b>	<b>Apr-19</b>	<b>May-19</b>	<b>Jun-19</b>	<b>Jul-19</b>	<b>Aug-19</b>	<b>Sep-19</b>
Monthly Availability	99.25%	90.50%	97.78%	96.49%	90.05%	89.61%
Cumulative Availability	99.25%	94.81%	95.79%	95.96%	94.77%	93.92%
<b>Bhira (Hydro)</b>	<b>Apr-19</b>	<b>May-19</b>	<b>Jun-19</b>	<b>Jul-19</b>	<b>Aug-19</b>	<b>Sep-19</b>
Monthly Availability	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Cumulative Availability	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
<b>Bhivpuri (Hydro)</b>	<b>Apr-19</b>	<b>May-19</b>	<b>Jun-19</b>	<b>Jul-19</b>	<b>Aug-19</b>	<b>Sep-19</b>
Monthly Availability	100.00%	100.00%	100.00%	97.94%	100.00%	100.00%
Cumulative Availability	100.00%	100.00%	100.00%	99.48%	99.58%	99.65%
<b>Khopoli (Hydro)</b>	<b>Apr-19</b>	<b>May-19</b>	<b>Jun-19</b>	<b>Jul-19</b>	<b>Aug-19</b>	<b>Sep-19</b>
Monthly Availability	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Cumulative Availability	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

4.12 As it can be seen from the Table above, that **cumulative availability of all generating Units were above normative Target availability of 85%, therefore, TPC-G was entitled for recovery of full monthly fixed cost during the aforesaid period, in line with Regulation 48.3 of MYT Regulations 2015.** The Commission has verified the payment of monthly fixed cost during Q2 of FY 2019-20.

4.13 **The weighted average power purchase cost for TPC-G considering all its thermal and hydro generation has been worked out at Rs. 4.44/ kWh, Rs. 4.35/ kWh and Rs. 4.75/kWh for the months of July, August, and September, 2019, respectively, as compared to MTR approved rate of Rs. 4.46/kWh.** The APPC is marginally lower by approx. Rs. 0.02/kWh and Rs. 0.11/kWh in the month of July, 2019 and August 2019, respectively, whereas it is higher by approx. Rs. 0.29/kWh in the month of September, 2019. The variation in power purchase price is mainly because of following reasons:

- **Due to variation in fuel parameters during Q2 period as compared to MTR approved parameters**
- **Due to the change in actual quantum from TPC-G generating stations as compared to MTR approved quantum**

#### **Fuel parameter Analysis:**

4.14 TPC-G generates power on Imported Coal, Domestic Natural Gas (under APM mechanism), Oil (LSHS), imported RLNG and Hydro. The Commission observed that energy charge with respect to coal based generating stations was lower whereas for gas based generating



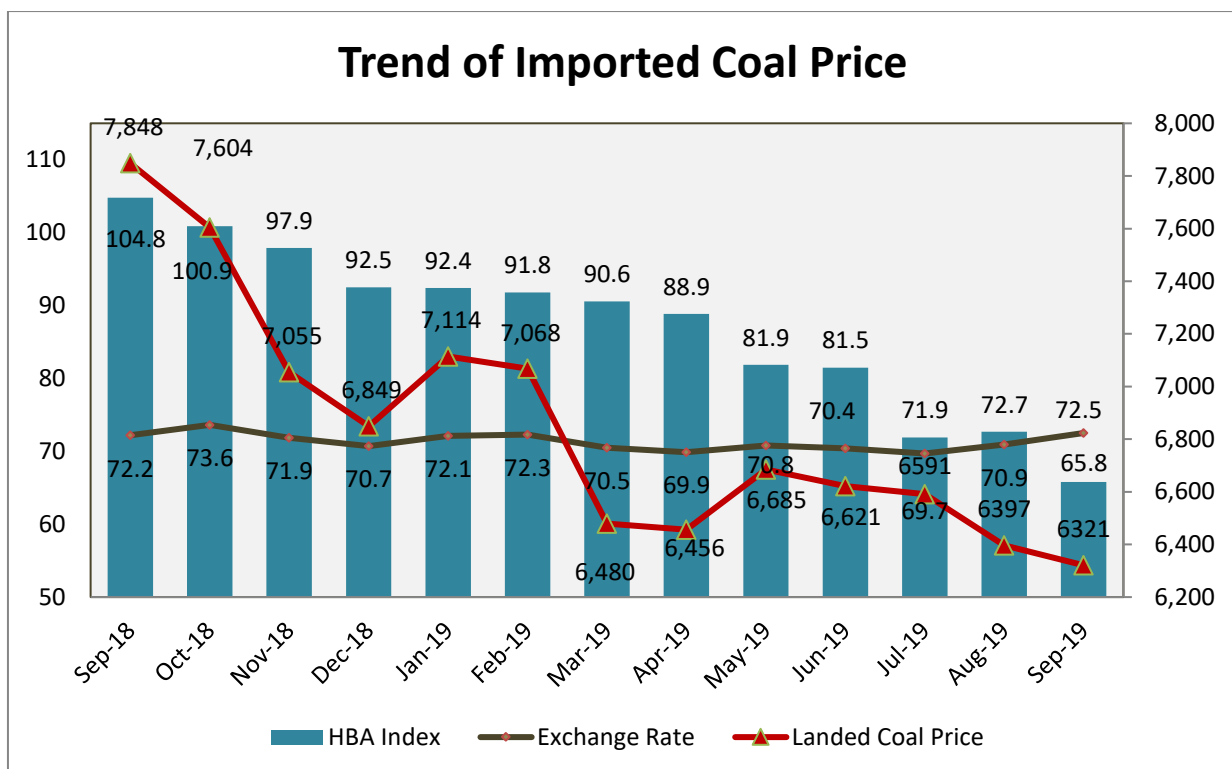
station, it was higher during Q2 period as compared to respective MTR approved charges. The energy charges for hydro remains same as approved in MTR Order. The Table below shows the comparison of actual energy charges vis-à-vis approved energy charges for thermal generating station.

Units/ Months	Unit 5 (Multi-fired)		Variation	Unit 7 (Gas)		Variation	Unit 8 (Coal)		Variation
	Approved	Actual		Approved	Actual		Approved	Actual	
Jul-19	3.99	3.78	(0.21)	1.80	2.78	0.97	3.94	3.76	(0.19)
Aug-19	3.99	3.70	(0.29)	1.80	2.89	1.09	3.94	3.61	(0.34)
Sep-19	3.99	3.62	(0.37)	1.80	3.21	1.41	3.94	3.59	(0.35)

4.15 The above variation in energy charges is mainly due to variation in fuel prices during the respective period. While **there was a reduction observed in energy charges for coal based stations, on the other hand the energy charges for gas-based generating station found increased.** Similar trend was also observed during previous quarter, i.e., Q1 of FY 2019-20. The Commission has sought for fuel purchase bills during the present quarter.

4.16 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 TPC-D to confirm if the imported coal has been procured by TPC-G through competitive bidding along with documentary evidence. The Commission has also sought 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 stated that it has procured imported coal through competitive bidding route and submitted the bidding documents vide its data gap reply.** TPC-G has also provided the HBA indices prevailing during Q2 period. The Commission has observed that the HBA indices and hence, the price of imported coal in international market has shown downward trend in recent times. However, at the time of MTR Order, 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 September, 2019.





4.17 From graph above, it can be observed that **the HBA index was at around 104.8 in September 2018 and has decreased to 65.80 in September 2019**. Due to this the landed cost of coal and hence, energy charges during present quarter has arrived lower as compared to cost approved in MTR Order dt 12 September, 2018. **The landed cost of coal claimed by TPC-G is Rs. 6591/MT, Rs. 6397/MT and Rs. 6321/MT for the month of July, August and September, 2019 respectively as against the MTR approved rate of Rs. 7154/MT.**

4.18 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 August, 2019:

Month	08 August-19	17 August-19	28 August-19	Remark
Exchange Rate	70.96	71.29	71.73	Verified from SAP Entry
Supplier	AVRA COMMODITIES	PT KIDECO JAYA A	PT ADARO	Verified from Invoice
Vessel Name	CORAL BREEZE	SAGAR MOTI	ADITYA	Verified from Invoice
HBA	72.67	72.67	72.67	Submitted by TPC-G
Coal Qty (MT)	49300.00	50045.00	49950.00	Verified from Invoice



Month	08 August-19	17 August-19	28 August-19	Remark
GCV (kcal/kg)	5162.00	4935.00	4842.00	Verified from Invoice
Moisture (%)	26.31	25.14	28.86	Verified from Invoice
Ash (%)	4.28	3.11	1.91	Verified from Invoice
Sulphur (%)	0.20	0.10	0.11	Verified from Invoice
HPB	54.21	53.71	51.03	Calculated
Premium	-	-	-	Verified from Invoice
FOB (USD/MT)	54.21	53.71	51.03	Verified from Invoice
FOB Rs /MT	3846.49	3828.84	3660.21	Calculated
Avg Base Price Rs./MT	3778.51			Calculated

4.19 As from Table above the average basic cost of imported coal for the month of August is Rs. 3778.51/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 has worked out the landed cost of imported coal on sample basis for the month of August, 2019 as shown in Table below:

Sr. No	Particular	Source/Formula	Units	Price
1	Base price	As computed above	Rs./MT	3778.51
2	Freight charges	As submitted	Rs./MT.	795.55
3	Excise + Custom Duty + C E Cess + insurance	As submitted	Rs./MT	739.80
4	Handling and wharfage	As submitted	Rs./MT	585.91
5	Other Fuel Handling Charges	As submitted	Rs./MT	480.07
6	<b>Total landed cost</b>	<b>Sum (3:4)</b>	<b>Rs./MT</b>	<b>6379.85</b>

4.20 From the Table above, the landed cost of imported coal for the month of August, 2019 has been worked at Rs. 6,379.85/MT. Although, the landed cost claimed by TPC-G in FAC computation for the month of August is Rs. 6,397/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 whereas, the cost as calculated above pertains to recent purchase cost, hence, it does not match exactly. Further, the cost claimed in FAC computation is based on the weighted average cost of the total coal purchase and the cost of actual inventory prevailing at that time. Therefore, there is a variation in 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.

4.21 Further, with regards to GCV of coal, the Commission has also sought for third party sampling report for verifications. The Commission also sought details of ‘GCV as billed’, ‘GCV as received’ and ‘GCV as used in energy charges’ TPC-G has submitted the **third-party sampling certificate issued by Bureau Veritas for the respective period**. TPC-G also submitted the details of GCV as billed at loading end, as received at unloading end and as used for energy charge computation as shown in Table below:

Months	Wt Avg GCV as billed at loading port (kCal/kg)	Wt Avg GCV as received at unloading port (kCal/kg)	Wt Avg GCV used for energy charges (kCal/kg)	Remark
Jul-19	4,903	4,875	4,725	<i>GCV for energy charge = GCV as received – stacking loss (Max. 150 kcal/kg) as per Regulations 48.5 of MYT Regulations, 2015</i>
Aug-19	4,978	4,928	4,778	
Sep-19	4,913	4,925	4,775	

4.22 With regards to increase in gas prices, the following reasons can be attributed to the increase in gas prices and hence, energy charges for gas generating station:

- 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. The applicable APM gas price for the period April-September 2019 was \$3.69/MMBTU as compared to gas price of \$3.06/MMBTU prevailing during April 2018 to September 2018 which was considered in MTR.
- There has been a revision in transportation tariff from Rs. 1.04 /MMBTU to Rs 25.15 /MMBTU of APM gas w.e.f. July 2019 as stated by TPC-G.

4.23 TPC-G has submitted the sample gas bills issued by GAIL showing the above revised rate and the same has been verified.

4.24 Further, the Commission also sought TPC-G to provide details of variation in fuel price during Q2 period as compared to Q1 of FY 2019-20. TPC-G vide its data gap reply submitted the details as shows in Table below:

Units	Fuel cost Rs/MT for Q1 FY2019-20 (A)	Fuel cost Rs/MT for Q2 FY2019-20 (B)	Increase/decrease in fuel cost Rs./MT (C=B-A)
Unit 5 Coal	6,586.93	6,440.12	(146.81)



Units	Fuel cost Rs/MT for Q1 FY2019-20 (A)	Fuel cost Rs/MT for Q2 FY2019-20 (B)	Increase/decrease in fuel cost Rs./MT (C=B-A)
Unit 7 APM Gas	15,975.41	18,044.9	2,069.49
Unit 8 Coal	6,585.34	6,438.67	(146.67)

4.25 As can be seen from above, during Q2 period, the coal price shows a downward trend whereas, the gas price reflects the upward trend. Considering the above variation in fuel prices, the Commission worked out the net impact of the same on FAC during respective months of Q2 as shown in Table below:

Particulars for July, 2019	Units	Unit 5	Unit 7	Unit 8	Impact
Energy Available to TPC-D	MUs	116.75	56.84	84.79	
Approved Energy Charge	Rs./kWh	3.99	1.80	3.94	
Actual Energy Charge	Rs./kWh	3.78	2.78	3.76	
Fuel Surcharge Adjustment	Rs./kWh	(0.21)	0.97	(0.19)	
<b>Recoverable through FAC</b>	<b>Rs. Crore</b>	<b>(2.46)</b>	<b>5.52</b>	<b>(1.58)</b>	<b>1.48</b>

Particulars for August, 2019	Units	Unit 5	Unit 7	Unit 8	Impact
Energy Available to TPC-D	MUs	99.87	41.83	83.16	
Approved Energy Charge	Rs./kWh	3.99	1.80	3.94	
Actual Energy Charge	Rs./kWh	3.70	2.89	3.61	
Fuel Surcharge Adjustment	Rs./kWh	(0.29)	(1.09)	(0.34)	
<b>Recoverable through FAC</b>	<b>Rs. Crore</b>	<b>(2.90)</b>	<b>4.56</b>	<b>(2.80)</b>	<b>(1.14)</b>

Particulars for September, 2019	Units	Unit 5	Unit 7	Unit 8	Impact
Energy Available to TPC-D	MUs	110.66	17.30	79.57	
Approved Energy Charge	Rs./kWh	3.99	1.80	3.94	
Actual Energy Charge	Rs./kWh	3.62	3.21	3.59	
Fuel Surcharge Adjustment	Rs./kWh	(0.37)	1.41	(0.35)	
<b>Recoverable through FAC</b>	<b>Rs. Crore</b>	<b>(4.09)</b>	<b>2.44</b>	<b>(2.79)</b>	<b>(4.45)</b>

4.26 From the above Table, it was observed that the net impact of change in fuel prices (i.e., increase in gas price and decrease in coal price) is resulting into recovery of Rs. 1.48 Crore





in the month of July 2019. Whereas it is resulting into refund of around Rs. (1.14) Crore and Rs. (4.45) Crore during the month of August and September, 2019, respectively.

- 4.27 Even though there is an additional recovery impact of Rs. 1.48 Crore in the month of July 2019, the APPC is marginally lower than the approved. This is mainly on account of higher quantum of power purchase resulting in lowering spread of per unit fixed charge and thus APPC. **Also, in the month of September, 2019 even though there is refund of Rs. (4.45) Crore, the APPC is higher as compared to approved mainly on account of lower quantum of power purchase.** TPC-D has purchased 325.92 MUs, 310.27 MUs and 267.28 MUs of power during the month of July, August and September, 2019, respectively. Considering the above, the weighted average power purchase cost for TPC-G is arrived at Rs. 4.44/ kWh, Rs. 4.35/ kWh and Rs. 4.75/kWh for the months of July, August, and September, 2019, respectively as compared to MTR approved rate of Rs. 4.46/kWh.

#### **Renewable Purchase (RE Power):**

- 4.28 In order to meet its RPO requirement, TPC-D has procured RE Power from its long term tied up RE sources (solar RE sources and non-solar RE sources). The balance requirement towards RPO target has been met through REC purchase. For solar power, TPC-D has long term agreement with Mulshi Solar Plant, Palaswadi and Carnac roof top. For non-solar power, TPC-D has long term contract with wind generators such as Khandke, Bramhanvel, Sadawaghapur, Visapur, Agaswadi. Tata Power-D is procuring solar as well as non-solar power at a generic tariff approved by the Commission.
- 4.29 During the present quarter, TPC-D has purchased 3.26 MUs, 2.69 MUs and 3.33 MUs of solar power from existing solar sources at a rate of Rs. 9.26/kWh, Rs. 9.33/kWh and Rs. 9.25/kWh in the month of July, August and September, 2019, respectively, which is within the MTR approved rate of Rs. 9.81/kWh applicable for existing solar tied up sources. For its non-solar RPO target, TPC-D has purchased 58.54 MUs, 56.15 MUs and 38.64 MUs of non-solar power at a rate of Rs. 4.98/kWh, Rs. 4.96/kWh and Rs.4.96/kWh in the month of July, August and September, 2019, respectively as against the MTR approved rate of Rs. 5.06/kWh applicable for existing non-solar tied up sources. Based on both solar and non-solar power, the **total RE power procured by TPC-D stands at 61.80 MUs, 58.83 MUs and 41.97 MUs for the month of July, August and September, 2019, respectively.** The weighted average price for the above specified RE purchase (considering existing solar and non-solar sources) works out as Rs. 5.21/kWh, Rs. 5.16/kWh and Rs. 5.30/kWh during the months of July, August and September, 2019 as compared to MTR approved weighted average price of Rs. 5.67/kWh applicable for existing solar and non-solar sources.
- 4.30 Apart from above **TPC-D has also purchased non-solar RECs worth Rs. 4.68 Crore in July 2019, Rs. 4.68 crore in August 2019 and Rs. 7.94 crore in September 2019 to fulfil**





**its RPO Obligation.** Considering the RE (solar and non-solar) purchase cost and also the REC cost as mentioned above, the overall weighted average price of RE power inclusive of REC cost stands at Rs. 5.96/kWh, Rs. 5.96/kWh and Rs. 7.19/kWh, for months of July, August and September, 2019 respectively, as compared to MTR approved rate of Rs.4.34/kWh. The Table below shows the comparison of actual RE power purchase vis-à-vis approved during the Q2 of FY 2019-20:

Particular	As approved in MTR Order			Actual for July, 2019		
	Quantum (MUs)	% share	Rate (Rs./kWh)	Quantum (MUs)	% share	Rate (Rs./kWh)
Solar Sources:						
Existing Sources	47.4	6.70%	9.81	3.26	5.28%	9.26
New Solar	119.91	16.95%	2.72*	-	-	-
Non-Solar Sources:						
Existing Sources	322.21	45.54%	5.06	58.54	94.72%	4.98
New Non- Solar (MU)	208.4	29.46%	2.87*	-	-	-
Mini/Micro Hydro Purchase	9.56	1.35%	5.64*	-	-	-
<b>Total RE Power</b>	<b>707.48</b>	<b>100.00%</b>	<b>4.34</b>	<b>61.80</b>	<b>100.00%</b>	<b>5.21</b>
REC Solar	-	-	-	-	-	-
REC Non-solar	-	-	-	-	-	4.68 <sup>^</sup>
<b>Total RE Power</b>	-	-	-	-	-	<b>5.96</b>

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

Particular	Actual for Aug, 2019			Actual for Sep, 2019		
	Quantum (MUs)	% share	Rate (Rs./kWh)	Quantum (MUs)	% share	Rate (Rs./kWh)
Solar Sources:						
Existing Sources	2.69	4.56%	9.33	3.33	7.93%	9.25
New Solar	-	-	-	-	-	-
Non-Solar Sources:						
Existing Sources	56.15	95.44%	4.96	38.64	92.07%	4.96
New Non- Solar (MU)	-	-	-	-	-	-
Mini/Micro Hydro Purchase	-	-	-	-	-	-
<b>Total RE Power</b>	<b>58.83</b>	<b>100.00%</b>	<b>5.16</b>	<b>41.97</b>	<b>100.00%</b>	<b>5.30</b>
REC Solar	-	-	-	-	-	-
REC Non-solar	-	-	4.68 <sup>^</sup>	-	-	7.94 <sup>^</sup>
<b>Total RE Power</b>	-	-	<b>5.96</b>	-	-	<b>7.19</b>

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



4.31 It can be observed from the above Table that even though TPC-D has procured RE power at a generic Tariff approved by the Commission, the overall APPC is still appearing higher than the MTR approved rate of Rs. 4.34/kWh. The increase in APPC is mainly due to following reasons:

- Due to the change in actual quantum of power (% share) from various sources, there is a change in the weighted average rate of purchase from Solar RE and Non-Solar RE sources.
- Due to the absence of new cheaper RE sources in the total purchase portfolio as envisaged by the Commission while determining the price for FY 2019-20 in its MTR Order.
- Due to additional purchase of non-solar REC by TPC-D during the respective period in order to fulfil its RPO Obligation of the year.

4.32 It is to be noted that the Commission in its MTR Order dated 12 September, 2018, has arrived at APPC from RE sources as Rs. 4.34/kWh considering the purchase from existing tied-up long term Solar and Non-Solar sources. While arriving this APPC, the weighted average purchase cost for existing solar sources was taken as Rs.9.81/kWh and for non-solar it was considered as Rs.5.06/kWh. The balance requirement of Solar and Non-Solar RPO target was considered to be met through new RE sources considering the average price as Rs.2.72/kWh for Solar, Rs.2.87/kWh for Non-Solar and Rs.5.64/kWh for micro/mini hydro purchase. No REC purchase has been considered in MTR Order for FY 2019-20. TPC-D was accordingly directed to explore new cheap RE sources. Based on above the weighted average cost of power purchase has been worked out as Rs. 4.34/kWh for FY 2019-20 in the MTR Order.

4.33 As against the above, in actual TPC-D has procured RE power from existing tied up sources only and there was no RE purchase from new cheaper sources as envisaged in MTR Order. On response to clarification sought with regards to absence of new cheaper RE sources, TPC-D stated that it has explored the option of procuring Solar RE on short term basis. Accordingly, TPC-D has floated a tender in May 2019 through DEEP e-bidding Portal, for procurement of Solar Renewable Power on short term basis through Tariff based competitive bidding process, but there was no response for the same. Subsequently, it had put up the proposal in front of the Commission through a petition in Case No. 136 of 2019 dated 6 June 2019, to procure 150 MW solar power from grid connected solar PV power projects through Competitive Bidding Process. The Commission had issued an order in this case on 2<sup>nd</sup> August 2019 in which the Commission has accorded an approval for procurement of 150 MW Solar power from grid connected Solar PV projects for a PPA period of 25 years through Competitive Bidding process.



- 4.34 Further, TPC- D floated a tender on 21 August, 2019 on MSTC’s e-bidding ‘DEEP Portal’ to procure cumulative 150 MW Solar Power from grid connected solar photovoltaic project on long term basis for a period of 25 years. TPREL was declared as successful Bidder after completion of the Bidding process. **Subsequently, TPC-D had filed a petition for adoption of Tariff and through the Order dated 4 December, 2019 in Case No. 292 of 2019, the Commission has accorded approval for procurement of 150 MW on long term basis from grid connected Solar power project for Rs. 2.83/kWh for 25 Years. Subsequent to this Order, TPC-D signed a PPA on 3 January 2020. Considering the timelines of this process, the project is scheduled to achieve commercial operation in FY 2021-22.**
- 4.35 In its replies to the data gaps for Q1 FAC, TPC-D had submitted the other efforts taken by it to tie up cheaper RE power and had stated that it had explored option to tie-up on Generic tariff by approaching few Developers who were winning bidders in MSEDCL’s tendering process, however considering the short timeline for CoD from August 2018 to March 2019, Tariff period of 13 years & safeguard duty issue, developers were not inclined to tie-up with the terms & conditions as per Generic tariff.
- 4.36 As regards to purchase of REC is concerned, TPC-D stated that MERC RPO Regulations, 2016 also allows Distribution Licensees and other Obligated Entities to meet their RPO by purchasing RECs. 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.”*
- 4.37 **TPC-D has submitted the REC certificates and obligation report issued by IEX and the same has been verified.**

#### **Bilateral Sources/Traders:**

- 4.38 TPC-D has purchased bilateral power of 10.57 MUs, 26.05 MUs and 56.63 MUs respectively, during the months of July, August and September, 2019. The average power purchase cost from traders is Rs. 2.68/kWh, Rs. 3.03/kWh and Rs. 2.87/kWh during the month of July, August and September, 2019 respectively, as compared to MTR approved rate of Rs. 2.87/kWh. The Commission has enquired whether the above bilateral power from traders has been procured through competitive bidding. In response to this, TPC-D replied that during Q2 of FY 2019-20, TPC-D has purchase bilateral power through exchange. TPC-D clarified that the bilateral power was available at a cheaper price than the contracted sources, hence, for cost optimisation it has procured bilateral power. The Table below shows



the actual variable charge of contracted sources vis-à-vis price at which bilateral power has been procured by TPC-D during Q2 period.

Particular	July, 2019		August, 2019		September, 2019	
	Energy Charge (Rs./kWh)	Bilateral Price (Rs./kWh)	Energy Charge (Rs./kWh)	Bilateral Price (Rs./kWh)	Energy Charge (Rs./kWh)	Bilateral Price (Rs./kWh)
Unit 5	3.78	2.68	3.70	3.03	3.59	2.87
Unit 7	2.78		2.89		3.21	
Unit 8	3.76		3.61		3.57	

4.39 Also, it is to be noted that the Commission in its Order in Case No. 319 of 2018 dated 3 December, 2018 has increased the ceiling rate for purchase of short-term power to Rs. 5.00/kWh for FY 2018-19 and FY 2019-20. Considering that **the actual bilateral power has been procured for cost optimization and is also within the revised ceiling approved** by the Commission, the same has been considered as submitted by TPC-D.

#### **UI and OLA Sale:**

4.40 It was observed that TPC-D has considered Unscheduled Interchange (UI) power of 48.98 MUs, 35.68 MUs and 29.06 MUs at a price of Rs. 3.50/kWh during the month of July, August and September, 2019 respectively. The Commission has sought for supporting invoices/bills for UI purchase. In response TPC-D stated that UI is a balancing figure between the InSTS requirement of TPC-D and total power purchase of TPC-D for a particular month. The bills/invoices of UI for the period July to September 2019 can be provided once provisional bill settlement of UI is completed. At present, **TPC-D has considered UI price at provisional basis.**

4.41 **TPC-D has purchased UI power during Q2 period which is mainly due to backing down of TPC-G generating stations as per State-wide MoD run by MSLDC.** TPC-G's generating Stations with which TPC-D has long term contracts are at a higher position in the Merit Order Stack. Hence, depending on the State demand these generators are backed down. As per the procedure laid down by the Commission the requirement against backed down generation get fulfilled by the pool power. Hence, quantum of UI power is reflecting higher during Q2 period.

4.42 Since UI rates are normally lower as compared to other sources of power, consideration of the same reduces the average power purchase cost, thus, reducing FAC burden on consumers. Therefore, in line with approach adopted in earlier FAC approval, the Commission has considered imbalance power purchase quantum as well as the cost on provisional basis as submitted by TPC-D. However, Utility is requested to expedite the UI settlement process and submit the actual bills with adjustments, if any, promptly. Further, it



is to clarify that TPC-D should not treat the Imbalance Pool mechanism as a source of procuring power. It is only meant for settling the deviations in the real-time power interchange between various pool participants. Therefore, **TPC-D is required to carry out due diligence of its Power procurement plans in such a way to minimise quantum of purchase from Imbalance Pool.**

4.43 With regards to Outside Licence Area (OLA) or surplus sale, it was observed that **TPC-D has sold 20.36 MUs of power during quarter 2 of FY 2019-20 at a price of Rs. 4.32/kWh. TPC-D has earned a revenue of Rs. 8.79 Crore** from this transaction which has been considered in reduction of power purchase cost during the respective period. In response to details sought for sale of surplus power, TPC-D replied that there was no exchange sale in Q2 FY 2019-20 and surplus power has been sold to NIDAR Utilities (NUPLLP), Panvel as per approved Power Purchase Agreement (PPA) vide MERC order dated 3 August, 2018 in Case no. 117 of 2017.

4.44 The average rate of sale of the surplus power is Rs. 4.32/kWh is slightly lower than the average rate of power purchase of TPC-D. Further, the Commission has compared the price of sale of surplus power by TPC-D vis-à-vis the Market Clearing Price (MCP) prices of power traded at IEX. The average MCP prices prevailed at Rs. 3.38/kWh, Rs. 3.32/kWh and Rs. 2.77/kWh for the months of July, August and September, 2019 respectively. TPC-D has managed to sell the surplus power at a rate higher than these MCP rate as already mentioned above. Accordingly, the OLA sale is considered as submitted by TPC-D.

**Standby Power:**

4.45 Further, it was observed that TPC-D had purchased 3.73 MUs of Standby power at a price of Rs. 3.75/kWh mainly during the month of August, 2019. On response to clarification sought against the same **TPC-D stated that it had procured aforesaid Standby Power from MSEDCL due to emergency outage of generating units of TPC-G.** TPC-D also replied that the power from **all the contracted sources was fully utilised before scheduling the above mentioned standby power.** The details related to emergency outages is as provided by TPC-G is shown below:

Unit/Station	Outage dates
Unit-5	12 <sup>th</sup> August to 16 <sup>th</sup> August, 2019
Unit-7	15 <sup>th</sup> August to 19 <sup>th</sup> August, 2019
Bhira-BPSU	29 <sup>th</sup> August, 2019

4.46 With reference to the price of Standby power purchase, TPC-D replied that it is yet to receive final bills for the power purchase from MSEDCL. However, for the purpose of booking power purchase cost it has provisionally considered the price of Rs.3.75/kWh which is lower than the per unit average power purchase cost approved (Rs. 4.27/kWh) for



TPC-D in MTR Order. Further, the Commission in its recent MYT Order has also approved the Standby Charges as submitted by TPC-D during provisional truing of FY 2019-20. In view of above, the Commission has considered the Standby Charges in Q2 of FY 2019-20. However, TPC-D is required to submit the detailed reconciliation of Standby Charges on the basis of final bills at the time of final truing of FY 2019-20.

- 4.47 **Based on above, on an overall basis the key reason for variation in APPC is due to variation in fuel prices, impact of full monthly fixed charge payment of TPC-G over lower net generation due to lower PLF, absence of new cheaper sources of power in total RE portfolio, additional purchase of REC to fulfil RPO, etc.** Accordingly, the Commission allows the average power purchase cost of **Rs. 4.50/kWh** for the month of July, 2019, **Rs. 4.43/kWh** for the month of August, 2019 and **Rs. 4.65/kWh** for the month of September, 2019 as against **Rs. 4.26/kWh** as approved in MTR Order.

**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 months of Q2 FY2020. 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 July, 2019 to September, 2019.

S. No.	Particulars	Units	Jul, 2019	Aug, 2019	Sep, 2019
1	Average power purchase cost approved by the Commission	Rs./kWh	4.26	4.26	4.26
2	Actual average power purchase cost	Rs./kWh	4.50	4.43	4.65
3	Change in average power purchase cost (=2 -1)	Rs./kWh	0.23	0.16	0.38
4	Net Power Purchase	MU	438.99	422.77	394.66
5	<b>Change in fuel and power purchase cost (=3 x 4/10)</b>	<b>Rs. Crore</b>	10.27	6.88	15.05

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

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





S. No.	Particulars	Units	July, 2019	Aug, 2019	Sep, 2019
1.1	Incremental cost allowed to be recovered in Month n-4	Rs. Crore	8.14*	10.64*	11.44
1.2	Incremental cost in Month n-4 actually recovered in month n-2	Rs. Crore	6.89	5.56	8.83
1.3	(over-recovery)/under-recovery (=1.1 - 1.2)	Rs. Crore	1.25	5.08	2.61
2.0	Carried forward adjustment for over-recovery/under-recovery attributable to application of ceiling limit for previous month	Rs. Crore	0.00	0.00	0.00
3.0	<b>Adjustment factor for over-recovery/under-recovery (1.3+2.0)</b>	<b>Rs. Crore</b>	1.25	5.08	2.61

\*Corrected as per previous post facto approval

6.2 TPC-D in its submission had considered incremental cost allowed to be recovered for the month of July and August, 2019 as Rs. 7.53 crore and Rs. 5.54 crore, respectively. TPC-D had considered the above values as per its own computation of FAC pertaining to Q1 of FY 2019-20. However, the Commission in its post facto approval of Q1 has rectified certain errors and has worked out incremental cost allowed to be recovered for the month of July and August, 2019 as Rs. 8.14 crore and Rs. 10.64 crore, respectively. The same has been considered in present 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 July, 2019 to September, 2019.

S. No.	Particulars	Units	July, 2019	Aug, 2019	Sep, 2019
1	Adjustment factor for over-recovery/under-recovery	Rs. Crore	1.25	5.08	2.61
2	Applicable Interest rate	%	9.90%	9.75%	9.65%
3	<b>Carrying cost for over-recovery/under-recovery</b>	<b>Rs. Crore</b>	0.01	0.04	0.02

## 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.

*“10.8The 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 It was observed that the distribution losses provided by TPC-D in its initial FAC submission were negative for all the three months. In response to clarification sought, TPC-D stated that during the FAC computation for the month of July, 2019 to September, 2019, the details of Open Access units posted were provisional, hence, the losses worked out negative. TPC-D then submitted the details of distribution loss with updated data vide its data gap reply. The same has been considered by the Commission in present FAC approval.

8.3 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 Jul-19	Actual up to Aug19	Actual up to Sep-19
1	Net Energy input at Distribution Voltages	MU	2567.96	1006.21	1255.65	1506.71
2	Energy sales (metered) at Distribution voltages	MU	2541.77	985.23	1248.30	1493.94
3	Distribution Loss (=1-2)	MU	26.190	20.98	7.35	12.77
4	Distribution Loss as % of net energy input (=3/1)	%	1.02%	2.09%	0.59%	0.85%
5	Excess Distribution Loss = [Distribution Loss (4) - Distribution loss approved] x Net Energy Input (1)	MU	-	3.37	0.00	0.00
6	<b>Disallowance of FAC due to excess Distribution Loss</b>	<b>Rs. Crore</b>	-	0.09	0.00	0.00

8.4 As seen from the above Table, cumulative distribution loss is 2.09% for the month of July, 2019, 0.59% for August, 2019 and 0.85% for the month of September, 2019. The cumulative distribution losses were observed higher than the approved Distribution Loss of 1.02% in July, 2019. Hence, there is excess distribution loss of 3.37 MU and accordingly, **Rs. 0.09**





crore amount has been disallowed on account of excess distribution loss for the aforesaid month.

## 9. Summary of Allowable ZFAC

9.1 The summary of the FAC amount as approved by the Commission for the month of July, 2019 to September, 2019 which is allowed to be recovered in the billing month of September, 2019 to November, 2019 is as shown in the Table below:

S. No.	Particulars	Units	July, 2019	Aug, 2019	Sep, 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	10.27	6.88	15.05
1.2	Carrying cost for over-recovery/under-recovery (C)	Rs. Crore	0.01	0.04	0.02
1.3	Adjustment factor for over-recovery/under-recovery (B)	Rs. Crore	1.25	5.08	2.61
<b>1.4</b>	<b>ZFAC = F+C+B</b>	<b>Rs. Crore</b>	11.53	12.00	17.69
<b>2.0</b>	<b>Calculation of FAC Charge</b>				
2.1	Energy Sales within the License Area	MU	409.70	413.68	373.22
2.2	Excess Distribution Loss	MU	3.37	0.00	0.00
2.3	ZFAC per kWh	Rs./kWh	0.28	0.29	0.47
2.4	Cap at 20% of variable component of tariff	Rs./kWh	1.17	1.17	1.17
2.5	FAC Charge allowable (Minimum of 2.3 and 2.4)	Rs./kWh	0.28	0.29	0.47
<b>3.0</b>	<b>Recovery of FAC</b>				
3.1	Allowable FAC	Rs. Crore	11.53	12.00	17.69
3.2	FAC disallowed corresponding to excess Distribution Loss [(2.2 x 2.5)/10]	Rs. Crore	0.09	0.00	0.00
<b>4.0</b>	<b>Total FAC based on category wise and slab wise allowed to be recovered</b>	<b>Rs. Crore</b>	11.44	12.00	17.69
<b>5.0</b>	<b>Carried forward FAC for recovery during future period</b>	<b>Rs. Crore</b>	0.00	0.00	0.00

9.2 It can be seen from the above Table that standalone FAC for the months of July to September, 2019 is Rs. 11.44 Crore, Rs. 12.00 Crore and Rs 17.69 Crore respectively. Based on total energy sales and excess distribution losses, FAC per unit has been working out as



Rs. 0.28/kWh, Rs. 0.29/kWh and Rs. 0.47/kWh for the months of July to September, 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 Q2 of FY 2019-20 is 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 Q2 months of FY 2019-20.
- 9.4 However, as against the above TPC-D in its initial FAC submission of Q2 of FY 2019-20 has worked out FAC for the months of July, August and September, 2019 is Rs. 10.91 Crore, Rs. 6.86 Crore and Rs 17.18 Crore, respectively. Based on total energy sales, FAC per unit has been worked out by TPC-D was Rs. 0.27/kWh, Rs. 0.17/kWh and Rs. 0.46/kWh for the months of July, August and September, 2019, respectively.
- 9.5 **TPC-D was to recover Rs. 29.69 Crore cumulatively for the last two months of quarter, however, as against this TPC-D has actually worked out FAC as Rs. 24.01 Crore. Hence, there is an under-recovery of amount Rs. 5.67 Crore.** This under recovery is mainly on account of rolled over FAC allowance/disallowance of previous quarter, i.e., Q1 of FY 2019-20 which is reflected in the adjustment factor computation of present FAC approval as explained in para above. Accordingly, TPC-D is required to recover additional FAC of Rs. 5.67 Crore from the consumers. However, as FY 2019-20 is already over, therefore, above adjustment will be rolled over in next FAC approvals (i.e., FAC of Q3 of FY 2019-20) and finally would be 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 July, 2019 to September, 2019.

10.3 The following Table shows per unit ZFAC to be charged to the consumers of TPC-D for the billing month of September, 2019 to November, 2019.

S. No	Consumer Category	Slabs	ZFAC to be levied in billing month of		
			Sep'19	Oct'19	Nov'19
			(Rs./kWh)	(Rs./kWh)	(Rs./kWh)
(A)	<b>LT Category</b>				
1	LT 1 – BPL	0 – 30	0.126	0.085	0.174
2	LT 1 - Residential S1	0 – 100	0.071	0.044	0.122
3	LT 1 - Residential S2	101 – 300	0.187	0.116	0.321
4	LT 1 - Residential S3	301 – 500	0.319	0.209	0.580
5	LT 1 - Residential S4	> 501	0.440	0.289	0.802
6	LT II Commercial (A)	0 - 20 kW	0.292	0.194	0.539
7	LT II Commercial (B)	20–50 kW	0.306	0.194	0.538
8	LT II Commercial (C)	> 50 kW	0.365	0.226	0.626
9	LT III (A) - LT Industries	0 - 20 kW	0.289	0.186	0.517
10	LT III (B) - LT Industries	> 20 kW	0.296	0.184	0.509
11	LT IV - Public Water Works	all units	0.266	0.169	0.469
12	LT V - Advt & Hoardings	all units	0.367	0.223	0.619
13	LT VI - Street Lights	all units	0.316	0.195	0.542



S. No	Consumer Category	Slabs	ZFAC to be levied in billing month of		
			Sep'19	Oct'19	Nov'19
			(Rs./kWh)	(Rs./kWh)	(Rs./kWh)
14	LT VII (A) - Temporary Supply –Religious	all units	0.218	0.140	0.387
15	LT VII (B) - Temporary Supply –Others	all units	0.349	0.214	0.594
16	LT VIII - Crematorium and Burial Grounds	all units	0.160	0.098	0.272
17	LT IX (A) - Public Service – Govt. Hospitals & Educational Institutes	all units	0.242	0.158	0.439
18	LT IX (B) - Public Service – Others	all units	0.317	0.194	0.537
<b>(B)</b>	<b>HT Category</b>				
19	HT - I Industry	all units	0.338	0.210	0.581
20	HT - II Commercial	all units	0.357	0.220	0.611
21	HT - III Group Housing Society (Residential)	all units	0.319	0.199	0.552
22	HT - IV Public Water Works	all units	0.280	0.175	0.484
23	HT-V Railways, Metro & Monorail	all units	0.267	0.167	0.465
24	HT-VI (A) Public Service – Govt. Hospitals & Educational Institutes	all units	0.314	0.197	0.546
25	HT-VI (B) Public Service- Others	all units	0.341	0.212	0.588
26	HT-VII Temporary Supply	all units	0.340	0.208	0.578
27	HT VIII - EV Charging Stations	all units		0.132	0.367

## 11. Summary

11.1 The Table below shows the summary of FAC claimed by TPC-D vis-à-vis approved by the Commission for Q2 of FY 2019-20:

Particular	Month	Claimed	Approved	Remarks
FAC (Rs. Cr.)	<b>July</b>	10.91	11.44	<b>(Rs. 29.69 Cr.)</b> <b>Cr.- Rs. 24.01 Cr.)</b> =Rs. 5.67 Cr. Recoverable
	<b>August</b>	6.86	12.00	
	<b>September</b>	17.16	17.69	
FAC per Unit	<b>July</b>	0.266	0.279	
	<b>August</b>	0.166	0.290	
	<b>September</b>	0.460	0.474	



11.2 As shown in above table, the cumulative FAC for the last two months of quarter approved by Commission stand at Rs. 29.69 crore, however, as against this TPC-D has actually recovered Rs. 24.01 Crore only. Hence, there is an under-recovery of amount Rs. 5.67 Crore. Since FY 2019-20 is already over, the above adjustment will be rolled over in next FAC approvals (i.e., FAC of Q3 of FY 2019-20) and finally would be adjusted in the final True up of FY 2019-20.

