

MAHARASHTRA ELECTRICITY REGULATORY COMMISSION
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Ref. No. MERC/FAC/20202021/E-Letter

Date: 20 April, 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, 2018 to September, 2018, October, 2018 to December, 2018 and January, 2019 to March, 2019.

Reference: TPC-D's FAC submissions for post-facto approvals of FAC for the period from July, 2018 to September, 2018, October, 2018 to December, 2018 and January, 2019 to March, 2019.

Sir,

Upon vetting the FAC calculations for the months of July, 2018 to September, 2018, October, 2018 to December, 2018 and January, 2019 to March, 2019 as mentioned in the above reference, the Commission has accorded post facto approval to TPC-D undertaking for charging FAC to its consumers as shown in the table below:

| Month | Jul, 2018 | Aug, 2018 | Sept, 2018 |
|--------------------------------------|--------------|--------------|---------------|
| Z _{FAC} allowed (Rs. Crore) | 28.24 | 29.87 | 4.19 |

| Month | Oct, 2018 | Nov, 2018 | Dec, 2018 |
|--------------------------------------|--------------|--------------|--------------|
| Z _{FAC} allowed (Rs. Crore) | 10.94 | 6.81 | 28.81 |

| Month | Jan, 2019 | Feb, 2019 | Mar, 2019 |
|--------------------------------------|-----------|-----------|-----------|
| Z _{FAC} allowed (Rs. Crore) | 35.49 | 1.49 | 20.77 |



The above approved FAC amounts have been adjusted in the final True up of FY 2018-19 under the MERC (Multi Year Tariff) Regulations, 2015 vide Order dated 30 March, 2020 in Case No. 326 of 2019. Hence, there is no financial impact of the same and no further action is required to be taken by TPC-D.

In the MYT order for the 4th Control period, Commission has given dispensation with regards to FAC mechanism. The Commission has also issued the detail guidelines/formats vide letter No. MERC/Tech/FAC/ dated 20 April, 2020 for claiming the FAC and the same requires prior approval.

TPC-D is directed to comply with the guidelines dated 20 April, 2020 for all the future submissions on FAC.

Yours faithfully,



(Prafulla Varhade)
Director (EE)

Encl: Annexure A: Detailed Vetting Report for the period of July, 2018 to September, 2018.
Annexure B: Detailed Vetting Report for the period of October, 2018 to December, 2018.
Annexure C: Detailed Vetting Report for the period of January, 2019 to March, 2019.



**POST FACTO APPROVAL FOR FAC CHARGES FOR THE MONTHS OF JULY, 2018
to SEPTEMBER, 2018**

Subject: Post facto approval of TPC-D's Fuel Adjustment Charges (FAC) for the period of July, 2018 to September, 2018.

Reference: TPC-D's FAC submission for post-facto approval of FAC for the period from July, 2018 to September, 2018.

1. FAC submission by TPC-D:

1.1 TPC-D has submitted FAC submissions for the months of July, 2018 to September, 2018 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, 2018 to November, 2018.

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 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.

2.4 Vide FAC vetting Report dated 16 January, 2017, the Commission accorded prior approval to the FAC for the month of October, 2016.



2.5 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, TPC-D has filed FAC submissions for the months of July, 2018 to September, 2018 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) | Monthly Approved (MU) | Actual Sales | |
|---|--|-----------------------------|----------------|----------------|
| | | | Jul'18 (MU) | Aug'18 (MU) |
| | (I) | (II=I/12) | (III) | (IV) |
| LT Category | | | | |
| LT I(A) - Residential (BPL) | 0.02 | 0.00 | - | - |
| LT I(B) – Residential | 2224.43 | 185.37 | 157.27 | 157.60 |
| LT II(A) - Commercial upto 20 kW | 284.71 | 23.73 | 14.94 | 16.38 |
| LT II(B) - Commercial 20 to 50 kW | 97.38 | 8.12 | 3.93 | 11.22 |
| LT II(C) - Commercial > 50 kW | 371.39 | 30.95 | 14.04 | 42.85 |
| LT III(A) - Industrial upto 20 kW | 71.58 | 5.97 | 2.65 | 4.80 |
| LT III(B) - Industrial > 20 kW | 212.85 | 17.74 | 8.93 | 24.16 |
| LT V - Advertisement & Hoardings | 0.05 | 0.00 | 0.00 | 0.00 |
| LT VI – Streetlights | 0.57 | 0.05 | 0.02 | 0.05 |
| LT VII(A) - Temporary Religious | 0.09 | 0.01 | 0.00 | 0.00 |
| LT VII(B) - Temporary Others | 22.22 | 1.85 | 1.41 | 2.75 |
| LT VIII - Crematoriums & Burial Grounds | 0.33 | 0.03 | 0.02 | 0.05 |
| LT IX(A) - Public Service Govt Hospital & Educational Institutions | 0.07 | 0.01 | 0.26 | 0.46 |
| LT IX(B) - Public Services Others | 16.84 | 1.40 | 1.08 | 2.74 |
| HT Category | | | | |
| HT I – Industry | 905.64 | 75.47 | 74.71 | 61.90 |
| HT II – Commercial | 610.51 | 50.88 | 44.11 | 41.33 |
| HT III - Group Housing Society (Resi) | 3.56 | 0.30 | 0.31 | 0.30 |
| HT IV - PWW & Sewage Treatment Plants | 60.88 | 5.07 | 6.99 | 6.67 |
| HT V(A) - Railways 22/33 kV | 159.72 | 13.31 | 5.32 | 5.64 |
| HT V(B) - Railways Metro & Monorail | 6.57 | 0.55 | 0.23 | - |
| HT VI(A) - Public Service Govt Hospital & Educational Institutions | 41.89 | 3.49 | 0.99 | 1.01 |



| Consumer Category | Approved by the Commission (MU) | Monthly Approved (MU) | Actual Sales | |
|-----------------------------------|---------------------------------|-----------------------|---------------|---------------|
| | | | Jul'18 (MU) | Aug'18 (MU) |
| | (I) | (II=I/12) | (III) | (IV) |
| HT VI(B) - Public Services Others | 168.60 | 14.05 | 9.01 | 6.97 |
| HT VII - Temporary Supply | 11.25 | 0.94 | 2.05 | 1.98 |
| Sub total | 5271.15 | 439.26 | 348.28 | 388.85 |

| Consumer Category | Approved by the Commission (MU)* | Monthly Approved (MU) | Actual Sales |
|--|----------------------------------|-----------------------|---------------|
| | | | Sep'18 (MU) |
| | (I) | (II=I/12) | (III) |
| LT Category | | | |
| LT I(A) - Residential (BPL) | 0.02 | 0.00 | - |
| LT I(B) – Residential | 1,982.37 | 165.20 | 153.73 |
| LT II(A) - Commercial upto 20 kW | 172.28 | 14.36 | 15.23 |
| LT II(B) - Commercial 20 to 50 kW | 89.99 | 7.50 | 7.00 |
| LT II(C) - Commercial > 50 kW | 315.48 | 26.29 | 24.38 |
| LT III(A) - Industrial upto 20 kW | 40.15 | 3.35 | 3.65 |
| LT III(B) - Industrial > 20 kW | 194.75 | 16.23 | 14.96 |
| LT V - Advertisement & Hoardings | 0.09 | 0.01 | 0.00 |
| LT VI – Streetlights | 0.69 | 0.06 | 0.03 |
| LT VII(A) - Temporary Religious | 0.03 | 0.00 | 0.00 |
| LT VII(B) - Temporary Others | 29.46 | 2.46 | 1.81 |
| LT VIII - Crematoriums & Burial Grounds | 0.3 | 0.03 | 0.03 |
| LT IX(A) - Public Service Govt Hospital & Educational Institutions | 1.86 | 0.16 | 0.32 |
| LT IX(B) - Public Services Others | 23.44 | 1.95 | 1.73 |
| HT Category | | | |
| HT I – Industry | 795.91 | 66.33 | 90.01 |
| HT II – Commercial | 539.41 | 44.95 | 40.06 |
| HT III - Group Housing Society (Resi) | 3.76 | 0.31 | 0.28 |
| HT IV - PWW & Sewage Treatment Plants | 76 | 6.33 | 6.21 |
| HT V(A) - Railways 22/33 kV | 70.08 | 5.84 | 5.72 |
| HT V(B) - Railways Metro & Monorail | 9.05 | 0.75 | - |
| HT VI(A) - Public Service Govt Hospital & Educational Institutions | 13.27 | 1.11 | 1.00 |
| HT VI(B) - Public Services Others | 96.36 | 8.03 | 9.85 |
| HT VII - Temporary Supply | 25.32 | 2.11 | 2.12 |
| Sub total | 4480.07 | 373.34 | 378.15 |

*As per MTR Order



3.2 It was observed that the total sale for July and August, 2018 is 348.28 MUs and 388.85 MUs respectively as compared to the MYT approved i.e., 439.26 MUs and for the month of September, 2018 it is 378.15 MUs as compared to MTR approved value of 373.34 MUs. The major variation was observed in LT – I (B) Residential, LT – II (B) & LT II (C) Commercial, LT – III (B) Industrial and in HT – I Industry and HT – II Commercial Categories during the months of July to September, 2018.

4. Cost of Power Purchase

4.1 TPC-D purchase 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 TPC-D has considered the MYT approved figures as such quantum, cost, sale etc. while computing the FAC corresponding to the month of July and August, 2018. However, for the month of September, 2018 during which the Commission had issued the MTR Order, TPC-D has considered the respective approved figures from MTR Order while calculating the FAC for the said month. The Commission has considered the same approach as submitted by TPC-D for this present FAC approval.

4.3 The following tables show the variation in average power purchase cost (Rs/kWh) for the months of July, 2018 to September, 2018 as compared to average power purchase cost approved in Tariff Order dated 21 October, 2016 and in Tariff Order dated 12 September, 2018 for applicable months:

| Particulars | Tariff Order Dated 21.10.2016 | | | Actual for July, 2018 | | |
|--------------|-------------------------------|----------------|-----------------------------|-----------------------|---------------|-----------------------------|
| | 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 | 3618.61 | 1456.18 | 4.02 | 292.39 | 130.97 | 4.48 |
| RE Sources | 369.61 | 286.39 | 7.75 | 73.50 | 44.47 | 6.05 |
| Bilateral | 1525.24 | 477.68 | 3.13 | 26.20 | 7.42 | 2.83 |
| Others | - | - | - | (13.65) | (9.36) | 6.86 |
| Total | 5513.46 | 2220.25 | 4.03 | 378.44 | 173.50 | 4.58 |



| Particulars | Tariff Order Dated 21.10.2016 | | | Actual for August, 2018 | | |
|--------------|-------------------------------|----------------|-----------------------------|-------------------------|---------------|-----------------------------|
| | 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 | 3618.61 | 1456.18 | 4.02 | 317.84 | 140.73 | 4.43 |
| RE Sources | 369.61 | 286.39 | 7.75 | 64.29 | 33.24 | 5.17 |
| Bilateral | 1525.24 | 477.68 | 3.13 | 13.05 | 3.51 | 2.69 |
| Others | - | - | - | (17.17) | (12.00) | 6.99 |
| Total | 5513.46 | 2220.25 | 4.03 | 378.01 | 165.48 | 4.38 |

| Particulars | Tariff Order Dated 12.09.2018 | | | Actual for September, 2018 | | |
|--------------|-------------------------------|-----------------|-----------------------------|----------------------------|---------------|-----------------------------|
| | 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 | 3,543.84 | 1,581.88 | 4.46 | 346.49 | 156.16 | 4.51 |
| RE Sources | 639.12 | 295.76 | 4.63 | 23.60 | 14.09 | 5.97 |
| Bilateral | 465.21 | 133.20 | 2.86 | 7.08 | 2.05 | 2.89 |
| Others | - | - | - | 21.67 | 0.60 | 0.28 |
| Total | 4,648.17 | 2,010.84 | 4.33 | 398.85 | 172.90 | 4.33 |

- 4.4 The Commission has sought detailed bills/invoices for all of the power purchase sources in order to verify the claim of TPC-D with regards to average power purchase cost for the months of July, 2018 to September, 2018. 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.
- 4.5 The Commission has observed that TPC-D has purchased 292.39 MUs, 317.84 MUs and 346.49 MUs during the months of July, 2018 to September, 2018 from TPC-G. Further, it was observed that the quantum of power purchase from TPC-G's Unit 5 and Unit 7 was lower mainly during the month of July 2018. Upon query raised, with regards to Unit 5, TPC-D stated that there were two forced outages of Unit 5, one due to boiler tube leakage and other due to maintenance of support structure of coal conveyor in the month of July. Due to this the PLF of Unit 5 got reduced to 55.11%. This has led to lower net generation and thus, lower purchase of power from the said unit. TPC-D further stated that during the



month of August 2018, the PLF of Unit 5 was also lower i.e., 69.51% due to low system demand. Hence, purchase of power from Unit 5 in the month of August is also comparatively lower as compared to the September month during which the PLF was 87.45%.

- 4.6 With regards to lower quantum of power purchase form Unit 7 mainly in the month of July 2018; TPC-D stated there was a schedule planned outage of Unit 7 in the month of July 2018. Due to this the availability and PLF of Unit 7 was lower (i.e., 67.97% and 58.04%). This has resulted into lower net generation and thus, lower purchase from aforesaid plant. The shortage of required power has been drawn by TPC-D either through traders/bilateral arrangement or UI. The Commission has sought for the bills/invoices against the same along with the documentary evidence to demonstrate that the power from the Traders has been procured competitively in line with the Short Term Bidding guidelines issued by Ministry of Power.
- 4.7 Even though the PLF for the above mentioned plants were lower for the aforesaid months, the entire monthly fixed cost was payable as the cumulative plant availability was above the normative availability of 85% in line with MYT Regulations. This has resulted into fixed cost spread over lower net generation increasing average power purchase price from these Units and thus impacting the APPC. Further, the commission has verified that the payment of Fixed Charges for all the Thermal Units as well as Hydro Units have been worked out based on the cumulative availability as per the Regulation 48.3 and Regulation 49.1 of MYT Regulations, 2015.
- 4.8 The APPC for TPC-G, which generates power on Imported Coal, Domestic Natural Gas (under APM mechanism), Oil (LSHS) and imported RLNG has been worked out at Rs. 4.48/kWh and Rs. 4.43/kWh for the months of July and August, 2018 respectively. This is higher than the MYT approved rate of Rs. 4.02/kWh respectively. For the month of September 2018, the APPC for TPC-G has been arrived at Rs.4.51/kWh which is also marginally higher than the MTR approved rate of Rs. 4.46/kWh.
- 4.9 Apart from the fixed cost impact as stated in the para above, the variation is also on account of steep increase in average price of fuel from January, 2018 onwards which can be primarily attributed to the steep rise in imported coal prices. The landed cost of coal for the month of July and August, 2018 is Rs. 7266/MT and 7380/MT respectively which is around 45% to 47% higher than that of MYT approved value of Rs. 5003/MT. The landed cost for the month of September 2018, is Rs.7848/MT which is around 9.7% higher than the MTR approved rate of Rs. 7154/MT.
- 4.10 In order to verify the claim of TPC-G regarding the landed cost of coal the Commission has sought for coal purchase bills and supporting invoices during the respective period. Based



on the sample bills submitted, the Commission has computed the landed price of coal during the month of July, 2018 as shown in Table below:

| Date | Quantity MT | Freight Rate (USD/MT) | BAF Correction (USD) | Freight Charges (USD) | Total Freight Charges (USD) | Unit Price FOB (USD/MT) | Total Adjustment (CV, TM, Ash, Sulphur) (USD/MT) | Adjusted Unit Price (USD/MT) | Total Coal Cost (USD) | Total Coal Purchasing Cost (USD) | Average (USD/MT) |
|--------------|---------------|-----------------------|----------------------|-----------------------|-----------------------------|-------------------------|--|------------------------------|-----------------------|----------------------------------|------------------|
| | A | B | C | D=A*B | E=C+D | F | G | H=F+G | I=A*H | J=I+E | K=J/A |
| 07-Jul-18 | 50109 | 10.15 | 43,094 | 5,08,606 | 5,51,700 | 75.66 | 1.7 | 77.36 | 38,76,432 | 44,28,132 | |
| 13-Jul-18 | 48485 | 10.15 | 41,212 | 4,92,123 | 5,33,335 | 74.97 | -4.05 | 70.92 | 34,38,556 | 39,71,891 | |
| 21-Jul-18 | 51100 | 10.15 | 40,369 | 5,18,665 | 5,59,034 | 74.97 | -4.35 | 70.62 | 36,08,682 | 41,67,716 | |
| 29-Jul-18 | 49200 | 10.15 | 44,280 | 4,99,380 | 5,43,660 | 69.18 | 0.98 | 70.16 | 34,51,872 | 39,95,532 | |
| 29-Jul-18 | 51303 | 10.15 | 46,173 | 5,20,725 | 5,66,898 | 75.67 | 1.7 | 77.37 | 39,69,313 | 45,36,211 | |
| Total | 250197 | | | | 27,54,627 | | | | 1,83,44,856 | 2,10,99,483 | 84.33 |

4.11 From the above Table the average cost of coal purchase including the freight charges worked at USD 84.33/MT. Considering the dollar conversion rate prevailing during the month of July as Rs. 68.96 notified by Central Board of Indirect Taxes and Customs, the basic cost of coal has been computed as Rs.5792.73/MT. After considering the other charges such as clean energy cess, insurance, dredging cost, barging, stevedoring and dead freight cost, way leave charge, taxes and duties and other coal handling charges as per the applicable rate considered by TPC-G, the total landed price of coal has been worked at around Rs. 7592.96 /MT. The detailed breakup of cost is as shown in table below;

| Sr. No | Particular | Source/Formula | Units | Price |
|--------|--|-------------------|---------------|-----------------|
| 1 | Landed cost including Freight | As computed above | USD \$/MT | 84.33 |
| 2 | Dollar exchange rate | As per bills | USD/Rs. | 68.69 |
| 3 | Landed cost in Rs. | 1X2 | Rs./MT | 5,792.73 |
| 4 | Excise + Custome Duty + C E Cess + insurance | As submitted | Rs./MT | 801.58 |
| 5 | Handling and wharfage | As submitted | Rs./MT | 502.72 |
| 6 | Other Fuel Handling Charges | As submitted | Rs./MT | 495.93 |
| 7 | Total landed cost | Sum (3:4) | Rs./MT | 7,592.96 |

4.12 Further, the landed price of coal claimed by TPC-G during the month of July, 2018 is around Rs.7265./MT. It is to be noted the cost computed by TPC-G is based on the weighted average of the overall purchase during the respective month and the cost of actual inventory prevailing at that time therefore there is a variation in the between the cost claimed by TPC-G and computed by the Commission. However, the sample calculations are found to be in similar range as submitted by TPC-G.



4.13 Further, the Commission has observed that the price of imported coal in international market has increased significantly and the coal index for the Indonesian coal was in the range of 94 USD to 107 USD which is more than 20% higher as compared to the same period in previous year. Due to this there is a rise in the landed cost of coal. The below table shows the trend of HBA indices, dollar conversion rate and landed cost claimed during the last six months.

| Month | HBA \$/MT | Dollar Rate Rs./\$ | Coal Cost Rs./MT |
|--------|-----------|--------------------|------------------|
| Apr-18 | 94.75 | 65.64 | 7,027.23 |
| May-18 | 89.53 | 67.54 | 6,952.18 |
| Jun-18 | 96.61 | 67.79 | 6,939.21 |
| Jul-18 | 104.65 | 68.69 | 7,265.86 |
| Aug-18 | 107.83 | 69.55 | 7,380.23 |
| Sep-18 | 104.81 | 72.22 | 7,848.16 |

4.14 As can be seen from table above, the HBA indices have increase abnormally and were at its peak during the Q2 of FY 2018-19. Further, as the dollar exchange rate has also increased, the landed cost mainly in the month of September was observed to be higher as compared to other months. Considering the above Commission allows the landed cost of imported coal as submitted by DTPS.

4.15 TPC-D had purchased non-Solar and Solar RE power from various approved sources as well as through the REC mechanism. TPC-D has long-term tie ups with wind and solar generators. TPC-D has purchase total 73.50 MUs, 64.29 MUs and 23.60 MUs of RE power during the months of July, August and September, 2018 respectively. This power has been purchased by TPC-D as per Generic Tariff rate approved by the Commission. The average power purchase cost from RE sources during the months of July and August 2018 is Rs. 6.05/kWh and Rs. 5.17/kWh respectively which is lower as compared to MYT approved rate of Rs.7.75/kWh. The APPC for the month of September is Rs.5.97/kWh as compared to MTR approved rate of Rs.4.63/kWh.

4.16 The Commission in its MYT Order has approved the average power purchase cost from RE sources of Rs. 7.75/kWh as stated above, considering the purchase from existing tied up sources and the balance requirement to RPO obligation through REC purchase during the year. Whereas, the Commission in its MTR Order dated 12 September, 2018, has revised the APPC from RE sources considering the purchase form existing tied-up long term Solar and Non-Solar sources. The APPC for existing solar sources has taken as Rs.9.83/kWh and for non-solar it was considered as Rs.4.99/kWh. The balance requirement of Solar and Non-Solar RPO target was considered to be met through new RE sources considering APPC as Rs.3.53/kWh for Solar, Rs.3.05/kWh for Non-Solar and Rs.5.31/kWh for micro/mini hydro purchase. No REC purchase has been considered in MTR Order for FY 2018-19. Based on



above the weighted average cost of power purchase for FY 2018-19 in MTR Order has been worked out as Rs.4.63/kWh which was around Rs.7.75/kWh in the MYT Order.

- 4.17 Due to this the APPC mainly for the month of September is appearing higher when compared to the MTR approved rate. As far as REC is concerned, TPC-D has purchased REC of worth Rs.6.64 Crore mainly in the month of July 2018, whereas, no REC has been procured during the month of August. Further, during the month of September it has purchased REC of worth Rs.0.798 Crore. TPC-D stated that it has purchased REC to fulfil its RPO obligation which is in accordance with the Regulation 7.2 of MERC (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2016.
- 4.18 However, in MTR Order the Commission has not considered any REC purchase as explained in para above, REC has been procured by TPC-D. In this context while clarification sought, TPC-D stated as MTR Order was issued on 12 September, 2018, it is very difficult for them to arrange power from new sources within such a short span of time. The Commission has sought for Bills/invoices of REC purchase from different sources along with obligation report issued by IEX for the aforesaid purchase. TPC-D has provided the Certificate of purchase and obligation report issued by IEX.
- 4.19 With regards to bilateral, TPC-D has purchased 26.20 MUs, 13.05 MUs and 7.08 MUs respectively during the months of July, August and September, 2018. The Commission has asked TPC-D whether the power through traders has been procured through competitive bidding as per guidelines issued by MOP. In response to this TPC-D stated that it has purchased power from IEX, Supa and Nivde wind plants during the aforesaid periods. Further, the purchase quantum in the month of July is high as compared to other months mainly on account of lower purchase from TPC-G due to the low PLF of Unit 5 as already explained in the para above. The average power purchase cost from traders is Rs. 2.83/kWh, Rs.2.69/kWh and Rs. 2.89/kWh respectively during the months of July, August and September, 2018 as compared to the MYT approved rate of Rs. 3.13/kWh and MTR approved rate of Rs.2.86/kWh. TPC-D has submitted the supporting invoice and obligation report of IEX during the aforesaid period. The Commission has scrutinised the documents submitted and found to be in order.
- 4.20 Further, it was observed that TPC-D has considered energy purchase towards Unscheduled Interchange (UI) during the months of July to September on a provisional basis. In response to clarification sought 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 UI rate has been computed based on the amount paid by Tata Power-D for provisional UI Bills. The bills/invoices of UI for the period July to September are yet to be received as the settlement of UI is not completed.



- 4.21 The Commission has been disallowing these entries being as provisional. TPC-D has requested to consider these provisional entries as UI rates are normally lower as compared to other sources of power. Thus consideration of the same reduces the average power purchase cost thus reducing FAC burden on consumers. Therefore, as requested by Utility, the Commission has revised its approach and considered the power purchase quantum as well as the cost towards UI from this FAC approval onwards. However, Utility is required to expedite the UI settlement process and submit the actual bills with adjustments if any promptly.
- 4.22 Further, it was observed that TPC-D has done sale of surplus power during the months of July to September, 2018. TPC-D has sold 19.12 MUs, 29.37 MUs and 17.09 MUs of power at a price of Rs. 5.75/kWh, Rs.5.33/kWh and Rs.6.45/kWh during the month of July, August and September, 2018 respectively. With such a sale of power TPC-D has earned revenue of Rs. 10.99 Crore, Rs. 15.66 Crore and Rs 11.03 Crore during the aforesaid period. The Commission has compared the rate 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. 3.46/kWh, Rs. 3.34/kWh and Rs. 4.69/kWh for the months of July, August and September, 2018 respectively. Against the above prices prevailing at IEX, TPC-D has managed to sold the surplus power at a higher rate, thus lowering the APPC and benefitting the consumers. Hence, based on this the Commission has considered the actual quantum and revenue against surplus sale.
- 4.23 Based on above, the key reason for variation in APPC are, increase in the fuel price during the respective period, lower PLF of plant in the month of July and August, absence of new sources of power in total RE portfolio. Accordingly, the Commission allows the average power purchase cost of **Rs. 4.58/kWh** for the month of July, 2018, **Rs. 4.39/kWh** for the month of August, 2018 and **Rs. 4.33/kWh** for the month of September, 2018 as shown in the tables above.

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

- 5.1 The Commission has worked out the average power purchase costs for the months as shown in above tables. The same has been compared with the average power purchase cost approved by the Commission in Tariff Order dated 21 October, 2016 and in Tariff Order dated 12 September, 2018 accordingly arrived at differential per unit rate at which Z_{FAC} is to be passed on to the consumers.
- 5.2 The following table shows the Z_{FAC} worked out by the Commission on account of difference in fuel and power purchase cost for the months of July, 2018 to September, 2018.



| S. No. | Particulars | Units | Jul, 2018 | Aug, 2018 | Sept, 2018 |
|----------|---|------------------|--------------|--------------|-------------|
| 1 | Average power purchase cost approved by the Commission | Rs./kWh | 4.03 | 4.03 | 4.33* |
| 2 | Actual average power purchase cost | Rs./kWh | 4.58 | 4.38 | 4.33 |
| 3 | Change in average power purchase cost (=2 -1) | Rs./kWh | 0.56 | 0.35 | 0.01 |
| 4 | Net Power Purchase | MU | 378.44 | 378.01 | 398.85 |
| 5 | Change in fuel and power purchase cost (=3 x 4/10) | Rs. Crore | 21.10 | 13.26 | 0.35 |

*as per MTR Order

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

6.1 After adjustment for over-recovery/under recovery (B), the adjustment factor to be added / reduced is as below:

| S. No. | Particulars | Units | Jul, 2018 | Aug, 2018 | Sept, 2018 |
|------------|--|------------------|-------------|--------------|-------------|
| 1.1 | Incremental cost allowed to be recovered in Month n-4 | Rs. Crore | 6.60* | 25.74* | 28.24 |
| 1.2 | Incremental cost in Month n-4 actually recovered in month n-2 | Rs. Crore | (0.51) | 9.26 | 24.43 |
| 1.3 | Adjustment factor for over-recovery/under-recovery (1.2 - 1.1) | Rs. Crore | 7.11 | 16.48 | 3.81 |
| 2.0 | Carried forward adjustment attributable to application of ceiling limit for previous month | Rs. Crore | - | - | - |
| 3.0 | Net Adjustment factor for over-recovery/under-recovery (1.3+ 1.4) | Rs. Crore | 7.11 | 16.48 | 3.81 |

*Corrected as per previous approved vetting report

6.2 TPC-D in its submission has considered the cost allowed to be recovered for the month of July and August as Rs.(0.08) Crore and Rs. 11.29 Crore respectively as against approved value of Rs.6.60 Crore and Rs. 25.74 Crore. In response to clarification sought, TPC-D stated the as the FAC for the billing month of September and October, 2018 was charged to consumers prior to the post facto approval of FAC for Q1 of FY 2017-18 therefore aforesaid values have been considered as per their computation. However, the Commission has considered the approved amount in this report and accordingly computed the FAC.

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/ Holding cost for under/ over recovery for the months of April, 2018 to June, 2018.



| Month | Jul, 2018 | Aug, 2018 | Sept, 2018 |
|---|-----------|-----------|------------|
| Adjustment Factor (Rs. Crore) | 7.11 | 16.48 | 3.31 |
| Applicable Interest Rate | 9.75% | 9.75% | 9.95% |
| Carrying/ Holding cost for under/ over recovery (Rs. Crore) | 0.06 | 0.13 | 0.03 |

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 | |
|-------|---|-------|--------------------------|--------------|----------|
| | | | | Jul-18 | Aug-18 |
| 1 | Energy Requirement for TPC-D Consumers at T<D interface | MU | 2567.96 | 994.71 | 1,231.80 |
| 2 | TPC-D Retail Sales (excluding sales at 110/132 kV level) | MU | 2541.77 | 983.18 | 1,233.71 |
| 3 | Distribution Loss (1 - 2) | MU | 26.19 | 11.53 | (1.91) |
| 4 | Distribution Loss as % of net energy input (3/1) | % | 1.02% | 1.16% | (0.16)% |
| 5 | Excess Distribution Loss = [Actual Distribution Loss (4) - Distribution loss approved] x Net Energy Input (1) | MU | - | 0.409 | - |



| S. No | Particulars | Units | Approved in Tariff Order | Actual up to | |
|-------|---|-----------|--------------------------|--------------|--------|
| | | | | Jul-18 | Aug-18 |
| 6 | Disallowance of FAC due to excess Distribution Loss | Rs. Crore | - | 0.034 | - |

| S. No | Particulars | Units | Approved in Tariff Order | Actual up to |
|-------|---|-----------|--------------------------|--------------|
| | | | | Sept-18 |
| 1 | Energy Requirement for TPC-D Consumers at T<>D interface | MU | 2397.00 | 1,467.35 |
| 2 | TPC-D Retail Sales (excluding sales at 110/132 kV level) | MU | 2372.55 | 1,462.59 |
| 3 | Distribution Loss (1 - 2) | MU | 24.45 | 4.77 |
| 4 | Distribution Loss as % of net energy input (3/1) | % | 1.02% | 0.33% |
| 5 | Excess Distribution Loss = [Actual Distribution Loss (4) - Distribution loss approved] x Net Energy Input (1) | MU | - | - |
| 6 | Disallowance of FAC due to excess Distribution Loss | Rs. Crore | - | - |

8.3 It was observed that the distribution loss for the month of August computed by TPC-D worked at negative. The Commission has sought for clarification in response to which TPC-D stated that negative distribution losses during the month of August, 2018 is due to the cyclic Billing of Low Tension (LT) consumers which will get adjusted in the next Billing period. Further, TPC-D submitted that even though the distribution loss for some months may be negative, the rolling distribution loss at the end of the financial year is positive.

8.4 As the distribution loss for the month of July, 2018 is higher than the MYT approved figures, hence FAC amounting to Rs. 0.034 Crore has been disallowed due to excess distribution loss.

9. Summary of Allowable Z_{FAC}

9.1 The summary of the FAC amount as approved by the Commission for the month of July, 2018 to September, 2018 which is allowed to be recovered in the billing month of September, 2018 to November, 2018 is as shown in the Table below.



| S. No. | Particulars | Units | Jul, 2018 | Aug, 2018 | Sept, 2018 |
|------------|---|------------------|--------------|--------------|-------------|
| 1.0 | Calculation of ZFAC | | | | |
| 1.1 | Change in cost of generation and power purchase attributable to Sales within the License Area (F) | Rs. Crore | 21.10 | 13.26 | 0.35 |
| 1.2 | Carrying cost for over-recovery/under-recovery (C) | Rs. Crore | 0.06 | 0.13 | 0.03 |
| 1.3 | Adjustment factor for over-recovery/under-recovery (B) | Rs. Crore | 7.11 | 16.48 | 3.81 |
| 1.4 | ZFAC = F+C+B | Rs. Crore | 28.27 | 29.87 | 4.19 |
| 2.0 | Calculation of FAC Charge | | | | |
| 2.1 | Energy Sales within the License Area | MU | 340.33 | 369.95 | 371.49 |
| 2.2 | Excess Distribution Loss | MU | 0.41 | - | - |
| 2.3 | ZFAC per kWh | Rs./kWh | 0.83 | 0.81 | 0.11 |
| 2.4 | Cap at 20% of variable component of tariff | Rs./kWh | 1.22 | 1.22 | 1.17 |
| 2.5 | FAC Charge allowable (Minimum of 2.3 and 2.4) | Rs./kWh | 0.83 | 0.81 | 0.11 |
| 3.0 | Recovery of FAC | | | | |
| 3.1 | Allowable FAC [(2.1 x 2.5)/10] | Rs. Crore | 28.27 | 29.87 | 4.19 |
| 3.2 | FAC disallowed corresponding to excess Distribution Loss [(2.2 x 2.5)/10] | Rs. Crore | 0.03 | | |
| 4.0 | Total FAC based on category wise and slab wise allowed to be recovered | Rs. Crore | 28.24 | 29.87 | 4.19 |
| 4.1 | Carried forward FAC for recovery during future period (3.1-3.2-4.0) | Rs. Crore | - | - | - |

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: —

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

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 a variation of Z_{FAC} in absolute terms on considering category wise per unit FAC worked out and category wise actual sales for the months of July, 2018 to September, 2018.

10.3 The variation in FAC in absolute terms is due to formula error of Z_{FAC} computed on per unit basis. The variation however is taken care in the adjustment factor of subsequent months.

10.4 The following table shows per unit Z_{FAC} to be charged to the consumers of TPC-D for the billing month of September, 2018 to November, 2018.

AC for Billing Month of September, 2018 to November, 2018

| S. No | Consumer Category | Slabs | ZFAC to be levied in billing month of | | |
|-------|-----------------------|-----------|---------------------------------------|-----------|-----------|
| | | | Sept'18 | Oct'18 | Nov'18 |
| | | | (Rs./kWh) | (Rs./kWh) | (Rs./kWh) |
| (A) | LT Category | | | | |
| 1 | LT 1 – BPL | 0 – 30 | 0.176 | 0.176 | (0.033) |
| 2 | LT 1 - Residential S1 | 0 – 100 | 0.169 | 0.110 | (0.018) |
| 3 | LT 1 - Residential S2 | 101 – 300 | 0.445 | 0.291 | (0.048) |
| 4 | LT 1 - Residential S3 | 301 – 500 | 0.758 | 0.495 | (0.083) |



| S. No | Consumer Category | Slabs | ZFAC to be levied in billing month of | | |
|------------|---|-----------|---------------------------------------|-----------|-----------|
| | | | Sept'18 | Oct'18 | Nov'18 |
| | | | (Rs./kWh) | (Rs./kWh) | (Rs./kWh) |
| 5 | LT I - Residential S4 | > 501 | 1.047 | 0.684 | (0.114) |
| 6 | LT II Commercial (A) | 0 - 20 kW | 0.694 | 0.453 | (0.076) |
| 7 | LT II Commercial (B) | 20-50 kW | 0.728 | 0.476 | (0.079) |
| 8 | LT II Commercial (C) | > 50 kW | 0.867 | 0.566 | (0.094) |
| 9 | LT III (A) - LT Industries | 0 - 20 kW | 0.688 | 0.449 | (0.075) |
| 10 | LT III (B) - LT Industries | > 20 kW | 0.704 | 0.460 | (0.077) |
| 11 | LT IV - Public Water Works | all units | 0.633 | 0.414 | (0.069) |
| 12 | LT V - Advt & Hoardings | all units | 0.872 | 0.570 | (0.095) |
| 13 | LT VI - Street Lights | all units | 0.750 | 0.490 | (0.082) |
| 14 | LT VII (A) - Temporary Supply –Religious | all units | 0.517 | 0.338 | (0.056) |
| 15 | LT VII (B) - Temporary Supply –Others | all units | 0.830 | 0.542 | (0.090) |
| 16 | LT VIII - Crematorium and Burial Grounds | all units | 0.381 | 0.249 | (0.041) |
| 17 | LT IX (A) - Public Service – Govt. Hospitals & Educational Institutes | all units | 0.575 | 0.376 | (0.063) |
| 18 | LT IX (B) - Public Service – Others | all units | 0.754 | 0.493 | (0.082) |
| 19 | LT X - Agriculture (A) Pumpsets | all units | 0.206 | 0.134 | (0.022) |
| 20 | LT X - Agriculture (B) Others | all units | 0.343 | 0.224 | (0.037) |
| (B) | HT Category | | | | |
| 21 | HT - I Industry | all units | 0.803 | 0.525 | (0.087) |
| 22 | HT - II Commercial | all units | 0.848 | 0.554 | (0.092) |
| 23 | HT - III Group Housing Society (Residential) | all units | 0.759 | 0.496 | (0.083) |
| 24 | HT - IV Public Water Works | all units | 0.666 | 0.435 | (0.073) |
| 25 | HT-V Railways, Metro & Monorail | all units | 0.635 | 0.415 | (0.069) |
| 26 | HT-VI (A) Public Service – Govt. Hospitals & Educational Institutes | all units | 0.747 | 0.488 | (0.081) |
| 27 | HT-VI (B) Public Service- Others | all units | 0.810 | 0.529 | (0.088) |
| 28 | HT-VII Temporary Supply | all units | 0.808 | 0.528 | (0.088) |



ANNEXURE B
Detailed Vetting Report
Date: 20 April, 2020

**POST FACTO APPROVAL FOR FAC CHARGES FOR THE MONTHS OF OCTOBER,
2018 TO DECEMBER, 2018**

Subject: Post facto approval of TPC-D's Fuel Adjustment Charges (FAC) for the period of October, 2018 to December, 2018.

Reference: TPC-D's FAC submission for post-facto approval of FAC for the period from October, 2018 to December, 2018.

1. FAC submission by TPC-D:

1.1 TPC-D has submitted FAC submissions for the months of October, 2018 to December, 2018 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 December, 2018 to February, 2018.

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 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.
- 2.4 Vide FAC vetting Report dated 16 January, 2017, the Commission accorded prior approval to the FAC for the month of October, 2016.
- 2.5 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, TPC-D has filed FAC submissions for the months of October, 2018 to December, 2018 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)* | Monthly Approved (MU) | Actual Sales Oct'18 (MU) | Actual Sales Nov'18 (MU) | Actual Sales Dec'18 (MU) |
|--|----------------------------------|-----------------------|--------------------------|--------------------------|--------------------------|
| | (I) | | (III) | (IV) | (V) |
| | | (II=I/12) | | | |
| LT Category | | | | | |
| LT I(A) - Residential (BPL) | 0.02 | 0.00 | - | - | - |
| LT I(B) – Residential | 1,982.37 | 165.20 | 172.86 | 183.53 | 136.27 |
| LT II(A) - Commercial upto 20 kW | 172.28 | 14.36 | 16.34 | 16.66 | 13.91 |
| LT II(B) - Commercial 20 to 50 kW | 89.99 | 7.50 | 8.85 | 7.99 | 7.05 |
| LT II(C) - Commercial > 50 kW | 315.48 | 26.29 | 31.08 | 27.89 | 24.89 |
| LT III(A) - Industrial upto 20 kW | 40.15 | 3.35 | 3.97 | 3.21 | 3.08 |
| LT III(B) - Industrial > 20 kW | 194.75 | 16.23 | 17.81 | 15.93 | 14.79 |
| LT V - Advertisement & Hoardings | 0.09 | 0.01 | 0.00 | 0.01 | 0.01 |
| LT VI – Streetlights | 0.69 | 0.06 | 0.04 | 0.05 | 0.05 |
| LT VII(A) - Temporary Religious | 0.03 | 0.00 | 0.02 | 0.00 | 0.00 |
| LT VII(B) - Temporary Others | 29.46 | 2.46 | 2.34 | 2.05 | 1.92 |
| LT VIII - Crematoriums & Burial Grounds | 0.3 | 0.03 | 0.03 | 0.04 | 0.04 |
| LT IX(A) - Public Service Govt Hospital & Educational Institutions | 1.86 | 0.16 | 0.35 | 0.31 | 0.27 |
| LT IX(B) - Public Services Others | 23.44 | 1.95 | 2.26 | 1.75 | 1.54 |



| Consumer Category | Approved by the Commission (MU)* | Monthly Approved (MU) | Actual Sales Oct'18 (MU) | Actual Sales Nov'18 (MU) | Actual Sales Dec'18 (MU) |
|--|----------------------------------|-----------------------|--------------------------|--------------------------|--------------------------|
| | (I) | (II=I/12) | (III) | (IV) | (V) |
| | HT Category | | | | |
| HT I – Industry | 795.91 | 66.33 | 97.40 | 84.00 | 67.77 |
| HT II – Commercial | 539.41 | 44.95 | 43.69 | 37.26 | 40.74 |
| HT III - Group Housing Society (Resi) | 3.76 | 0.31 | 0.34 | 0.28 | 0.26 |
| HT IV - PWW & Sewage Treatment Plants | 76 | 6.33 | 6.13 | 5.74 | 5.80 |
| HT V(A) - Railways 22/33 kV | 70.08 | 5.84 | 6.65 | 5.52 | 5.29 |
| HT V(B) - Railways Metro & Monorail | 9.05 | 0.75 | - | - | - |
| HT VI(A) - Public Service Govt Hospital & Educational Institutions | 13.27 | 1.11 | 1.17 | 1.03 | 0.94 |
| HT VI(B) - Public Services Others | 96.36 | 8.03 | 18.95 | 16.13 | 12.83 |
| HT VII - Temporary Supply | 25.32 | 2.11 | 2.38 | 2.50 | 3.15 |
| Sub total | 4480.07 | 373.34 | 432.66 | 411.88 | 340.59 |

*As per MTR Order

3.2 It was observed that the total sale for October, November and December, 2018 is 432.66 MUs, 411.88 MUs and 340.59 MUs respectively. The major variation was observed in LT – I (B) Residential, LT – II (B) & LT II (C) Commercial, LT – III (B) Industrial and in HT – I Industry and HT – II Commercial Categories during the months of October to December, 2018.

4. Cost of Power Purchase

4.1 TPC-D purchase 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.

- e) Purchases from Tata Power Company Ltd. (TPC-G)
- f) Renewable energy procurement(RPS)
- g) Bilateral contracts and decrements to the imbalance pool.
- h) Unscheduled Interchanges (Interstate UI)

4.2 The following tables show the variation in average power purchase cost (Rs/kWh) for the months of October, 2018 to December, 2018 as compared to average power purchase cost approved in Tariff Order dated 21 October, 2016 and in Tariff Order dated 12 September, 2018 for applicable months:



| Particulars | Tariff Order Dated 12.09.2018 | | | Actual for Oct, 2018 | | |
|--------------|-------------------------------|-----------------|-----------------------------|----------------------|---------------|-----------------------------|
| | 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 | 3,543.84 | 1,581.88 | 4.46 | 351.04 | 156.69 | 4.46 |
| RE Sources | 639.12 | 295.76 | 4.63 | 16.56 | 11.65 | 7.04 |
| Bilateral | 465.21 | 133.20 | 2.86 | 31.78 | 15.75 | 4.96 |
| Others | - | - | - | 129.42 | 51.60 | 3.99 |
| Total | 4,648.17 | 2,010.84 | 4.33 | 480.46 | 208.30 | 4.34 |

| Particulars | Tariff Order Dated 12.09.2018 | | | Actual for Nov, 2018 | | |
|--------------|-------------------------------|-----------------|-----------------------------|----------------------|---------------|-----------------------------|
| | 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 | 3,543.84 | 1,581.88 | 4.46 | 294.68 | 131.72 | 4.47 |
| RE Sources | 639.12 | 295.76 | 4.63 | 16.59 | 11.56 | 6.97 |
| Bilateral | 465.21 | 133.20 | 2.86 | 12.80 | 4.61 | 3.61 |
| Others | - | - | - | 132.52 | 47.81 | 3.61 |
| Total | 4,648.17 | 2,010.84 | 4.33 | 425.10 | 178.53 | 4.20 |

| Particulars | Tariff Order Dated 12.09.2018 | | | Actual for December, 2018 | | |
|--------------|-------------------------------|-----------------|-----------------------------|---------------------------|---------------|-----------------------------|
| | 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 | 3,543.84 | 1,581.88 | 4.46 | 300.29 | 131.35 | 4.37 |
| RE Sources | 639.12 | 295.76 | 4.63 | 19.11 | 17.35 | 9.08 |
| Bilateral | 465.21 | 133.20 | 2.86 | 1.75 | 0.44 | 2.51 |
| Others | - | - | - | 45.89 | 23.70 | 5.17 |
| Total | 4,648.17 | 2,010.84 | 4.33 | 346.18 | 155.05 | 4.48 |

4.3 The Commission has sought detailed bills/invoices for all of the power purchase sources in order to verify the claim of TPC-D with regards to average power purchase cost for the



months of October, 2018 to December, 2018. 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.

4.4 The Commission has observed that TPC-D has purchased 351.04 MUs, 294.68 MUs and 300.29 MUs during the months of October, 2018 to December, 2018 from TPC-G. The purchase of energy mainly in the month of October is observed higher as compared to other months, which can be contributed to higher PLF of all the Generating Units in the said month. However, in the month of November and December, it was observed that the PLF of TPC-G's Unit 5 was below normative, whereas PLF of other thermal units were above normative. Therefore, the total overall generation was lower during the above period and hence, the lower corresponding purchase. The PLF of TPC-G's Unit 5 was 85.92% in the month of October, whereas in the month of November and December it was 68.44% and 64.77% respectively. TPC-G has stated the lower PLF was mainly due to lower system demand, however, all the Units of TPC-G were available during the above period.

4.5 The Table below shows the monthly availability and cumulative availability of TPC-G's thermal generating Units:

| | | | | | | | | | |
|-------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Unit 5 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 |
| Monthly Availability | 99.71% | 98.96% | 93.51% | 82.06% | 100.00% | 100.00% | 97.74% | 98.45% | 100.00% |
| Cumulative Availability | 99.71% | 99.33% | 97.41% | 93.51% | 94.96% | 94.38% | 96.16% | 96.44% | 96.91% |
| Unit 7 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 |
| Monthly Availability | 100.00% | 100.00% | 100.00% | 67.97% | 94.94% | 100.00% | 100.00% | 100.00% | 100.00% |
| Cumulative Availability | 100.00% | 100.00% | 100.00% | 92.03% | 92.62% | 87.58% | 94.79% | 95.46% | 96.00% |
| Unit 8 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 |
| Monthly Availability | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 96.10% | 98.96% |
| Cumulative Availability | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 99.85% | 99.75% |

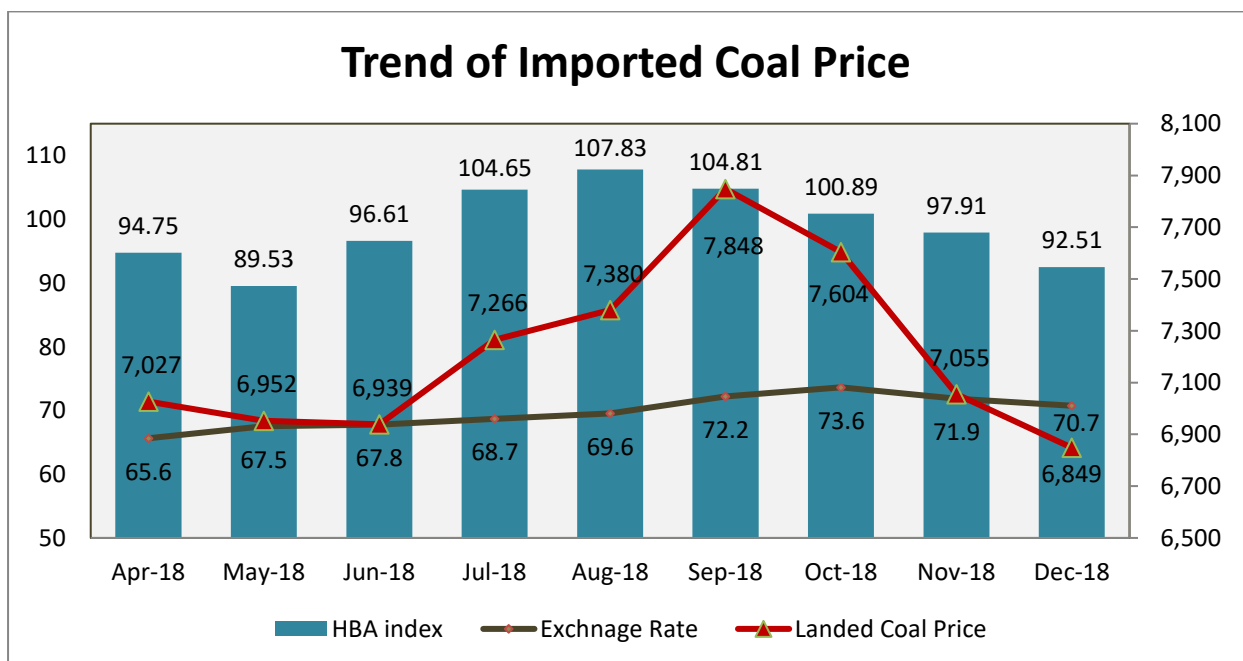
4.6 Even though the PLF for the above mentioned plant were lower for the aforesaid month, the entire monthly fixed cost was payable in line with MYT Regulations, as the cumulative plant availability as shown in Table above was above the normative availability of 85%. This has resulted into fixed cost spread over lower net generation increasing average power purchase price from these Units and thus impacting the APPC. Further, the commission has verified that the payment of Fixed Charges for all the Thermal Units as well as Hydro Units have been worked out based on the cumulative availability as per the Regulation 48.3 and Regulation 49.1 of MYT Regulations, 2015.

4.7 The APPC for TPC-G, which generates power on Imported Coal, Domestic Natural Gas (under APM mechanism), Oil (LSHS), imported RLNG and hydro has been worked out at Rs. 4.46/ kWh, Rs. 4.47/ kWh and Rs. 4.37/kWh for the months of October, November and December respectively as against the MTR approved rate of Rs. 4.46/kWh. As the APPC during the above period is within the range of MTR value, therefore, the same has been considered as submitted by TPC-D.



4.8 The variation in APPC is mainly on account of fixed charge payment as explained in para above and also due to variation in average price of fuel during the respective months. The landed cost of coal for energy charge computation as claimed by TPC-G for the month of October, November and December, 2018 is Rs. 7604/MT and 7054/MT 6848/MT as compared to MTR approved rate of Rs. 7154/MT. It can be seen that the actual landed price in the month of October is higher as compared to MTR approved rate, which is due to steep increase in the imported coal price from January, 2018 onwards primarily attributed to demand supply position of the global coal market. However, during the Q3 months of FY 2018-19 the prices of coal in international market have shown downward trend and consequently the decline in landed price have been observed. TPC-G further stated that average price of coal purchased during Q3 months (Rs. 7201/MT) is lower than the average price of coal during Q2 months (Rs. 7527/MT) of FY 2018-19.

4.9 TPC-G mainly procures imported coal from Indonesian market. The coal reference price is i.e., Harga Batubara Acuan or HBA index for Indonesian coal which is set by Ministry of Energy and Mineral Resources (Indonesia). The Commission has sought for prevailing HBA index during the aforesaid period along with the detailed computation of FOB price at which the coal has been procured by TPC-G. From the data submitted by TPC-G, it can be observed that the HBA index was floating from around 89.53 to 107.83 during last few quarters which is almost 6-year high. However, a slight downward trend is observed during the present quarter. The graph below shows the trend of HBA index, dollar exchange rate and landed coal price as considered by TPC-G for energy charge calculations from Q1 of FY 2018-19 to present quarter i.e., Q3 of FY 2018-19.



4.10 The Commission has also sought for coal purchase bills along with the supporting invoices of other coal handling charges and duties considered for all the months of Q3 of FY 2018-19. The Commission has scrutinised the sample bills submitted and computed the purchase price of coal from sample bills for the month of October as shown in Table below:

| Date | Quantity MT | Unit Price FOB (USD/MT) | Freight Rate (USD/MT) | Freight Rate (USD/MT) | Total Coal Cost (USD) | Average (USD/MT) |
|--------------|---------------|-------------------------|-----------------------|-----------------------|-----------------------|------------------|
| | A | B | C | D=B+C | E=A*D | F=E/A |
| 06-Oct-18 | 63360 | 70.41 | 10.15 | 80.56 | 51,04,282 | 80.56 |
| 07-Oct-18 | 56860 | 65.97 | 10.15 | 76.12 | 43,28,183 | 76.12 |
| 08-Oct-18 | 60060 | 65.76 | 10.15 | 75.91 | 45,59,155 | 75.91 |
| 09-Oct-18 | 56528 | 64.89 | 10.15 | 75.04 | 42,41,861 | 75.04 |
| 10-Oct-18 | 60341 | 65.55 | 10.15 | 75.7 | 45,67,814 | 75.70 |
| Total | 297149 | | | | 2,28,01,294 | 76.73 |

4.11 From the Table above the basic purchase cost of imported coal including freight during the month of October, 2018 as per sample bills submitted worked out at USD 76.73/MT. Considering the dollar conversion rate as Rs. 74.45/USD effective for the month of October as per the notification issued by Central Board of Indirect Taxes and Customs, the purchase price of imported coal in Indian currency stands at Rs. 5712.81/MT. Other coal handling charges such as insurance, handling and wharfage charges, taxes and duties, clean energy cess and other miscellaneous charges have been considered as per the corresponding average charges prevailing during the last fiscal year i.e., FY 2017-18. Accordingly, the total landed cost of coal arrived at around Rs.7446.81 /MT. Further, as the coal purchase during a month is generally not utilised in the same month, hence, there is a variation in above computed coal price vis-à-vis coal price as considered by TPC-G for energy charge calculations. The cost of coal for energy charge computation pertains to coal consumed during the respective months which is arrived based on the actual cost of coal inventory as well as the purchased coal cost received in the coal yard.

4.12 The Commission has sought for detailed computation and methodology for booking the coal consumption cost. In response to this, TPC-G stated that the total coal consumption cost is calculated by SAP system on the basis of Moving Average Price Method by adding the purchases during the month in the opening inventory stock. The closing inventory is then obtain by deducting the coal consumed form the total of opening inventory and purchases during the respective month. TPC-G has submitted the sample calculations arriving at coal consumption cost along with the SAP screenshot supporting its calculations. Apart from above the Commission has also sought for third party sampling report for GCV verifications. TPC-G has submitted the third party sampling certificate issued by Bureau



Veritas for the respective period. The Commission has verified the document submitted and found to be in order.

- 4.13 TPC-D had purchased non-Solar and Solar RE power from various approved sources as well as through the REC mechanism. TPC-D has long-term tie ups with wind and solar generators. TPC-D has purchase total 16.56 MUs, 16.58 MUs and 19.11 MUs of RE power during the months of October, November and December, 2018 respectively. This power has been purchased by TPC-D as per Generic Tariff rate approved by the Commission. The average power purchase cost from RE sources during the months of October, November and December, 2018 is Rs. 7.04/kWh, Rs. 6.97/kWh and Rs. 9.08/kWh respectively as compared to MTR approved rate of Rs.4.63/kWh. Even though TPC-D has purchased RE power at approved rate, the APPC is still appearing higher than the MTR approved rate mainly on account of absence of new cheaper RE sources in the total purchase portfolio as envisaged by the Commission while computing the rate for FY 2018-19 in its MTR Order. Further, TPC-D has purchased REC of worth Rs. 1.50 Crore, Rs. 1.30 Crore and Rs. 5.85 Crore during the month of October, November and December, 2018 respectively. This has also contributed to the increase in APPC.
- 4.14 The Commission in its MTR Order dated 12 September, 2018, has arrived at APPC from RE sources as Rs. 4.63/kWh (which earlier in MYT period was Rs.7.75/kWh) considering the purchase from existing tied-up long term Solar and Non-Solar sources. The APPC for existing solar sources in the MTR Order has taken as Rs.9.83/kWh. As against this rate, TPC-D has purchased solar power at a rate of Rs. 8.99/kWh, Rs. 9.64/kWh and Rs. 9.69/kWh in the month of October, November and December, 2018 respectively which is within the MTR approved rate. The APPC for existing non-solar in the MTR Order was considered as Rs.4.99/kWh. As against this rate, TPC-D has purchased non-solar power at a rate of Rs. 5.02/kWh, Rs. 5.06/kWh and Rs.5.05/kWh in the month of October, November and December, 2018 respectively.
- 4.15 Further, in the MTR Order the balance requirement of RE power in order to fulfil Solar and Non-Solar RPO target was considered to be met through new RE sources considering APPC as Rs.3.53/kWh for Solar, Rs.3.05/kWh for Non-Solar and Rs.5.31/kWh for micro/mini hydro purchase. However, as the MTR Order was issued on 12 September, 2018 i.e., almost by the close of H1 of FY 2018-19, TPC-D has not able to arrange power from new sources within such a short span of time. Accordingly, due to the absence of less costly new approved solar/non-solar sources in the total RE portfolio, the actual weighted average power purchase cost has driven towards costlier approved sources thus, impacted the APPC.
- 4.16 In addition, no REC purchase has been considered in MTR Order for FY 2018-19. However, TPC-D has purchased REC of worth Rs. 1.50 Crore, Rs. 1.30 Crore and Rs. 5.85 Crore during the month of October, November and December, 2018 respectively. This has also resulted into an increase in APPC. Further, TPC-D stated that it has purchased REC to fulfil



its RPO obligation which is in accordance with the Regulation 7.2 of MERC (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2016

- 4.17 Based on above the weighted average cost of power purchase for FY 2018-19 in MTR Order has been worked out as Rs.4.63/kWh. Whereas, as explained in paras above, the actual APPC has worked out as Rs. 7.04/kWh, Rs. 6.97/kWh and Rs. 9.08/kWh during the months of October, November and December, 2018 respectively. Accordingly, the Commission has considered the RE purchase.
- 4.18 With regards to bilateral, TPC-D has purchased 31.79 MUs, 12.80 MUs and 1.75 MUs respectively during the months of October, November and December, 2018. TPC-D has purchased power from IEX, Supa and Nivde wind plants during the aforesaid periods as per MOP guidelines through DEEP Portal. The average power purchase cost from traders is Rs. 4.96/kWh, Rs.3.60/kWh and Rs. 2.51/kWh respectively during the month of October, November and December, 2018 as compared to MTR approved rate of Rs.2.86/kWh. However, the Commission in its Order in Case No. 319 of 2018 dated 3 December has increased the ceiling rate for purchase of short-term power to Rs. 5.00/kWh for FY 2018-19 and FY 2019-20. Therefore, the aforesaid purchase of bilateral power is within the revised rate as approved in the said Order. Hence, the Commission has considered the bilateral purchase as submitted by TPC-D.
- 4.19 Further, it was observed that TPC-D has considered energy purchase towards Unscheduled Interchange (UI) during the months of October, November and December, 2018 on provisional basis. In response to clarification sought 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 UI rate has been computed based on the amount paid by Tata Power-D for provisional UI Bills. The bills/invoices of UI for the period October, November and December, 2018 are yet to be received as the settlement of UI is not completed.
- 4.20 The Commission has been disallowing these entries being as provisional. TPC-D has requested to consider these provisional entries as UI rates are normally lower as compared to other sources of power. Thus consideration of the same reduces the average power purchase cost thus reducing FAC burden on consumers. Therefore, as requested by Utility, the Commission has revised its approach and considered the power purchase quantum as well as the cost towards UI from this FAC approval onwards. However, Utility is required to expedite the UI settlement process and submit the actual bills with adjustments if any promptly.
- 4.21 Further, it was observed that TPC-D has done sale of surplus power during the months of October, November and December, 2018. TPC-D has sold 0.55 MUs, 0.20 MUs and 9.68 MUs of power at a price of Rs. 5.29/kWh, Rs.5.91/kWh and Rs.4.65/kWh during the month



of October, November and December, 2018 respectively. With such a sale of power TPC-D has earned revenue of Rs. 0.29 Crore, Rs. 0.12 Crore and Rs 4.50 Crore during the aforesaid period. The Commission has compared the rate 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. 5.94/kWh, Rs. 3.59/kWh and Rs.3.30/kWh for the months of October, November and December, 2018 respectively. Against the above prices prevailing at IEX, TPC-D has managed to sold the surplus power at a higher rate, thus lowering the APPC and benefitting the consumers. Hence, based on this the Commission has considered the actual quantum and revenue against surplus sale.

4.22 Based on above, the key reason for variation in APPC are, variation in the fuel price during the respective period, lower PLF of plant in the month of November and December, impact of fixed charge payment based on cumulative availability, absence of new sources of power in total RE portfolio. Accordingly, the Commission allows the average power purchase cost of **Rs. 4.34/kWh** for the month of October, 2018, **Rs. 4.20/kWh** for the month of November, 2018 and **Rs. 4.47/kWh** for the month of December, 2018 as shown in the tables above.

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

5.1 The Commission has worked out the average power purchase costs for the months as shown in above tables. The same has been compared with the average power purchase cost approved by the Commission in Tariff Order dated 12 September, 2018 accordingly arrived at differential per unit rate at which Z_{FAC} is to be passed on to the consumers.

5.2 The following table shows the Z_{FAC} worked out by the Commission on account of difference in fuel and power purchase cost for the months of October, 2018 to December, 2018.

| S. No. | Particulars | Units | Oct, 2018 | Nov, 2018 | Dec, 2018 |
|--------|---|------------------|-------------|---------------|-------------|
| 1 | Average power purchase cost approved by the Commission | Rs./kWh | 4.33 | 4.33 | 4.33 |
| 2 | Actual average power purchase cost | Rs./kWh | 4.34 | 4.20 | 4.48 |
| 3 | Change in average power purchase cost (=2 -1) | Rs./kWh | 0.01 | (0.13) | 0.15 |
| 4 | Net Power Purchase | MU | 480.46 | 425.10 | 346.18 |
| 5 | Change in fuel and power purchase cost (=3 x 4/10) | Rs. Crore | 0.44 | (5.38) | 5.29 |

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

6.1 After adjustment for over-recovery/under recovery (B), the adjustment factor to be added / reduced is as below:



| S. No. | Particulars | Units | Oct, 2018 | Nov, 2018 | Dec, 2018 |
|--------|--|------------------|-----------|-----------|-----------|
| 1.1 | Incremental cost allowed to be recovered in Month n-4 | Rs. Crore | 29.87* | 4.19* | 10.94 |
| 1.2 | Incremental cost in Month n-4 actually recovered in month n-2 | Rs. Crore | 19.47 | (3.46) | (1.07) |
| 1.3 | Adjustment factor for over-recovery/under-recovery (1.2 - 1.1) | Rs. Crore | 10.40 | 7.65 | 12.00 |
| 1.4 | Amount considered to be recovered as per previous FAC approval | Rs. Crore | | 4.47 | 11.42 |
| 1.5 | Carried forward adjustment attributable to application of ceiling limit for previous month | Rs. Crore | - | - | - |
| 1.6 | Net Adjustment factor for over-recovery/under-recovery (1.3+ 1.4) | Rs. Crore | 10.40 | 12.12 | 23.42 |

*Corrected as per previous approved vetting report

6.2 TPC-D in its submission has considered the cost allowed to be recovered for the month of October and November as Rs.15.32 Crore and Rs. (2.56) Crore respectively as against approved value of Rs.29.87 Crore and Rs. 4.19 Crore. However, the Commission has considered the approved amount in this report and computed the FAC. Further, as per previous post facto approval, TPC-D has considered a recovery of Rs. 4.47 Crore and Rs. 11.42 Crore in the month of November and December, 2019 respectively. Accordingly, the considering the above, the Commission has worked out adjustment factor as shown in Table above.

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/ Holding cost for under/ over recovery for the months of October 2018 to December, 2018.

| Month | Oct, 2018 | Nov, 2018 | Dec, 2018 |
|---|-----------|-----------|-----------|
| Adjustment Factor (Rs. Crore) | 10.40 | 7.65 | 12.00 |
| Applicable Interest Rate | 10.00% | 10.00% | 10.00% |
| Carrying/ Holding cost for under/ over recovery (Rs. Crore) | 0.09 | 0.06 | 0.10 |

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. N | Particulars | Units | Approved in Tariff Order | Actual up to | | |
|------|---|------------------|--------------------------|--------------|---------|---------|
| | | | | Oct-18 | Nov-18 | Dec-18 |
| 1 | Energy Requirement for TPC-D Consumers at T<D interface | MU | 2397.00 | 1706.27 | 1930.96 | 2134.49 |
| 2 | TPC-D Retail Sales (excluding sales at 110/132 kV level) | MU | 2372.55 | 1703.88 | 1931.42 | 2136.28 |
| 3 | Distribution Loss (1 - 2) | MU | 24.45 | 2.38 | (0.45) | (1.79) |
| 4 | Distribution Loss as % of net energy input (3/1) | % | 1.02% | 0.14% | 0.02% | 0.08% |
| 5 | Excess Distribution Loss = [Actual Distribution Loss (4) - Distribution loss approved] x Net Energy Input (1) | MU | - | - | - | - |
| 6 | Disallowance of FAC due to excess Distribution Loss | Rs. Crore | - | - | - | - |

8.3 It was observed that the distribution loss for the month of November and December computed by TPC-D worked at negative. The reason for negative loss is due to the cyclic Billing of Low Tension (LT) consumers which will get adjusted in the next Billing period.



Further, TPC-D had submitted that even though the distribution loss for some months may be negative, the rolling distribution loss at the end of the financial year is positive.

- 8.4 As the distribution loss for the month of October, November and December, 2018 is lower than the normative approved by the Commission, hence, no disallowance due to excess distribution loss computed.

9. Summary of Allowable Z_{FAC}

- 9.1 The summary of the FAC amount as approved by the Commission for the month of October, 2018 to December, 2018 which is allowed to be recovered in the billing month of December, 2018 to February, 2019 is as shown in the Table below.

| S. No. | Particulars | Units | Oct, 2018 | Nov, 2018 | Dec, 2018 |
|------------|---|------------------|--------------|-------------|--------------|
| 1.0 | Calculation of Z_{FAC} | | | | |
| 1.1 | Change in cost of generation and power purchase attributable to Sales within the License Area (F) | Rs. Crore | 0.44 | (5.38) | 5.29 |
| 1.2 | Carrying cost for over-recovery/under-recovery (C) | Rs. Crore | 0.09 | 0.06 | 0.10 |
| 1.3 | Adjustment factor for over-recovery/under-recovery (B) | Rs. Crore | 10.40 | 12.12 | 23.42 |
| 1.4 | Z_{FAC} = F+C+B | Rs. Crore | 10.94 | 6.81 | 28.81 |
| 2.0 | Calculation of FAC Charge | | | | |
| 2.1 | Energy Sales within the License Area | MU | 455.18 | 402.03 | 334.35 |
| 2.2 | Excess Distribution Loss | MU | - | - | - |
| 2.3 | Z _{FAC} per kWh | Rs./kWh | 0.24 | 0.17 | 0.86 |
| 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 | 0.24 | 0.17 | 0.86 |
| 3.0 | Recovery of FAC | | | | |
| 3.1 | Allowable FAC [(2.1 x 2.5)/10] | Rs. Crore | 10.94 | 6.81 | 28.81 |
| 3.2 | FAC disallowed corresponding to excess Distribution Loss [(2.2 x 2.5)/10] | Rs. Crore | - | - | - |
| 4.0 | Total FAC based on category wise and slab wise allowed to be recovered | Rs. Crore | 10.94 | 6.81 | 28.81 |
| 4.1 | Carried forward FAC for recovery during future period (3.1-3.2-4.0) | Rs. Crore | - | - | - |



9.2 It can be seen from the above table that a standalone FAC for the month of October is Rs. 10.94 Crore, for the November is Rs. 6.81 and for the month of December is Rs. 28.81 Crore. The total net FAC charged for the Q3 months is thus Rs. 46.55 Crore.

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 a



variation of Z_{FAC} in absolute terms on considering category wise per unit FAC worked out and category wise actual sales for the months of October, 2018 to December, 2018.

10.3 The variation in FAC in absolute terms is due to formula error of Z_{FAC} computed on per unit basis. The variation however is taken care in the adjustment factor of subsequent months.

10.4 The following table shows per unit Z_{FAC} to be charged to the consumers of TPC-D for the billing month of December, 2018 to February, 2019.

AC for Billing Month of December, 2018 to February, 2018

| S. No | Consumer Category | Slabs | ZFAC to be levied in billing month of | | |
|------------|---|-----------|---------------------------------------|-----------|-----------|
| | | | Dec'18 | Jan'19 | Feb'19 |
| | | | (Rs./kWh) | (Rs./kWh) | (Rs./kWh) |
| (A) | LT Category | | | | |
| 1 | LT 1 – BPL | 0 – 30 | -0.039 | 0.000 | 0.176 |
| 2 | LT 1 - Residential S1 | 0 – 100 | -0.022 | 0.000 | 0.112 |
| 3 | LT 1 - Residential S2 | 101 – 300 | -0.058 | 0.000 | 0.295 |
| 4 | LT 1 - Residential S3 | 301 – 500 | -0.099 | 0.000 | 0.501 |
| 5 | LT 1 - Residential S4 | > 501 | -0.136 | 0.000 | 0.692 |
| 6 | LT II Commercial (A) | 0 - 20 kW | -0.090 | 0.000 | 0.459 |
| 7 | LT II Commercial (B) | 20–50 kW | -0.095 | 0.000 | 0.481 |
| 8 | LT II Commercial (C) | > 50 kW | -0.113 | 0.000 | 0.573 |
| 9 | LT III (A) - LT Industries | 0 - 20 kW | -0.090 | 0.000 | 0.455 |
| 10 | LT III (B) - LT Industries | > 20 kW | -0.092 | 0.000 | 0.466 |
| 11 | LT IV - Public Water Works | all units | -0.082 | 0.000 | 0.419 |
| 12 | LT V - Advt & Hoardings | all units | -0.114 | 0.000 | 0.577 |
| 13 | LT VI - Street Lights | all units | -0.098 | 0.000 | 0.496 |
| 14 | LT VII (A) - Temporary Supply –Religious | all units | -0.067 | 0.000 | 0.342 |
| 15 | LT VII (B) - Temporary Supply –Others | all units | -0.108 | 0.000 | 0.549 |
| 16 | LT VIII - Crematorium and Burial Grounds | all units | -0.050 | 0.000 | 0.252 |
| 17 | LT IX (A) - Public Service – Govt. Hospitals & Educational Institutes | all units | -0.075 | 0.000 | 0.380 |
| 18 | LT IX (B) - Public Service – Others | all units | -0.098 | 0.000 | 0.498 |
| 19 | LT X - Agriculture (A) Pumpsets | all units | 0.000 | 0.000 | 0.000 |
| 20 | LT X - Agriculture (B) Others | all units | 0.000 | 0.000 | 0.000 |
| (B) | HT Category | | | | |



| S. No | Consumer Category | Slabs | ZFAC to be levied in billing month of | | |
|-------|---|-----------|---------------------------------------|-----------|-----------|
| | | | Dec'18 | Jan'19 | Feb'19 |
| | | | (Rs./kWh) | (Rs./kWh) | (Rs./kWh) |
| 21 | HT - I Industry | all units | -0.105 | 0.000 | 0.531 |
| 22 | HT - II Commercial | all units | -0.110 | 0.000 | 0.561 |
| 23 | HT - III Group Housing Society (Residential) | all units | -0.099 | 0.000 | 0.502 |
| 24 | HT - IV Public Water Works | all units | -0.087 | 0.000 | 0.441 |
| 25 | HT-V Railways, Metro & Monorail | all units | -0.083 | 0.000 | 0.420 |
| 26 | HT-VI (A) Public Service – Govt. Hospitals & Educational Institutes | all units | -0.097 | 0.000 | 0.494 |
| 27 | HT-VI (B) Public Service- Others | all units | -0.106 | 0.000 | 0.536 |
| 28 | HT-VII Temporary Supply | all units | -0.105 | 0.000 | 0.535 |

ANNEXURE C



**POST FACTO APPROVAL FOR FAC CHARGES FOR THE MONTHS OF JANUARY,
2019 to MARCH, 2019**

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

Reference: TPC-D's FAC submission for post-facto approval of FAC for the period from January, 2019 to March, 2019.

1. FAC submission by TPC-D:

1.1 TPC-D has submitted FAC submissions for the months of January, 2019 to March, 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 March, 2019 to May, 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 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.

2.4 Vide FAC vetting Report dated 16 January, 2017, the Commission accorded prior approval to the FAC for the month of October, 2016.



2.5 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, TPC-D has filed FAC submissions for the months of January, 2019 to March, 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) | Monthly Approved (MU) | Actual Sales | | |
|--|---------------------------------|-----------------------|--------------|-------------|-------------|
| | (I) | | Jan' 19 (MU) | Feb'19 (MU) | Mar'19 (MU) |
| | | (II=I/12) | (III) | (IV) | (V) |
| LT Category | | | | | |
| LT I(A) - Residential (BPL) | 0.02 | 0.00 | - | - | - |
| LT I(B) – Residential | 1,982.37 | 165.20 | 115.00 | 112.98 | 116.58 |
| LT II(A) - Commercial upto 20 kW | 172.28 | 14.36 | 12.39 | 12.18 | 12.54 |
| LT II(B) - Commercial 20 to 50 kW | 89.99 | 7.50 | 6.57 | 6.48 | 7.47 |
| LT II(C) - Commercial > 50 kW | 315.48 | 26.29 | 25.96 | 19.55 | 24.50 |
| LT III(A) - Industrial upto 20 kW | 40.15 | 3.35 | 3.14 | 3.05 | 3.16 |
| LT III(B) - Industrial > 20 kW | 194.75 | 16.23 | 14.04 | 14.01 | 15.56 |
| LT IV - PWW & Sewage Treatment Plants | 0 | 0 | 0.71 | 0.60 | 0.63 |
| LT V - Advertisement & Hoardings | 0.09 | 0.01 | 0.01 | 0.01 | 0.01 |
| LT VI – Streetlights | 0.69 | 0.06 | 0.05 | 0.05 | 0.05 |
| LT VII(A) - Temporary Religious | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| LT VII(B) - Temporary Others | 29.46 | 2.46 | 1.68 | 1.88 | 1.94 |
| LT VIII - Crematoriums & Burial Grounds | 0.3 | 0.03 | 0.04 | 0.03 | 0.02 |
| LT IX(A) - Public Service Govt Hospital & Educational Institutions | 1.86 | 0.16 | 0.25 | 0.25 | 0.29 |
| LT IX(B) - Public Services Others | 23.44 | 1.95 | 1.43 | 1.46 | 1.70 |
| HT Category | | | | | |
| HT I – Industry | 795.91 | 66.33 | 75.85 | 61.46 | 75.96 |
| HT II – Commercial | 539.41 | 44.95 | 40.56 | 30.93 | 42.02 |



| Consumer Category | Approved by the Commission (MU) | Monthly Approved (MU) | Actual Sales | | |
|--|---------------------------------|-----------------------|---------------|---------------|---------------|
| | | | Jan' 19 (MU) | Feb'19 (MU) | Mar'19 (MU) |
| | (I) | (II=I/12) | (III) | (IV) | (V) |
| HT III - Group Housing Society (Resi) | 3.76 | 0.31 | 0.26 | 0.54 | 0.61 |
| HT IV - PWW & Sewage Treatment Plants | 76 | 6.33 | 5.73 | 5.14 | 5.55 |
| HT V(A) - Railways 22/33 kV | 70.08 | 5.84 | 5.04 | 4.71 | 5.81 |
| HT V(B) - Railways Metro & Monorail | 9.05 | 0.75 | - | - | - |
| HT VI(A) - Public Service Govt Hospital & Educational Institutions | 13.27 | 1.11 | 0.90 | 0.89 | 1.13 |
| HT VI(B) - Public Services Others | 96.36 | 8.03 | 10.18 | 6.39 | 7.82 |
| HT VII - Temporary Supply | 25.32 | 2.11 | 3.56 | 3.28 | 3.30 |
| Sub total | 4480.07 | 373.32 | 322.71 | 285.32 | 326.06 |

*As per MTR Order

3.2 It was observed that the total sale for January, February & March, 2019 is 322.71 MUs, 285.32 Mus and 326.06 MUs respectively as compared to 373.34 MUs of sales approved vide MTR Order. The major variation in energy sale during the months of January to March, 2019 was observed in LT-I (B) Residential, LT-II Commercial, LT-III Industrial, HT-I Industrial and HT-II Commercial Categories. The sales in LT-I (B) Residential, LT-II Commercial, LT-III Industrial and HT-II Commercial Categories were lower. However, there was an increase in HT-I Industrial as compared to MTR approved sales.

4. Cost of Power Purchase

4.1 TPC-D purchase 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.

- i) Purchases from Tata Power Company Ltd. (TPC-G)
- j) Renewable energy procurement (RPS)
- k) Bilateral contracts and decrements to the imbalance pool.
- l) Unscheduled Interchanges (Interstate UI)

4.2 The following tables show the variation in average power purchase cost (Rs/kWh) for the months of Jan, 2019 to march, 2019 as compared to average power purchase cost as approved in MTR Order dated 12 September, 2018 for applicable months:



| Particulars | Tariff Order Dated 12.09.2018 | | | Actual for January, 2019 | | |
|--------------|-------------------------------|-----------------|-------------|--------------------------|---------------|-------------|
| | Net Purchase | Cost | APPC | Net Purchase | Cost | APPC |
| | MU | Rs. Crore | Rs/kWh | MU | Rs. Crore | Rs/kWh |
| TPC-G | 3,543.84 | 1,581.88 | 4.46 | 243.70 | 107.35 | 4.41 |
| RE Sources | 639.12 | 295.76 | 4.63 | 16.44 | 15.63 | 9.51 |
| Bilateral | 465.21 | 133.20 | 2.86 | 31.75 | 11.59 | 3.65 |
| Others | - | - | - | (6.11) | (3.16) | 5.17 |
| Total | 4,648.17 | 2,010.84 | 4.33 | 285.79 | 131.41 | 4.60 |

| Particulars | Actual for February, 2019 | | | Actual for March, 2019 | | |
|--------------|---------------------------|---------------|-------------|------------------------|---------------|-------------|
| | Net Purchase | Cost | APPC | Net Purchase | Cost | APPC |
| | MU | Rs. Crore | Rs/kWh | MU | Rs. Crore | Rs/kWh |
| TPC-G | 280.84 | 124.99 | 4.45 | 332.41 | 131.64 | 3.96 |
| RE Sources | 16.45 | 15.73 | 9.57 | 19.54 | 13.52 | 6.92 |
| Bilateral | 1.78 | 0.45 | 2.51 | 3.96 | 1.08 | 2.74 |
| Others | (1.20) | (5.67) | 4.73 | 4.83 | 6.41 | 13.27 |
| Total | 297.86 | 135.50 | 4.55 | 360.74 | 152.66 | 4.23 |

TPC-G (own generation):

- 4.3 TPC-G generates power on Imported Coal, Domestic Natural Gas (under APM mechanism), Oil (LSHS), imported RLNG and Hydro. The Commission has scrutinised the detailed bills/invoices submitted by TPC-D with respect to power purchase from TPC-G (own generation) for all the months of Q4 of FY 2018-19. It was observed that TPC-D has purchased total 243.70 MUs, 280.84 MUs and 332.41 MUs of power during the months of January, February and March, 2019 from TPC-G.
- 4.4 The quantum of power purchase from TPC-G mainly in the month of January, 2019 was observed lower as compared to other months, i.e., February and March, 2019. The reason for such lower purchase is attributable to low PLF and availability of TPC-G's Unit 5. The PLF and availability of Unit 5 during the month of January was 39.66% and 25.38%, respectively. In response to query, TPC-G stated that the availability of Unit 5 was low due to planned outage of around 18.5 days during the said month. However, the availability of Unit 5 during other months of Q4 was above normative. Further, due to this shortfall of energy from TPC-G, the dependency on short term power during the month of January, 2019 has increased as compared to other months of the quarter.



4.5 Even though the availability was lower as mentioned in para above, the entire monthly fixed cost was payable in line with Regulation 48.3 of MYT Regulations, as the cumulative plant availability was above the normative availability of 85%. This has resulted into fixed cost spread over lower net generation increasing average power purchase price from these Units and thus, impacting the APPC. Further, TPC-G has submitted the monthly cumulative availability of each of thermal and hydro generating stations from April 2018 to March, 2019 as shown below:

| | | | | | | | | | | | | |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Unit 5 (Thermal) | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 | Feb-19 | Mar-19 |
| Monthly Availability | 99.71% | 98.96% | 93.51% | 82.06% | 100.00% | 100.00% | 97.74% | 98.45% | 100.00% | 39.66% | 100.00% | 100.00% |
| Cummulative Availability | 99.71% | 99.33% | 97.41% | 93.51% | 94.96% | 94.38% | 96.16% | 96.44% | 96.91% | 91.11% | 91.90% | 91.11% |
| Unit 7 (Thermal) | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 | Feb-19 | Mar-19 |
| Monthly Availability | 100.00% | 100.00% | 100.00% | 67.97% | 94.94% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Cummulative Availability | 100.00% | 100.00% | 100.00% | 92.03% | 92.62% | 87.58% | 94.79% | 95.46% | 96.00% | 96.43% | 96.74% | 96.43% |
| Unit 8 (Thermal) | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 | Feb-19 | Mar-19 |
| Monthly Availability | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 96.10% | 98.96% | 100.00% | 100.00% | 100.00% |
| Cummulative Availability | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 99.85% | 99.75% | 99.82% | 99.87% | 99.82% |
| Bhira (Hydro) | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 | Feb-19 | Mar-19 |
| Monthly Availability | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 95.70% | 100.00% | 93.45% | 98.92% |
| Cummulative Availability | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 99.52% | 99.56% | 99.04% | 99.34% |
| Bhivpuri (Hydro) | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 | Feb-19 | Mar-19 |
| Monthly Availability | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Cummulative Availability | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Khopoli (Hydro) | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 | Feb-19 | Mar-19 |
| Monthly Availability | 100.00% | 98.92% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Cummulative Availability | 100.00% | 99.45% | 99.63% | 99.73% | 99.78% | 99.82% | 99.84% | 99.86% | 99.88% | 99.89% | 99.90% | 99.91% |

4.6 As it can be seen from the figure above, that cumulative availability of all generating stations was above normative availability of 85%, therefore, in line with Regulation 48.3 of MYT Regulations, 2015, the Commission has allowed recovery of full monthly fixed cost during the aforesaid period.

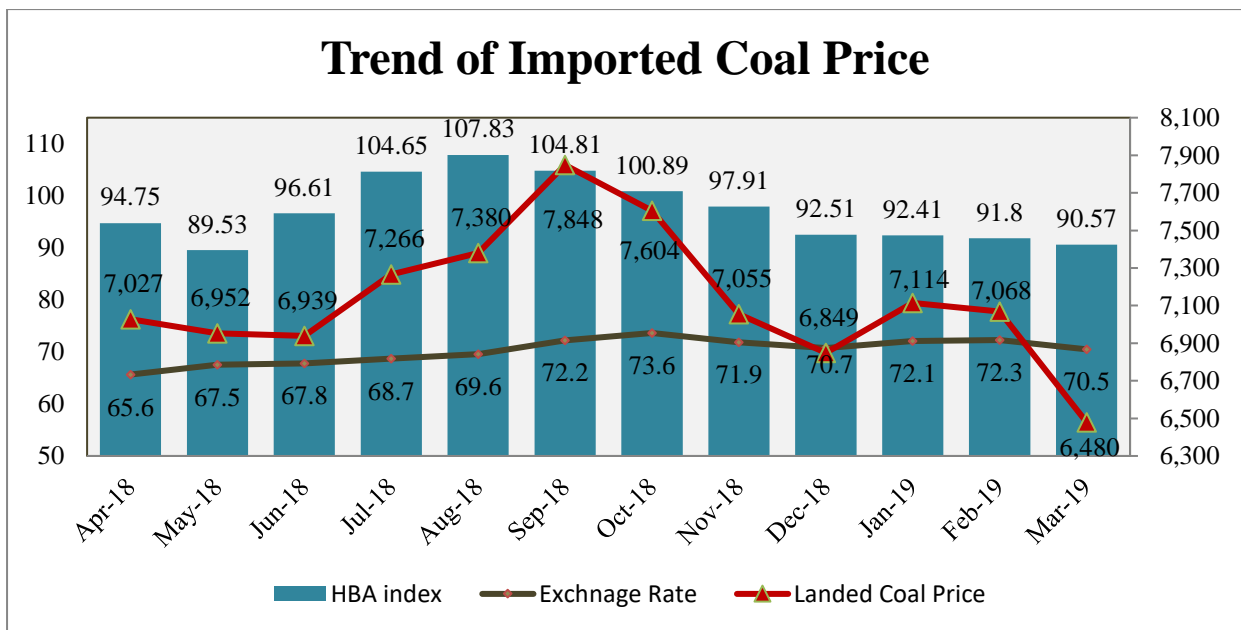
4.7 The average power purchase cost for TPC-G has been worked out at Rs. 4.41/ kWh, Rs. 4.45/ kWh and Rs. 3.96/kWh for the months of January, February, and March, 2019, respectively which is lower than the MTR approved rate of Rs. 4.46/kWh. The gradual reduction in APPC is mainly on account of downward trend in coal price during the aforesaid period. TPC-G mainly procures imported coal from Indonesian market which is linked to Harga Batubara Acuan (HBA) index. The prices of coal in international market have shown downward trend during the above period and hence, the decline in landed price have been observed. The landed cost of coal claimed by TPC-G is Rs. 7114/MT and Rs. 7068/MT, Rs. 6480/MT for the month of January, February and March, 2019 as against the MTR approved rate of Rs. 7154/MT. Such reduction in cost of coal is mainly attributed to demand supply position of the global coal market.

4.8 In order to assess the coal price claimed by TPC-G, the Commission has sought for prevailing HBA index during the aforesaid period along with the detailed computation of



FOB price at which the coal has been procured by TPC-G. The HBA index is the index price for Indonesian coal, which is set by Ministry of Energy and Mineral Resources (Indonesia). From the data submitted by TPC-G, it can be observed that the HBA index was floating from around 89.53 to 107.83 during last few quarters which is almost 6-year high. However, a slight downward trend is observed from the previous quarter, i.e., from Q3 of FY 2018-19 onwards.

4.9 The graph below shows the trend of HBA index, dollar exchange rate and landed coal price as considered by TPC-G for energy charge calculations from Q1 of FY 2018-19 to present quarter, i.e., Q4 of FY 2018-19.



4.10 The Commission has also sought for actual coal purchase bills along with the supporting invoices for other coal handling charges and duties considered during all the months of Q4 of FY 2018-19. The Commission has scrutinised the sample bills submitted and computed the purchase price of coal for the month of February, 2019 as shown in Table below:

| Date | Quantity MT | Unit Price FOB (USD/MT) | Frieght Rate (USD/MT) | Frieght Rate (USD/MT) | Total Coal Cost (USD) | Average (USD/MT) |
|--------------|---------------|-------------------------|-----------------------|-----------------------|-----------------------|------------------|
| | A | B | C | D=B+C | E=A*D | F=E/A |
| 11-Feb-19 | 63200 | 63.96 | 8.88 | 72.84 | 46,03,488 | 72.84 |
| 14-Feb-19 | 62200 | 63.65 | 8.97 | 72.62 | 45,16,964 | 72.62 |
| Total | 125400 | | | | 91,20,452 | 72.73 |



- 4.11 From the Table above the basic purchase cost of imported coal including freight during the month of February, 2019; as per sample bills submitted worked out at USD 72.73/MT. Considering the dollar conversion rate as Rs. 72.30/USD effective for the month of February 2019 as per the notification issued by Central Board of Indirect Taxes and Customs, the purchase price of imported coal in Indian currency stands at Rs. 5258.44/MT. Other coal handling charges such as insurance, handling and wharfage charges, taxes and duties, clean energy cess and other miscellaneous charges have been considered as per the corresponding average charges prevailing during the last fiscal year, i.e., FY 2017-18. Accordingly, the total landed cost of coal arrived at around Rs.7058.44 /MT. Further, as the coal purchase during a month is generally not utilised in the same month, hence, there is a variation in above computed coal price vis-à-vis coal price as considered by TPC-G for energy charge calculations. The cost of coal for energy charge computation pertains to coal consumed during the respective months which is arrived based on the actual cost of coal inventory as well as the purchased coal cost received in the coal yard.
- 4.12 The Commission has sought for detailed computation and methodology for booking the coal consumption cost. In response to this, TPC-G earlier stated that the total coal consumption cost is calculated by SAP system on the basis of Moving Average Price Method by adding the purchases during the month in the opening inventory stock. The closing inventory is then obtained by deducting the coal consumed form the total of opening inventory and purchases during the respective month.
- 4.13 The summary of station wise power purchase from TPC-G and average power purchase cost for Q4 of FY 2018-19 is shown below:

| Source of Power Purchase | Actual for the Quarter | | | | | |
|--------------------------|------------------------|-----------------------------|----------------|-----------------------------|----------------|-----------------------------|
| | Jan-19 | | Feb-19 | | Mar-19 | |
| | Net Purchase | Average power purchase cost | Net Purchase | Average power purchase cost | Net Purchase | Average power purchase cost |
| | MU | Rs./kWh | MU | Rs./kWh | MU | Rs./kWh |
| Own Generation: | | | | | | |
| Unit 4 to 7 | 106.426 | 5.160 | 163.279 | 4.728 | 184.886 | 4.397 |
| Hydro | 60.192 | 1.781 | 47.838 | 2.029 | 70.331 | 1.638 |
| Unit 8 | 77.081 | 5.412 | 69.724 | 5.464 | 77.193 | 5.031 |
| Sub total | 243.699 | 4.405 | 280.840 | 4.451 | 332.410 | 3.960 |

Renewable Energy Purchase:

- 4.14 TPC-D has long-term tie ups with wind and solar generators and has purchased non-Solar and Solar RE power from various approved sources as well as through the REC mechanism.



TPC-D has purchased total 16.44 MUs, 16.44 MUs and 19.54 MUs of RE power at a cost of Rs. 10.16 Crore, Rs. 10.20 Crore and Rs. 11.87 Crore during the months of January, February and March, 2019, respectively. Apart from this RE power, TPC-D has also purchased REC of worth Rs. 5.47 Crore, Rs. 5.53 Crore and Rs. 1.65 Crore during the month of January, February and March, 2019, respectively. Considering the RE power purchase cost and REC cost, the average power purchase cost from RE sources during the months of January, February and March, 2019 is Rs. 9.51/kWh, Rs. 9.56/kWh and Rs. 6.92/kWh, respectively, as compared to MTR approved rate of Rs.4.63/kWh.

4.15 Even though TPC-D has purchased RE power at price approved by the Commission, the weighted average purchase cost is still resulting higher than the MTR approved rate mainly due to following reasons.

- Due to the change in actual quantum 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 against as envisaged by the Commission while determining the price for FY 2018-19 in its MTR Order.
- Due to additional purchase of REC by TPC-D during the respective period in order to fulfil its RPO Obligation of the year.

4.16 The above reasons are explained in paras below. 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. 4.63/kWh (which earlier in MYT period was Rs.7.75/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.9.83/kWh and for non-solar it was considered as Rs.4.99/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.3.53/kWh for Solar, Rs.3.05/kWh for Non-Solar and Rs.5.31/kWh for micro/mini hydro purchase. No REC purchase has been considered in MTR Order for FY 2018-19. Based on above the weighted average cost of power purchase has been worked out as Rs.4.63/kWh for FY 2018-19 in the MTR Order.

4.17 During the present quarter, TPC-D has purchased 4.84 MUs, 4.31 MUs and 4.67 MUs from existing solar sources at a rate of Rs. 8.93/kWh, Rs. 9.63/kWh and Rs. 9.61/kWh in the month of January, February and March, 2019, respectively, which is within the MTR approved rate of Rs. 9.83/kWh. With respect to existing non-solar sources, TPC-D has purchased non-solar power of 11.60 MUs, 12.14 MUs and 14.88 MUs at a rate of Rs. 5.03/kWh, Rs. 4.99/kWh and Rs.4.96/kWh in the month of January, February and March, 2019, respectively as against the MTR approved rate of Rs. 4.99/kWh. Although, the above



solar and non-solar has been procured at an approved rate but due to change in actual quantum generated from these sources during the respective period, there is variation in weighted average price within the months.

- 4.18 Further, as mentioned in paras above that the APPC from RE sources for FY 2018-19 was arrived envisaging the balance requirement of RE power for RPO fulfilment after considering tied up sources, to be met from new cheaper RE sources. However, in actual TPC-D has not purchase any RE power from such new RE sources at a rate approved in MTR Order. Upon query, TPC-D clarified that the MTR Order was issued on 12 September, 2018, i.e., almost by the close of H1 of FY 2018-19, Hence, within such a short span of time TPC-D was not able to arrange power from new sources. Therefore, in absence of these cheaper RE sources in actual RE purchase portfolio, the weighted average price of RE portfolio has impacted.
- 4.19 In addition to above, TPC-D has purchased REC of worth Rs. 12.65 Crore during Q4 months. As against this, no RECs purchase were considered in MTR Order while approving the APPC from RE sources for FY 2018-19. This has also resulted into an increase in APPC during the present quarter. In response to clarification sought against REC purchase, TPC-D stated that it has purchased REC to fulfil its RPO obligation which is in accordance with the Regulation 7.2 of MERC (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2016.
- 4.20 Therefore, based on above, the actual APPC from RE sources considering solar, non-solar power and REC cost has worked out Rs. 9.51/kWh, Rs. 9.56/kWh and Rs. 6.92/kWh, for the month of January, February and March 2019, respectively, as compared to MTR approved rate of Rs.4.63/kWh.

Bilateral Sources/Traders:

- 4.21 With regards to bilateral, TPC-D has purchased 31.75 MUs, 1.78 MUs and 3.96 MUs respectively during the months of January, February and March, 2019. The Commission has enquired whether the above bilateral power from traders has been procured through competitive bidding as per guidelines issued by MOP. In response to this, TPC-D stated that it has purchased power from IEX, Supa & Nivde wind plants and Traders during the aforesaid periods as per MOP guidelines through DEEP Portal. The Table below shows the sources wise purchases from various bilateral sources:



| Month | Source | Trader | MUs | Total (MUs) | Rs/kWh | Rs Crore | Total (Crore) |
|--------|--------|--------|-------|-------------|--------|----------|---------------|
| Jan-19 | IEX | IEX | 4.89 | 31.75 | 2.81 | 1.38 | 11.59 |
| | JSWEL | MPL | 15.39 | | 3.87 | 5.96 | |
| | LMEL | MPPL | 10.12 | | 3.87 | 3.91 | |
| | Supa | | 0.98 | | 2.51 | 0.25 | |
| | Nivde | | 0.37 | | 2.51 | 0.09 | |
| Feb-19 | IEX | IEX | 0.00 | 1.78 | 0.00 | 0.00 | 0.45 |
| | Supa | | 1.19 | | 2.51 | 0.30 | |
| | Nivde | | 0.59 | | 2.51 | 0.15 | |
| Mar-19 | IEX | IEX | 0.82 | 3.96 | 3.59 | 0.29 | 1.08 |
| | Supa | | 1.42 | | 2.51 | 0.36 | |
| | Nivde | | 1.71 | | 2.51 | 0.43 | |

4.22 The average power purchase cost from traders is Rs. 3.65/kWh, Rs.2.51/kWh and Rs. 2.74/kWh during the month of January, February and March, 2019 respectively, as compared to MTR approved rate of Rs.2.86/kWh. The higher quantum of bilateral power mainly in the month of January, 2019 is on account of lower purchase from TPC-G due to the low PLF of Unit 5 as already explained in the paras above.

4.23 Further, it is to be noted that although the power purchase price from trader in MTR Order was approved at Rs.2.86/kWh, but the Commission in its Order in Case No. 319 of 2018 dated 3 December has increased the ceiling rate for purchase of short-term power to Rs. 5.00/kWh for FY 2018-19 and FY 2019-20. Accordingly, the aforesaid purchase of bilateral power by TPC-D is within the revised rate as approved in the said Order. Hence, the Commission has considered the bilateral purchase as submitted by TPC-D.

UI and OLA Sale:

4.24 It was observed that TPC-D has considered Unscheduled Interchange (UI) power of 5.06 MUs at a price of Rs. 2.38/kWh mainly in the months of March 2019. 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 January to March 2019 can be provided once provisional bill settlement of UI is completed. At present, TPC-D has considered UI price at provisional basis.

4.25 The Commission in its previous FAC approval (Q1 of FY 2018-19) had disallowed UI claim being provisional. However, TPC-D in its earlier submission (Q2 of FY 2018-19) has requested to consider these provisional entries as UI rates are normally lower as compared to other sources of power, thus consideration of the same reduces the average power purchase cost, thus, reducing FAC burden on consumers. Therefore, the Commission has



considered the power purchase quantum as well as the cost towards UI. However, Utility is requested to expedite the UI settlement process and submit the actual bills with adjustments if any promptly.

- 4.26 With regards to Outside Licence Area (OLA) or surplus sale, it was observed that TPC-D has sold total 7.54 MUs of power during quarter 4 of FY 2018-19 at a price of Rs. 5.12/kWh. TPC-D has earned a revenue of Rs. 3.86 Crore from this transaction which has been considered in reduction of power purchase cost during the respective period. TPC-D has submitted the sample invoices of OLA sale. Further, the Commission has also 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. 3.33/kWh, Rs. 3.08/kWh and Rs.3.12/kWh for the months of January, February and March, 2019 respectively. TPC-D has sold 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.
- 4.27 Based on above, on an overall basis the key reason for variation in APPC is due to steep increase in fuel price, impact of full monthly fixed cost, absence of new cheaper sources of power in total RE portfolio, purchase of REC to fulfil RPO, hence increasing the RE power purchase cost. Accordingly, the Commission allows the average power purchase cost of **Rs. 4.60/kWh** for the month of January, 2019, **Rs. 4.55/kWh** for the month of February, 2019 and **Rs. 4.23/kWh** for the month of March, 2019 as shown in the tables above.

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

- 5.1 The Commission has worked out the average power purchase costs for the months as shown in above tables. The same has been compared with the average power purchase cost approved by the Commission in Tariff Order dated 21 October, 2016 and in Tariff Order dated 12 September, 2018 accordingly arrived at differential per unit rate at which Z_{FAC} is to be passed on to the consumers.
- 5.2 The following table shows the Z_{FAC} worked out by the Commission on account of difference in fuel and power purchase cost for the months of July, 2018 to September, 2018.

| S. No. | Particulars | Units | Jan, 2019 | Feb, 2019 | Mar, 2019 |
|--------|--|---------|-----------|-----------|-----------|
| 1 | Average power purchase cost approved by the Commission | Rs./kWh | 4.33 | 4.33 | 4.33 |
| 2 | Actual average power purchase cost | Rs./kWh | 4.60 | 4.55 | 4.23 |
| 3 | Change in average power purchase cost (=2 -1) | Rs./kWh | 0.27 | 0.22 | (0.09) |
| 4 | Net Power Purchase | MU | 285.78 | 297.86 | 360.73 |



| S. No. | Particulars | Units | Jan, 2019 | Feb, 2019 | Mar, 2019 |
|--------|--|-----------|-----------|-----------|-----------|
| 5 | Change in fuel and power purchase cost (=3 x 4/10) | Rs. Crore | 7.78 | 6.64 | (3.39) |

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

6.1 After adjustment for over-recovery/under recovery (B), the adjustment factor to be added / reduced is as below:

| S. No. | Particulars | Units | Jan, 2019 | Feb, 2019 | Mar, 2019 |
|------------|--|------------------|--------------|---------------|--------------|
| 1.1 | Incremental cost allowed to be recovered in Month n-4 | Rs. Crore | 29.87* | 4.19* | 35.49 |
| 1.2 | Incremental cost in Month n-4 actually recovered in month n-2 | Rs. Crore | 0.08 | 12.13 | 14.82 |
| 1.3 | Adjustment factor for over-recovery/under-recovery (1.2 - 1.1) | Rs. Crore | 29.78 | (7.94) | 20.67 |
| 1.4 | Amount to be recovered as per previous Post Facto approval | Rs. Crore | 5.71 | 2.85 | 2.85 |
| 2.0 | Carried forward adjustment attributable to application of ceiling limit for previous month | Rs. Crore | - | - | - |
| 3.0 | Net Adjustment factor for over-recovery/under-recovery (1.3+ 1.4) | Rs. Crore | 35.49 | (5.08) | 23.53 |

**Corrected as per previous approved vetting report*

6.2 TPC-D in its submission has considered the cost allowed to be recovered for the month of January and February 2019 as Rs. 00.0 Crore and Rs. 13.99 Crore respectively as per their FAC computation. However, the Commission has approved the same as Rs.29.87 Crore and Rs. 4.19 Crore. Considering the above, the Commission computed net adjustment factor.

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/ Holding cost for under/ over recovery for the months of Jan, 2019 to March, 2019.

| Month | Jan, 2019 | Feb, 2019 | Mar, 2019 |
|-------------------------------|-----------|-----------|-----------|
| Adjustment Factor (Rs. Crore) | 29.78 | (7.94) | 20.67 |
| Applicable Interest Rate | 10.05% | 10.05% | 10.05% |



| | | | |
|---|------|--------|------|
| Carrying/ Holding cost for under/ over recovery (Rs. Crore) | 0.25 | (0.07) | 0.17 |
|---|------|--------|------|

8. Disallowance due to excess Distribution Loss

8.1 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 | | |
|-------|---|------------------|--------------------------|--------------|---------|---------|
| | | | | Jan, 19 | Feb, 19 | Mar,19 |
| 1 | Energy Requirement for TPC-D Consumers at T<>D interface | MU | 2397.00 | 2336.96 | 2526.58 | 2764.19 |
| 2 | TPC-D Retail Sales (excluding sales at 110/132 kV level) | MU | 2372.55 | 2335.80 | 2520.98 | 2754.36 |
| 3 | Distribution Loss (1 - 2) | MU | 24.45 | 1.159 | 5.601 | 9.833 |
| 4 | Distribution Loss as % of net energy input (3/1) | % | 1.02% | 0.05% | 0.22% | 0.36% |
| 5 | Excess Distribution Loss = [Actual Distribution Loss (4) - Distribution loss approved] x Net Energy Input (1) | MU | - | - | - | - |
| 6 | Disallowance of FAC due to excess Distribution Loss | Rs. Crore | - | - | - | - |

8.2 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”

8.3 As the distribution loss all the month of is lower than the MTR approved figures, hence no FAC has been disallowed due to excess distribution loss.



9. Summary of Allowable Z_{FAC}

9.1 The summary of the FAC amount as approved by the Commission for the month of Jan, 2019 to March, 2019 which is allowed to be recovered in the billing month of March, 2019 to May, 2019 is as shown in the Table below.

| S. No. | Particulars | Units | Jan, 19 | Feb, 19 | Mar,19 |
|------------|---|------------------|--------------|-------------|--------------|
| 1.0 | Calculation of ZFAC | | | | |
| 1.1 | Change in cost of generation and power purchase attributable to Sales within the License Area (F) | Rs. Crore | 7.78 | 6.64 | -3.40 |
| 1.2 | Carrying cost for over-recovery/under-recovery (C) | Rs. Crore | 0.25 | -0.07 | 0.17 |
| 1.3 | Adjustment factor for over-recovery/under-recovery (B) | Rs. Crore | 35.49 | -5.08 | 24.00 |
| 1.4 | ZFAC = F+C+B | Rs. Crore | 43.52 | 1.49 | 20.77 |
| 2.0 | Calculation of FAC Charge | | | | |
| 2.1 | Energy Sales within the License Area | MU | 304.48 | 271.56 | 343.70 |
| 2.2 | Excess Distribution Loss | MU | 0.00 | 0.00 | 0.00 |
| 2.3 | Z _{FAC} per kWh | Rs./kWh | 1.43 | 0.05 | 0.60 |
| 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 | 1.17 | 0.05 | 0.60 |
| 3.0 | Recovery of FAC | | | | |
| 3.1 | Allowable FAC [(2.1 x 2.5)/10] | Rs. Crore | 35.49 | 1.49 | 20.77 |
| 3.2 | FAC disallowed corresponding to excess Distribution Loss [(2.2 x 2.5)/10] | Rs. Crore | - | - | - |
| 4.0 | Total FAC based on category wise and slab wise allowed to be recovered | Rs. Crore | 35.49 | 1.49 | 20.77 |
| 4.1 | Carried forward FAC for recovery during future period (3.1-3.2-4.0) | Rs. Crore | - | - | - |

9.2 It is to be noted that the above FAC has been adjusted in the final Truing-up of FY 2018-19. Hence, it does not hold any further financial impact on the next FAC cycle.

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 a variation of Z_{FAC} in absolute terms on considering category wise per unit FAC worked out and category wise actual sales for the months of January 2019 to March, 2019.

10.3 The variation in FAC in absolute terms is due to formula error of Z_{FAC} computed on per unit basis. The variation however is taken care in the adjustment factor of subsequent months.

10.4 The following table shows per unit Z_{FAC} to be charged to the consumers of TPC-D for the billing month of March, 2019 to May, 2019.

AC for Billing Month of March, 2019 to May, 2019



| S. No | Consumer Category | Slabs | ZFAC to be levied in billing month of | | |
|------------|---|-----------|---------------------------------------|-----------|-----------|
| | | | March'19 | April'19 | May'19 |
| | | | (Rs./kWh) | (Rs./kWh) | (Rs./kWh) |
| (A) | LT Category | | | | |
| 1 | LT 1 – BPL | 0 – 30 | 0.176 | 0.174 | (0.022) |
| 2 | LT 1 - Residential S1 | 0 – 100 | 0.117 | 0.111 | (0.012) |
| 3 | LT 1 - Residential S2 | 101 – 300 | 0.310 | 0.292 | (0.030) |
| 4 | LT 1 - Residential S3 | 301 – 500 | 0.527 | 0.528 | (0.055) |
| 5 | LT 1 - Residential S4 | > 501 | 0.728 | 0.731 | (0.076) |
| 6 | LT II Commercial (A) | 0 - 20 kW | 0.483 | 0.491 | (0.051) |
| 7 | LT II Commercial (B) | 20–50 kW | 0.506 | 0.490 | (0.051) |
| 8 | LT II Commercial (C) | > 50 kW | 0.603 | 0.571 | (0.059) |
| 9 | LT III (A) - LT Industries | 0 - 20 kW | 0.478 | 0.471 | (0.049) |
| 10 | LT III (B) - LT Industries | > 20 kW | 0.490 | 0.464 | (0.048) |
| 11 | LT IV - Public Water Works | all units | 0.440 | 0.428 | (0.045) |
| 12 | LT V - Advt & Hoardings | all units | 0.606 | 0.564 | (0.059) |
| 13 | LT VI - Street Lights | all units | 0.522 | 0.494 | (0.051) |
| 14 | LT VII (A) - Temporary Supply –Religious | all units | 0.360 | 0.353 | (0.037) |
| 15 | LT VII (B) - Temporary Supply –Others | all units | 0.577 | 0.542 | (0.056) |
| 16 | LT VIII - Crematorium and Burial Grounds | all units | 0.265 | 0.248 | (0.026) |
| 17 | LT IX (A) - Public Service – Govt. Hospitals & Educational Institutes | all units | 0.400 | 0.400 | (0.042) |
| 18 | LT IX (B) - Public Service – Others | all units | 0.524 | 0.490 | (0.051) |
| (B) | HT Category | | | | |
| 18 | HT - I Industry | all units | 0.559 | 0.530 | (0.055) |
| 19 | HT - II Commercial | all units | 0.590 | 0.557 | (0.058) |
| 21 | HT - III Group Housing Society (Residential) | all units | 0.528 | 0.503 | (0.052) |
| 22 | HT - IV Public Water Works | all units | 0.463 | 0.441 | (0.046) |
| 23 | HT-V Railways, Metro & Monorail | all units | 0.442 | 0.423 | (0.044) |
| 26 | HT-VI (A) Public Service – Govt. Hospitals & Educational Institutes | all units | 0.519 | 0.498 | (0.052) |
| 27 | HT-VI (B) Public Service- Others | all units | 0.564 | 0.536 | (0.056) |
| 28 | HT-VII Temporary Supply | all units | 0.562 | 0.527 | (0.055) |
| 29 | HT VIII - EV Charging Stations | all units | | 0.335 | (0.035) |

