



महाराष्ट्र विद्युत नियामक आयोग

Maharashtra Electricity Regulatory Commission

Ref. No. MERC/FAC/MSEDCL/...7.90

Date: 23 September, 2019

To,
The Managing Director,
Maharashtra State Electricity Distribution Company Ltd.,
5th Floor, Prakashgad, Plot No. G-9
Bandra (East), Mumbai 400 051

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

Reference: MSEDCL's FAC submission vide Letter No.2956, 2957 & 2958 dated 29 January, 2019 for post-facto approval of FAC for the period of July, 2018 to September, 2018.

Sir,

Upon vetting the FAC calculations for the month of July, 2018 to September, 2018 as mentioned in the above reference, the Commission has accorded post facto approval to MSEDCL for levying FAC to its consumers as shown in the table below:

ZFAC	July, 2018	Aug, 2018	Sept, 2018
FAC allowed (Rs. Crore) (Ag)	115.37	106.71	30.09
FAC allowed (Rs. Crore) (Non Ag)	307.24	331.33	154.27
FAC allowed (Rs. Crore)	422.61	438.04	184.36

MSEDCL is allowed to recover Rs.64.61 Crore along with interest in the next FAC billing cycle. This is on account of revision of MoD stack, correction in adjustment factor, FAC levy methodology adopted and its associated impact for July, 2018 to September, 2018 as explained 4.3, 4.4, 4.11, 4.12, 4.13, 4.15, 4.17, 126.1126.21210.6 of the Vetting Report.

The above approval of FAC is subject to the final True up of FY 2018-19 under the MERC (Multi Year Tariff) Regulations, 2015.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Executive Director, MERC

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Encl: Annexure A: Detailed Vetting Report for the period of July, 2018 to September, 2018.

Sl. No.	Name of the Candidate	Year 2018	Year 2017	Year 2016
1	Dr. [Name]	100%	100%	100%
2	Dr. [Name]	100%	100%	100%
3	Dr. [Name]	100%	100%	100%
4	Dr. [Name]	100%	100%	100%

The following table shows the performance of the candidates who appeared for the examination in the month of July, 2018 to September, 2018. The candidates who have secured 100% marks in all the papers are listed below.

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 Controller of Examinations
 Maharashtra Veterinary Regulatory Commission

**POST FACTO APPROVAL FOR FAC FOR THE MONTH OF
JULY 2018 TO SEPTEMBER 2018**

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

Reference: MSEDCL's FAC submission vide Letter No.2956, 2957 & 2958 dated 29 January, 2019 for post-facto approval of FAC for the period of July, 2018 to September, 2018.

1. FAC submission by MSEDCL:

1.1 MSEDCL has made FAC submissions for the month of July, 2018 to September, 2018 as referred above. Upon vetting the FAC calculations, taking cognizance of all the submissions furnished by MSEDCL, the Commission has accorded post facto approval for the FAC amount to be charged in the billing month of October, 2018 to December, 2018.

2. Background

2.1 On 3rd November, 2016, the Commission has issued Tariff Order for MSEDCL, (Case No.48 of 2016) for approval of True-up of FY 2014-15, provisional True-up for FY 2015-16 and Aggregate Revenue Requirement (ARR) and Tariff for FY 2016-17 and FY 2019-20. Revised Tariff has been made applicable from 1st November 2016.

2.2 On 12 September, 2018, the Commission has issued Tariff Order for MSEDCL (Case No.195 of 2017) for Mid-Term Review, including True-up of FY 2015-16 and FY 2016-17, provisional True-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 1 March, 2017, the Commission accorded prior approval of the FAC for the month of November, 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,



vide its letter dated 29 January, 2019. MSEDCL has filed FAC submissions for the month of July, 2018 to September, 2018 for post facto approval. The Commission has scrutinized the submissions provided by MSEDCL 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 MSEDCL in the FAC submission and as approved by the Commission are as shown in the table below.

Consumer Category	Approved by the Commission	Approved for the month	Actual sales (MU)		
			July-18	Aug-18	Sept-18
	(I)	(II=I/12)	(III)	(IV)	(V)
1. Metered Sales					
HT Category					
Industry General	28545.71	2378.81	2512.86	2562.27	2573.46
Industry Seasonal	101.93	8.49	2.04	1.97	1.81
Commercial	1840.33	153.36	152.30	148.79	144.67
Railway metro monorail	59.25	4.94	6.13	6.10	5.94
Public water works	1584.10	132.01	166.15	165.03	156.68
Agriculture pumpset	784.76	65.40	17.02	35.94	65.50
Agriculture other	239.25	19.94	20.30	20.64	21.08
Group Housing Society	217.33	18.11	18.67	18.98	18.85
Temp Supply other	4.32	0.36	0.21	0.18	0.21
Public Service Govt	225.19	18.77	21.09	21.92	20.96
Public Service other	767.41	63.95	64.48	65.94	63.49
MSPGCL Aux Consumption	218.25	18.19	13.92	16.79	13.51
Other Adjustment			486.66	482.24	427.41
Sub Total	34587.83	2882.32	3482.29	3574.56	3517.36
LT Category					
BPL	54.35	4.53	3.82	4.17	5.04
Residential	19509.88	1625.82	1822.17	1657.50	1710.02
Non residential	5578.37	464.86	490.45	461.92	477.37
Public water works	746.26	62.19	62.90	63.40	63.64
AG metered pumpset	19054.39	1587.87	1784.96	1784.96	1036.08
AG metered other	136.08	11.34	10.39	10.45	12.90
Industry	6849.84	570.82	711.45	730.59	731.36
Street light	1883.04	156.92	159.00	153.26	159.26
Temporary supply	16.13	1.34	1.53	1.55	1.73
Advertisement and hording	4.65	0.39	0.36	0.32	0.34
Crematorium and burial ground	1.97	0.16	0.17	0.16	0.19



Consumer Category	Approved by the Commission	Approved for the month	Actual sales (MU)		
			July-18	Aug-18	Sept-18
	(I)	(II=I/12)	(III)	(IV)	(V)
Public service	453.39	37.78	41.20	40.44	42.21
Prepaid	0.00	0.00	0.70	0.67	0.65
LT credit/Solar offset			0.91	3.23	4.55
Sub Total	54288.35	4524.03	5089.10	4909.41	4240.78
Energy Sales outside the License Area					
Traded units	0.00	0.00	0.00	0.00	0.00
Sub Total	0.00	0.00	0.00	0.00	0.00
Sub Total- Metered Sales	88876.18	7406.35	8571.38	8456.96	7758.13
2. Unmetered Sales					
Unmetered Hrs>1318	2193.48	182.79	919.23	919.23	871.05
Unmetered Hrs<1318	7968.59	664.05			
Sub Total- Unmetered Sales	10162.07	846.84	919.23	919.23	871.05
Grand Total (Metered+Unmetered)	99038.25	8253.19	9491.52	9379.43	8633.73

3.2 It was observed that the total sale for July, 2018 to September, 2018 is 9491.52 MUs, 9379.43 MUs and 8633.73 MUs respectively, which is higher than that of the MTR approved, i.e., 8253.19 MUs. The major variation was observed in HT Industrial General, Public water works, HT Agriculture and LT Residential as shown in Table above.

4. Cost of Power Purchase

4.1 MSEDCL mainly procures power from following sources;

- a) MSPGCL
- b) Central Generating Station
- c) JSW (Ratnagiri) Energy Ltd.
- d) Adani Power Limited
- e) Mundra UMPP
- f) RattanIndia Power Limited
- g) EMCO Power
- h) Bilateral Procurement (Power Exchange, Traders, etc.)
- i) Renewable Energy Sources
- j) Infirm Power (MSPGCL units under commissioning, other infirm sources)

4.2 MSEDCL also buys power from other sources such as Sardar Sarovar and Pench Hydro project, renewable sources including co-generation, Wind power and Solar. In addition to the above sources, in case of any shortfall from approved sources, when demand exceeds availability or for cost optimization, MSEDCL sources power from exchange/Traders or



other sources at the market price through competitive bidding in accordance with the Guidelines of MoP.

- 4.3 In its previous post facto FAC approval i.e., for Q1 of FY 2018-19, the Commission has acknowledged that there is a difference of around 5526 MUs and 5968 MUs between the yearly approved MUs and total monthly approved MoD stack in the Tariff Order for MSEDCL (Case No.195 of 2017) for FY 2018-19 and FY 2019-20 respectively. Accordingly, the Commission has revised the monthly MoD stack values for MSEDCL from FY 2018-19 to FY 2019-20. This revised MoD stack values are applicable in FAC computation for all the quarters of FY 2018-19 and FY 2019-20. Accordingly, in this present quarter of FY 2018-19, the corresponding revised monthly MoD stack has been considered as against the MTR approved MoD stack as considered by MSEDCL.
- 4.4 Further, the recovery of differential amount due to recalculation of FAC as claimed by MSEDCL in this FAC submission has not been considered, as the Commission has already settled the matter in its previous FAC approval.
- 4.5 The following table shows the variation in average power purchase cost (Rs/kWh) for the month of July, 2018 to September, 2018 as compared to average power purchase cost approved in Tariff Order dated 12 September, 2018:

Particulars	Approved for July, 2018 in T.O dated 12 th September, 2018			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
Thermal Power Plants	7,592.61	2,922.75	3.85	7978.59	3488.19	4.37
Must Run Sources	2,283.17	850.80	3.72	2256.62	1085.57	4.81
Total	9,875.79	3,773.55	3.82	10235.21	4573.76	4.47

Particulars	Approved for Aug, 2018 in T.O dated 12 th September, 2018			Actual for Aug, 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
Thermal Power Plants	7548.16	2911.89	3.86	8288.78	3211.07	3.89



Particulars	Approved for Aug, 2018 in T.O dated 12 th September, 2018			Actual for Aug, 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
Must Run Sources	2275.98	847.16	3.72	2074.93	945.79	4.56
Total	9824.14	3759.05	3.83	10423.21	4188.28	4.02

Particulars	Approved for Sept, 2018 in T.O dated 12 th September, 2018			Actual for Sept, 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
Thermal Power Plants	7768.30	2,978.93	3.83	9832.35	3974.17	4.04
Must Run Sources	2277.12	858.22	3.77	1535.93	564.82	3.68
Total	10,045.43	3,837.14	3.82	11427.78	4560.42	3.99

- 4.6 MSPGCL – The Commission has scrutinised the detailed bills submitted and observed that total energy purchased from MSPGCL’s Thermal and Gas Power Generating Stations during the month of July, August and September 2018 are 3077.50 MUs, 2970.45 MUs and 3199.55 MUs respectively against the revised month wise MoD stack of 3357.35 MUs, 3357.35 MUs and 3249.05 MUs respectively. The variable cost from these sources during the aforesaid period is Rs. 802.70 Crore, Rs. 777.30 Crore and Rs. 785.73 Crore respectively which has been worked out as per the energy charge approved by the Commission in its Tariff Order.
- 4.7 The average power purchasing cost from all MSPGCL’s Thermal and Gas Power Generating Stations during the months of July, August and September, 2018 is Rs. 4.22/kWh, 4.24/kWh and Rs. 4.22/kWh which is lower as compared to the monthly average power purchase cost considering revised MoD stack values as Rs.4.36/kWh, Rs.4.36/kWh and Rs.4.43/kWh respectively. The reduction in average power purchase cost is mainly on account of reduction/disallowance in fixed charge payable as the cumulative availability of most of the MSPGCL plants during the respective period were lower than the MYT approved Target availability. Therefore, the monthly fixed cost allowable to recover was reduced as per the plant’s availability and thus lowering the total power purchase cost. Further, the negative impact towards fuel surcharge adjustment bills



for the respective period has also led to reduction in the total power purchase cost and thus, lowering the APPC.

- 4.8 NTPC – The total units purchased from NTPC’s stations during the months of July, August and September, 2018 are 2227.82 MUs, 2326.75 MUs and 2511.54 MUs respectively against the revised monthly MoD stack units of 2094.75 MUs, 2094.75 MUs and 2110.53 MUs respectively. It can be seen that the quantum of energy purchase from these stations is more than the monthly approved MoD stack units. This is due to the purchase of power from NTPC’s new plants like Solapur-2 STPS, Mouda, Lara, Gadarwara and Khargone etc. whose COD were not declared at the time MTR Order, hence, the energy purchase from these plant were not included in the MTR Order. However, as MSEDCL has a firm share allocation for drawal of power as allocated by MoP, the Commission had approved the variable charge and fixed charges per unit from these plants as per the information received from NTPC.
- 4.9 The total power purchase cost including the fixed charges, RLDC charges, ED & Cess, incentives and other charges from NTPC’s stations during the months of July, August and September, 2018 are Rs. 734.24 Crore, Rs. 722.53 Crore and Rs. 831.15 Crore respectively. Accordingly, the average power purchase cost from NTPC Units during the aforesaid period is Rs. 3.06/kWh, Rs. 3.11/kWh and Rs. 3.31/kWh which is lower as compared torate derived considering revised MoD stack value as Rs. 3.17/kWh, Rs. 3.17/kWh and Rs. 3.19/kWh respectively. The reduction in the average power purchase cost is mainly due to reduction in variable cost on account of variable charge revision and sharing gain during the aforesaid period. Further, the reduction in monthly fixed cost payable has also led to the reduction in total power purchase cost thus lowering the APPC. The Commission has verified the respective amount and quantum purchased from the detailed summary of invoices submitted by MSEDCL and found to be in order.
- 4.10 IPPs - MSEDCL has purchased power from Mundra CGPL UMPP and IPPs, viz., JSW, EMCO Power, India Bulls Power (RattanIndia) and Adani Power. The total power purchased from these sources are 2673.25 MUs, 2991.58 MUs and 2934.41 MUs respectively against the revised monthly MoD stack of 2140.51 MUs, 2096.06 MUs and 2408.72 MUs respectively during the months of July, August and September, 2018. The average power purchase cost from these stations is 5.44/kWh, Rs. 4.14/kWh and Rs. 4.05/kWh respectively as compared to monthly approved rate considering revised MoD stack as Rs. 3.71/kWh, Rs. 3.74/kWh and Rs. 3.59/kWh respectively.
- 4.11 The average power purchase cost for IPPs, mainly for Adani power was too high as compared to the approved rate. On response to clarification sought, MSEDCL stated that variable cost/ APPC fromAdani Power is higher mainly due to the compensation claimed by Adani Power towards shortfall in the domestic coal supply by CIL pursuant to the NCDP. MSEDCL has considered approx. Rs. 509 Crore, Rs. 42 Crore and Rs, 100 Crore in the month of July, August and September respectively as the impact of change in law, which is in addition to the monthly power purchase bills raised by Adani Power. MSEDCL further stated that the aforesaid compensation claim is in line with the



Commission Order in Case No. 189 of 2013, Case No. 163 of 2014, Case No. 38 of 2016 and Case No. 124 of 2018.

- 4.12 Apart from above, the other Change in Law events related to imposition of compensation cess, GST, change in royalty and custom duty etc. have also been claimed by JSW, EMCO, Rattan India and CGPL during the aforesaid period. These Change in Law events have been approved by the respective Commission or CERC as the case may be under the provision of PPA. The Commission has verified the CIL claim from the bills submitted and found that the amount in the bills was not matching with the amount considered in FAC calculation. In fact, the amounts considered in FAC calculations were observed to be lesser than that of CIL bills/invoices. The Commission has sought for reconciliation along with the clarification against the same. MSEDCL has submitted the reconciliation table showing the amount considered in FAC calculation and the amount as raised in the CIL bills/invoices. MSEDCL further stated that the variation is mainly due the difference in SHR, GCV consideration and the taxes calculations. MSEDCL has calculated the CIL amount as per their own method and accordingly considered the CIL amount as computed as against that of raised in the CIL bills.
- 4.13 Further, variation in the power purchase rate is also due to change in variable rate as the rates are linked to various factors such as variation in monthly exchange rates, CERC index for inland handling of imported fuel and for inland transportation of fuel. Due to the above average power purchase cost has increased significantly during the quarter 3 months and thus increased the FAC. The Commission has verified the aforesaid purchase cost & quantum from the energy invoices and CIL invoices submitted by MSEDCL in response to the query raised against the same and found to be in order.
- 4.14 Traders – MSEDCL has purchased short term power from GMRETL, Dhariwal Infrastructure Limited, DP Power and JSW etc. MSEDCL has considered 59.50 MUs in the month of August and 1246.35 MUs in the month of September, 2018, whereas in the month of July the STTP quantum was considered as NIL. The Commission has verified the quantum of energy purchase and associated charges from the detailed bills summary submitted and observed that, MSEDCL has included the short term power pertaining to the month of July and August, in the September month's FAC calculation. Further, it was observed that short term purchase of around 59.50 MUs was observed to be taken twice, first in the month of August and again in the month of September.
- 4.15 On response to clarification sought, MSEDCL stated that it had inadvertently considered the short term power of around 59.50 MUs twice. MSEDCL further stated that it has adjusted this error in the FAC calculations of the month of December, 2018. However, the Commission has rectified this error in the present quarter by deducting the short term quantum of 59.90 MUs along with its associated cost from the total short term power in the month of September. MSEDCL further stated there was no short term power purchase of power except purchase through exchange in the month of July and August, 2018. It has purchased of approx. 14 MUs in July, 60 MUs in August and 920 MUs in the month of



September through exchange. However, all the aforesaid short term purchase through exchange has been booked by MSEDCL in the month of September, 2018

4.16 The average power purchase cost from short term sources in the month of August is Rs. 3.60/kWh for the quantum of 59.50 MUs. For the month of September after deducting the double purchase entry of 59.05 MUs the average power purchase cost has been arrived at Rs. 5.07/kWh for quantum of 1186.85 MUs. Further, the Commission in its MTR Order has not considered any quantum and amount with regards to short term power purchase as the entire demand would have been considered to be met through projected sources of power. Hence, the same is not considered in the energy balance for each year of the 3rd Control Period by the Commission. However, the Commission has allowed MSEDCL to procure short term power at the market price in case of any shortfall from approved sources or when demand exceeds availability. As the power from traders has been procured by MSEDCL through competitive bidding, the Commission has considered the respective actual quantum and the cost as submitted by MSEDCL after deducting 59.50 MUs and its associated cost as explained above.

4.17 Must Run – The sources of Must Run Stations include KAPP, TAPP 1&2, TAPP 3&4, SSP, Pench, Dodson I and Dodson II, Non-Conventional Energy, etc. During the scrutiny it was observed that for Dodson-I power purchase, MSEDCL has inadvertently considered a quantum of 0.80 MUs whereas as per bills the actual quantum was around 8.00 MUs. The Commission has rectified this error and accordingly considered the quantum amount as per bills submitted. Accordingly, MSEDCL has purchased 2256.76 MUs, 2074.93 MUs and 1535.93 MUs respectively during the months of July, August and September, 2018 as compared to the revised monthly MoD energy purchase of 2283.17 MUs, 2275.98 MUs and 2277.12 MUs respectively. The total cost of power purchase from Must Run sources are Rs. 1085.57 Crore, Rs. 945.79 Crore and Rs. 564.82 Crore during the month of July, August and September, 2018 respectively. The average power purchase cost from these stations during the aforesaid period is Rs. 4.81/kWh, 4.55 /kWh and Rs. 3.67/kWh as compared rate derived on the basis of revised MoD stack as Rs. 3.73/kWh, Rs. 3.72/kWh and Rs. 3.77/kWh respectively.

4.18 The average power purchase cost from must run sources is higher in the month of July and August and it is lower in the month of September as compared to corresponding monthly approved rate. The main reason for such a variation in power purchase cost is due to variation in power purchase quantum which can be attributed to Non-solar renewable source and MSPGCL hydro stations. During the month of July MSEDCL has purchased 1504.86 MUs as compared to revised approved 1088 MUs of non-solar power at a rate of Rs. 5.42/kWh which is almost 66.68% of the total must run power. Thus, because of larger share of costlier power i.e., non-solar renewable in the overall portfolio of must run, the APPC has driven towards the costlier sources. Further, with respect to MSPGCL hydro stations having an approved rate of Rs. 0.20/kWh, MSEDCL has purchased only 164.10 MUs as compared to revised approved 335 MUs which is only 7.2% of total must run power. Even though, the quantity of power purchase from hydro is lower, the monthly



fixed charges are full payable as the actual PAFM of all hydro stations were observed above target availability. This has also contributed to the increase in APPC, as the spread of lower purchase quantum on higher purchase cost has resulted into an increase in total purchase cost. Similarly, during the month of August MSEDCL has purchased almost 63.44% of total must run power from non-solar renewable sources at a rate of Rs. 5.34/kWh and 11.31% of total must run power from hydro stations. Accordingly, due to the same phenomenon as explained above, the APPC during the month of August is observed to be higher than that of approved.

- 4.19 During the month of September, MSEDCL has purchase 577.21 MUs as compared to revised approved 1107 MUs of power from non-solar sources. The actual purchase is almost 37.58% of total must run power from non-renewable sources i.e., at a rate of Rs. 5.38/kWh. Further, it has purchased around 468.89 MUs as compared to revised approved 324 MUs at a variable cost of Rs. 0.14/kWh. The power purchase from hydro stations is approx. 30.53% of total must run power. Thus, the higher purchase of cheaper hydro power and corresponding lower purchase of costlier non-solar power has resulted into decrease in APPC for the month of September.
- 4.20 Therefore, on an overall basis the APPC for the month of July, August and September, 2018 is higher mainly due to incorporation of change in law amount in the total power purchase cost in line with the Commission's Order and also due to the variation in power purchase quantum from must run sources as explained in para above. Accordingly, after complete scrutiny of relevant document submitted, the Commission allows the average power purchase cost of **Rs. 4.47/kWh** for the month of July, 2018, **Rs. 4.02/kWh** for the month of August, 2018 and **Rs. 3.99/kWh** for the month of September, 2018 as shown in the table above.

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

- 5.1 The Commission has worked out the average power purchase cost for the month as shown in above table. The same has been compared with the average power purchase cost derived considering the revised MoD stack values. It is to be noted that due to the revisions in monthly MoD stack values, the revised monthly APPC has reduced as compared to the rate as approved by the Commission in Tariff Order dated 14 September, 2018.
- 5.2 The revised monthly approved APPC for MSEDCL for the month of July, August and September, 2018 is Rs. 3.82/kWh, Rs. 3.83/kWh and Rs. 3.82/kWh respectively as against the MTR approved rate of Rs.3.90/kWh during the aforesaid period. As the revised APPC has reduced, the differential between the revised and actual has increased which has resulted into increase in ZFAC is to be passed on to the consumers.
- 5.3 The following table shows the ZFAC worked out by the Commission on account of difference in fuel and power purchase cost for the month of July to September, 2018.



S. No.	Particulars	Units	July, 2018	Aug, 2018	Sept, 2018
1	Average power purchase cost approved by the Commission	Rs./kWh	3.82	3.83	3.82
2	Actual average power purchase cost	Rs./kWh	4.47	4.02	3.99
3	Change in average power purchase cost (=2 -1)	Rs./kWh	0.65	0.19	0.17
4	Net Power Purchase	MU	10235.34	10423.21	11368.28
5	Change in fuel and power purchase cost (=3 x 4/10)	Rs. Crore	664.89	200.01	196.55

5.4 The Commission in its previous vetting report had adopted the methodology of bifurcating the over-recovery/under-recovery amounts into Agriculture (AG) and non-Agriculture (non-AG) categories for computation of adjustment factor. Based on the same methodology, the Commission has bifurcated the stand alonemonth power purchase cost variation as computed above into the Agriculture and non-Agriculture categories. The Commission has considered the ratio of actual AG and non-AG sale for the respective months for which FAC is computed to bifurcate the power purchase cost variation. The power purchase cost variation for AG and non-AG consumers is shown in the Table below.

Particulars	Units	July'18			Aug'18		
		Total	Ag	Non-Ag	Total	Ag	Non-Ag
Category wise sales during the month	Mus	9,369.58	2,704.19	6665.39	9252.95	2704.19	6548.75
Change in Fuel cost and power purchase cost attributable to Sales within the License Area (F)	Rs. Crore	664.89	191.90	472.99	200.01	58.45	141.56

Particulars	Units	Sept'18		
		Total	Ag	Non-Ag
Category wise sales during the month	Mus	8545.00	1907.13	6637.87
Change in Fuel cost and power purchase cost attributable to Sales within the License Area (F)	Rs. Crore	196.55	43.87	152.68

6 Adjustment for over recovery/under recovery (B)

6.1 MSEDCL has bifurcated the over-recovery/under-recovery amounts into Agriculture and non-Agriculture categories for computation of adjustment factor. The bifurcation has been done based on the FAC and actual sales of N-2 month. Further, MSEDCL has considered the FAC of N-2 month as per their computation. However, the Commission has



recomputed the incremental cost allowed to be recovered based on the approved FAC of previous quarter and bifurcated the same as per actual sales of N-2 month as shown in the Table below. The incremental cost actually recovered has been considered as submitted by MSEDCL and accordingly, the adjustment factors have been computed

6.2 Accordingly, the adjustment factor for over recovery/under recovery (B) for the period of July to September, 2018 is as below.

S. No.	Particulars	Units	July'18		Aug'18		Sept'18	
			Ag	Non-Ag	Ag	Non-Ag	Ag	Non-Ag
1.0	Sales in Month n-4	MUs	3090.29	7078.59	3090.29	7428.39	1932.00	7157.53
	Total Incremental cost allowed to be recovered in Month n-4*	Rs. Crore	(169.35)		288.91		313.37	
1.1	Incremental cost allowed to be recovered in Month n-4	Rs. Crore	(75.16)	(94.19)	47.51	241.40	66.61	246.76
1.2	Incremental cost in Month n-4 actually recovered in month n-2	Rs. Crore	0.14	68.91	0.03	54.66	21.91	206.27
1.3	Adjustment factor for (over-recovery)/under-recovery (=1.1 - 1.2)	Rs. Crore	(75.30)	(163.10)	47.48	186.74	44.69	40.49

*corrected as per previous approved vetting report.

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

8.1 Carrying/Holding cost for under/over recovery has been computed at applicable interest rate during the respective period for the eligible amount. The Commission has computed the carrying cost separately on the adjustment factor as computed above for both Agriculture and Non-Agriculture categories.

8.2 The following Table shows the month wise interest rate and amount worked out as Carrying/Holding cost for under/over recovery for the month of July, 2018 to September, 2018.

S. No.	Particulars	Units	July'18		Aug'18		Sept'18	
			Ag Category	Non-Ag Category	Ag Category	Non-Ag Category	Ag Category	Non-Ag Category
1	Adjustment factor for over-recovery/under-recovery	Rs. Crore	(75.30)	(163.10)	47.48	186.74	44.69	40.49
2	Applicable	%	9.75	9.75	9.75	9.75	9.95	9.95



S. No.	Particulars	Units	July'18		Aug'18		Sept'18	
			Ag Category	Non-Ag Category	Ag Category	Non-Ag Category	Ag Category	Non-Ag Category
	Interest rate							
3	Carrying cost for over-recovery/under-recovery	Rs. Crore	(1.22)	(2.65)	0.77	3.03	0.74	0.67

8 Disallowance due to excess Distribution Loss

- 9.1 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”

- 9.2 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 Upto		
				Jul'18	Aug'18	Sep'18
1	LT Sales	MU	68,235	25394.93	30958.07	36601.11
2	HT Sales	MU	27,363	9490.13	11846.49	14186.77
3	HT and Renewable Open Access Credit	MU	713	358.54	484.23	574.50
4	Sales to Open Access Consumers (Conventional)	MU	4,547	1425.51	1784.49	2127.72
5	Total Sales to Consumers	MU	100,858	36669.10	45073.28	53490.10
6	Distribution Loss	%	14.76%	11.09%	11.24%	12.59%
7	Distribution loss	MU	17,458	4576.01	5710.38	7702.37
8	Total Energy Available for Sale at 33 KV	MU	118,315	41245.12	50783.66	61192.47



S. No.	Particulars	Units	Approved in Tariff Order	Actual Upto		
				Jul'18	Aug'18	Sep'18
9	Energy injected and drawn at 33KV	MU	488	174.25	246.94	287.24
10	Net Energy Available for sale at 33 KV	MU	117,827	41,070.86	50,536.72	60,905.22
11	Sales at 66KV level	MU	144	44.32	59.26	70.73
12	Sales at 110 KV/132KV level	MU	4,801	1888.77	2361.08	2853.88
13	Sales at 220 KV/400 KV level	MU	3,171	1183.58	1408.81	1648.90
14	Net Energy requirement at T<math>\leftrightarrow</math>D Periphery	MU	125,943	44,187.53	54,365.88	65,478.72
15	Excess Distribution loss = [Actual Distribution loss - Distribution loss approved] x Net Energy Input	MU		(1511.77)	(1785.29)	(1329.64)
16	Disallowance of FAC due to excess Distribution Loss	Rs. Crore		NIL	NIL	NIL

9.3 As per month wise FAC submission, the cumulative distribution loss is 11.09% for the month of July, 2018, 11.24%% for the month of August, 2018 and 12.59% for the month of September, 2018 which is lower than the approved Distribution Loss of 14.76%. Hence, no disallowance on account of excess distribution loss for the months have been worked out.

9 Summary of Allowable ZFAC

10.1 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 July, 2018 to September, 2018 is as shown in the Table below.

S. No.	Particulars	Units	July'18		Aug'18		Sept'18	
			Ag	Non-Ag	Ag	Non-Ag	Ag	Non-Ag
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	191.90	472.99	58.45	141.56	43.87	152.68
1.2	Carrying cost for over-recovery/under-recovery (C)	Rs. Crore	(1.22)	(2.65)	0.77	3.03	0.74	0.67
1.3	Adjustment factor for over-recovery/under-recovery (B)	Rs. Crore	(75.30)	(163.10)	47.48	186.74	44.69	40.49
1.4	Recovery of differential amount						(59.21)	(39.57)



S. No	Particulars	Units	July'18		Aug'18		Sept'18	
			Ag	Non-Ag	Ag	Non-Ag	Ag	Non-Ag
	of adjustment factor pertaining to April, 2018							
	ZFAC = F+C+B	Rs. Crore	115.37	307.24	106.71	331.33	30.09	154.27
	ZFAC = F+C+B Aug'18 for AG Category	Rs. Crore					106.71	
	ZFAC = F+C+B July'18 for AG Category	Rs. Crore					115.37	
	Total ZFAC (Quarterly) for AG Category	Rs. Crore					252.17	
2.0	Calculation of FAC Charge							
2.1	Energy Sales within the License Area	MU	2,704.19	6,665.39	2,704.19	6,548.75	1,907.13	6,637.87
	Energy Sales within the License Area to AG consumers during last quarter	MU					7,315.52	
2.2	Excess Distribution Loss	MU	Nil	Nil	Nil	Nil	Nil	Nil
2.3	ZFAC per kWh	Rs./kWh	0.43	0.46	0.39	0.51	0.16	0.23
2.4	Cap at 20% of variable component of tariff	Rs./kWh	NA	NA	NA	NA	NA	NA
2.5	FAC Charge allowable (Minimum of 2.3 and 2.4)	Rs./kWh	0.43	0.46	0.39	0.51	0.16	0.23
3.0	Recovery of FAC							
3.1	Allowable FAC [(2.1 x 2.5)/10]	Rs. Crore	115.37	307.24	106.71	331.33	30.09	154.27
3.2	FAC disallowed corresponding to excess Distribution Loss [(2.2 x 2.5)/10]	Rs. Crore	Nil	Nil	Nil	Nil	Nil	Nil
4.0	Total FAC based on category wise and slab wise allowed to be recovered	Rs. Crore	115.37	307.24	106.71	331.33	30.09	154.27
5.0	Carried forward FAC for recovery during future period (1.4-3.2-4)	Rs. Crore	-	-	-	-	-	-



10.2 It can be seen from the above Table that standalone FAC for Non-Agriculture category during the months of July to September, 2018 is Rs. 307.24Crore, Rs331.33Crore and Rs. 154.27Crore respectively. As the billing of the Non-Agriculture category has been done on monthly basis, hence, based on total monthly energy sales, FAC per unit for Non-Agriculture category has been work out as Rs 0.46/kWh, Rs 0.51/kWh and Rs 0.23/kWh for the months of July, August and September, 2018 respectively. Further, the Commission has computed the categories wise total FAC that has been levied by MSEDCL on the basis of actual sales provided by MSEDCL. The following Table shows the difference in FAC as claimed by MSEDCL and as approved by the Commission for Non-Ag category:

Month	Units	MSEDCL's claim	Approved by the Commission
		Non-Ag	Non-Ag
July, 2018	Rs. Crore	422.65	307.24
August, 2108	Rs. Crore	122.17	331.33
September, 2018	Rs. Crore	135.99	154.27
Total	Rs. Crore	680.81	792.85

10.3 From the Table above MSEDCL has to recover Rs.792.85Crore cumulatively in the Q1 of FY 2018-19, however, it has recovered only Rs.680.81 Crore. Hence, MSEDCL is entitled to recover the differential amount Rs.112.04 Crore along with the interest in the next billing cycle.

10.4 The total FAC for Agriculture category during the months of July to September, 2018 is Rs. 115.37Crore, Rs. 106.71Crore and Rs. 30.09Crore respectively. Based on total monthly energy sales for Agriculture category including un-metered sales, FAC per unit for Agriculture category has been work out as Rs 0.43/kWh, Rs 0.39/kWh and Rs 0.16/kWh for the months of July, August and September, 2018 respectively. Further, the as the billing for Agriculture consumers are done on a quarterly basis and the corresponding FAC for all the three months are levied in a last month for each quarter. Therefore, the Commission has considered the cumulative FAC and the cumulative sales during the respective quarter and accordingly computed the FAC per unit for Agriculture category as Rs. 0.34/kWh for Q2 months. Further, in the present quarter it has been observed that MSEDCL has revised its billing methodology for Agriculture categories and levied the total FAC calculated during the months of July to September, 2018 in the month of September. The following the Table shows the FAC for Agriculture category during the months of July to September, 2018:

Month	Units	MSEDCL's claim	Approved by the Commission
		Ag	Ag
July, 2018	Rs. Crore	136.39	115.37
August, 2108	Rs. Crore	90.22	106.71
September, 2018	Rs. Crore	73.00	30.09
Total	Rs. Crore	299.60	252.17



10.5 From the Table above, MSEDCL has to recover total FAC of Rs. 252.17 Crore to Agriculture consumers, further, as the billing for Agriculture consumers done in the month of September, 2018, i.e., last month of quarter, it was observed that MSEDCL has actually recovered Rs. 299.60 Crore. Therefore, the Commission directs MSEDCL to refund the differential of Rs. (47.43) Crore (Rs.252.17 Cr- 299.60 Cr) in the next billing cycle along with applicable interest.

10.6 Considering the recovery of Rs. 112.04 Crore with regards to Non-Agriculture category and refund of Rs. (47.43) Crore with regards to Agriculture category, the net impact of FAC stands at Rs. 64.61 Crore for Q1 of FY 2018-19.

10.7 Further, the Regulation 10.9 of MYT Regulations, 2015 specifies as;

Provided that the monthly ZFAC shall not exceed 20% of the variable component of Tariff or such other ceiling as may be stipulated by the Commission from time to time:

10.8 As the FAC per unit computed is already lower than the 20% cap specified in Regulation as shown in Table above, hence, there is no restriction triggered with regards to such ceiling for all the months of Q1 of FY 2018-19.

10 Recovery from Consumers:

11.1 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 periods as may be directed by the Commission....”

11.2 The Commission has worked out FAC per unit for each category of consumer based on the formula provided in the above Regulations. The Commission observed that there is an under recovery of ZFAC in absolute terms on considering category wise per unit FAC worked out and category wise actual sales for the month of July 2018 to September, 2018.

11.3 The following table shows per unit ZFAC to be charged to the consumers of MSEDCL in the billing month i.e., October 2018 to December, 2018.



Table A- Fuel Adjustment Charges for the Month of July, 2018 to September, 2018 to be levied in October, 2018 to December, 2018 respectively

Sr. No.	Categories	ZFAC to be levied in billing month of Oct'2018 (Rs./kWh)	ZFAC to be levied in billing month of Nov'2018 (Rs./kWh)	ZFAC to be levied in billing month of Dec'2018 (Rs./kWh)
	LT Category			
1	Domestic (LT-I)			
A	BPL (0-30 Units)	0.1853	0.0630	0.1000
B	Consumption > 30 Units per month			
I	1-100 Units	0.4881	0.1661	0.2885
Ii	101-300 Units	0.8248	0.2807	0.4862
Iii	301-500 Units	1.0465	0.3561	0.6286
Iv	500-1000 Units	1.1641	0.3961	0.6552
V	Above 1000 Units	1.2345	0.4201	0.6992
2	Non Domestic (LT-2)			
A	0-20 KW			
A	0-200 Units	0.8230	0.2801	0.4922
B	Above 200 units	1.1035	0.3755	0.6660
B	>20-50 KW	1.2282	0.4180	0.7139
C	>50 KW	1.4954	0.5089	0.8654
3	Public Water Works (LT-III)			
A	0-20 KW	0.3367	0.1146	0.2026
B	20-40 KW	0.4596	0.1564	0.2782
C	above 40 kw	0.5896	0.2006	0.3553
4	Agriculture (LT-IV)			
A	Unmetered Tariff			
1	AG unmetered Pump set			
	Zone 1			
	A) 0-5 HP	11.8931	7.8666	27.8005
	B) HP -7.5 HP	12.5766	8.3187	29.5962
	C) Above 7.5 HP	13.7249	9.0782	31.2589
2	Zone 2			
	A) 0-5 HP	5.5616	3.6787	12.4394
	B) HP -7.5 HP	5.9324	3.9239	13.4541
	C) Above 7.5 HP	6.6122	4.3736	14.4312
B	Metered Tariff (Pumpsets)	0.0883	0.0676	0.3850
C	Metered Tariff (Other)	0.5086	0.1731	0.3037



Sr. No.	Categories	ZFAC to be levied in billing month of Oct'2018 (Rs./kWh)	ZFAC to be levied in billing month of Nov'2018 (Rs./kWh)	ZFAC to be levied in billing month of Dec'2018 (Rs./kWh)
5	LT Industries (LT-V)			
A	Power Loom			
I	0-20 KW	0.5478	0.1864	0.3314
li	Above 20 KW	0.6921	0.2355	0.4069
B	General			
I	0-20 KW	0.6057	0.2061	0.3618
li	Above 20 KW	0.8488	0.2888	0.4927
6	Street Light (LT-VI)			
A	Grampanchayat A, B & C Class Municipal Council	0.5558	0.1891	0.3287
B	Municipal corporation Area	0.6921	0.2355	0.4091
7	Temporary Connection (LT-VII)			
A	Temporary Connection (Religious)	0.4961	0.1688	0.3238
B	Temporary Connection (Other Purposes)	1.3743	0.4677	0.8122
8	Advertising and Hording (LT-VIII)	1.3431	0.4571	0.9676
9	Crematorium & Burial (LT-IX)	0.4489	0.1528	0.2673
10	Public Services (LT X)			
A	Government			
A	0-20 kw			
I	0-200 units	0.5700	0.1940	0.3439
li	> 200 units	0.6769	0.2303	0.4091
B	>20 -50 kw	0.7562	0.2573	0.4390
C	>50 kw	0.8212	0.2795	0.4900
B	Others			
A	0-20 KW			
I	0-200 Units	0.6021	0.2049	0.3618
li	Above 200 units	0.8292	0.2822	0.5058
B	>20-50 KW	0.8684	0.2955	0.5297
C	>50 KW	0.8933	0.3040	0.5449



Table B- Fuel Adjustment Charges for the Month of July, 2018 to September, 2018 to be levied in October, 2018 to December, 2018 respectively

Sr. No.	Categories	ZFAC to be levied in billing month of Oct'2018 (Rs./kWh)	ZFAC to be levied in billing month of Nov'2018 (Rs./kWh)	ZFAC to be levied in billing month of Dec'2018 (Rs./kWh)
	HT Category			
1	HT Category – EHV (66 kV & Above)			
A	HT I(A): HT - Industry (General)	0.7304	0.2485	0.4254
B	HT I(B): HT - Industry (Seasonal)	1.0065	0.3425	0.0000
C	HT II: HT – Commercial	1.1899	0.4049	0.6851
D	HT III: HT - Railways/Metro/Monorail	0.8141	0.2770	0.0000
E	HT IV: HT - Public Water Works (PWW)	0.6226	0.2119	0.3558
F	HT V(A): HT - Agricultural –Pumpsets	0.3892	0.1325	0.2151
G	HT V(B): Agricultural – Others	0.0000	0.0000	0.0000
H	HT VI: HT - Group Housing Society (Residential)	0.0000	0.0000	0.0000
I	HT VIII (A): HT - Temporary Supply Religious (TSR)	0.0000	0.0000	0.0000
J	HT VIII(B): HT - Temporary Supply Others (TSO)	0.0000	0.0000	0.0000
K	HT IX(A): HT - Public Services-Government	0.0000	0.0000	0.0000
L	HT IX(B): HT - Public Services-Others	0.9406	0.3201	0.5498
2	HT Category –33 kV			
A	HT I(A): HT - Industry (General)	0.7384	0.2513	0.4216
B	HT I(B): HT - Industry (Seasonal)	1.0145	0.3452	0.4558
C	HT II: HT – Commercial	1.1463	0.3901	0.6861
D	HT III: HT - Railways/Metro/Monorail	0.7704	0.2622	0.4477
E	HT IV: HT - Public Water Works (PWW)	0.5780	0.1967	0.3721
F	HT V(A): HT - Agricultural –Pumpsets	0.3447	0.1173	0.2184
G	HT V(B): Agricultural – Others	0.4854	0.1652	0.2896
H	HT VI: HT - Group Housing Society (Residential)	0.6306	0.2146	0.3727
I	HT VIII (A): HT - Temporary Supply Religious (TSR)	0.0000	0.0000	0.0000
J	HT VIII(B): HT - Temporary Supply Others (TSO)	1.1463	0.3901	0.7095
K	HT IX(A): HT - Public Services-Government	0.7232	0.2461	0.4792
L	HT IX(B): HT - Public Services-Others	0.8969	0.3052	0.5851
3	HT Category –22 kV			



Sr. No.	Categories	ZFAC to be levied in billing month of Oct'2018 (Rs./kWh)	ZFAC to be levied in billing month of Nov'2018 (Rs./kWh)	ZFAC to be levied in billing month of Dec'2018 (Rs./kWh)
A	HT I(A): HT - Industry (General)	0.8034	0.2734	0.4406
B	HT I(B): HT - Industry (Seasonal)	1.0795	0.3673	0.4563
C	HT II: HT - Commercial	1.2113	0.4122	0.6932
D	HT III: HT - Railways/Metro/Monorail	0.8355	0.2843	0.4438
E	HT IV: HT - Public Water Works (PWW)	0.6431	0.2188	0.3960
F	HT V(A): HT - Agricultural - Pumpsets	0.4097	0.1394	0.2282
G	HT V(B): Agricultural - Others	0.4854	0.1652	0.3042
H	HT VI: HT - Group Housing Society (Residential)	0.6956	0.2367	0.3689
I	HT VIII (A): HT - Temporary Supply Religious (TSR)	0.0000	0.0000	0.0000
J	HT VIII(B): HT - Temporary Supply Others (TSO)	1.2113	0.4122	0.7052
K	HT IX(A): HT - Public Services-Government	0.7882	0.2682	0.4764
L	HT IX(B): HT - Public Services-Others	0.9619	0.3273	0.5829
	HT Category - 11 kV			
	HT I(A): HT - Industry (General)	0.0000	0.0000	0.5172
	HT I(B): HT - Industry (Seasonal)	0.0000	0.0000	0.5769
	HT II: HT - Commercial	0.0000	0.0000	0.8366
	HT III: HT - Railways/Metro/Monorail	0.0000	0.0000	0.5351
	HT IV: HT - Public Water Works (PWW)	0.0000	0.0000	0.4210
	HT V(A): HT - Agricultural - Pumpsets	0.0000	0.0000	0.2716
	HT V(B): Agricultural - Others	0.0000	0.0000	0.3314
	HT VI: HT - Group Housing Society (Residential)	0.0000	0.0000	0.4493
	HT VIII (A): HT - Temporary Supply Religious (TSR)	0.0000	0.0000	0.0000
	HT VIII(B): HT - Temporary Supply Others (TSO)	0.0000	0.0000	0.9056
	HT IX(A): HT - Public Services-Government	0.0000	0.0000	0.5444
	HT IX(B): HT - Public Services-Others	0.0000	0.0000	0.6883



