



महाराष्ट्र विद्युत नियामक आयोग  
Maharashtra Electricity Regulatory Commission

Ref. No. MERC/FAC/MSEDCL/WFH/SBR/23

Date: 26 July, 2020

To,

**The Managing Director,**

Maharashtra State Electricity Distribution Company Ltd.,

5<sup>th</sup> 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, 2019 to September, 2019.

**Reference:** MSEDCL's FAC submission vide Letter dated 3 February, 2020 for post-facto approval of FAC for the period of July, 2019 to September, 2019.

Sir,

Upon vetting the FAC calculations for the month of July, 2019 to September, 2019, 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, 2019	August, 2019	September, 2019
FAC allowed (Rs. Crore)	319.70	259.43	339.32

MSEDCL has computed total FAC of Rs. 1100.61 Crores against which the Commission has approved Rs. 918.45 Crores, thus Rs. 182.16 Crore is disallowed which is explained in detail at Paras 9.2 to 9.8 of the enclosed Report. Since the recovery of this amount is already done, the above adjustment will be rolled over in next FAC approvals (i.e., FAC of Q 3 of FY 2019-20) till Q4 of FY 2019-20.

As FY 2019-20 is already over and provisional True-up of FY 2019-20 has also been done in recent MYT Order dated 30 March, 2020, the rationale for post facto approval of Q2 of FY 2019-20 is only to carry forward the allowance or disallowance to next quarter and subsequently to Q4 of FY 2019-20.

Yours faithfully,

(Dr. Rajendra Ambekar)  
Executive Director

**Encl:** Annexure A: Detailed Vetting Report for the period of July, 2019 to September, 2019.

**ANNEXURE**  
**Detailed Vetting Report**

**Date: 26 July, 2020**

**POST FACTO APPROVAL FOR FAC FOR THE MONTH OF  
JULY, 2019 TO SEPTEMBER, 2019**

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

**Reference:** MSEDCL's FAC submission vide letter dated 3 February, 2020 for post facto approval of FAC for the period of July, 2019 to September, 2019.

**1. FAC submission by MSEDCL:**

1.1 MSEDCL has made FAC submissions for the month of July, 2019 to September, 2019, 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, 2019 to December, 2019.

**2. Background**

2.1 On 12 September, 2018, the Commission has issued Tariff Order for MSEDCL (Case No.195 of 2017) for Mid-Term Review, including Truing-up of FY 2015-16 and FY 2016-17, provisional Truing-up for FY 2017-18, and revised Aggregate Revenue Requirement and Tariff for FY 2018-19 to FY 2019-20. Revised Tariff has been made applicable from 1 September, 2018.

2.2 In accordance with 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 3 February, 2020. MSEDCL has filed FAC submissions for the month of July, 2019 to September, 2019 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-2019	August-2019	September-2019

	(I)	(II=I/12)	(III)	(IV)	(V)
<b>I. Metered Category</b>					
<b>HT Category</b>					
Industry General	29,105.86	2,425.49	2,584.13	2,424.37	2,381.39
Industry Seasonal	101.98	8.50	1.83	1.48	1.28
Commercial	1,840.33	153.36	154.57	147.72	143.15
Railway metro monorail	59.25	4.94	6.42	6.32	6.36
Public water works	1,647.46	137.29	161.05	154.40	153.35
Agriculture pumpset	804.12	67.01	16.20	31.39	51.33
Agriculture other	277.03	23.09	19.61	18.43	18.28
Group Housing Society	217.33	18.11	20.35	18.74	17.97
Temp Supply other	4.32	0.36	0.51	0.60	0.80
Public Service Govt	247.72	20.64	21.78	21.24	21.23
Public Service other	769.01	64.08	66.55	64.64	62.95
Electric Vehicle (EV) Charging Stations	0.00	0.00	0.20	0.38	0.62
MSPGCL Aux Consumption	218.25	18.19	14.26	12.65	11.37
Other Adjustment	0.00	0.00	321.61	361.00	332.13
<b>Sub Total</b>	<b>35292.66</b>	<b>2941.06</b>	<b>3,389.07</b>	<b>3,263.34</b>	<b>3,202.19</b>
<b>LT Category</b>					
BPL	54.35	4.53	7.78	8.01	8.60
Residential	20,282.28	1,690.19	1,967.65	1,790.29	1,748.40
Non-residential	6,122.75	510.23	539.45	496.37	486.68
Public water works	780.31	65.03	63.16	62.42	65.33
AG metered pump set	21,090.67	1,757.56	1,376.04	1,376.04	1,245.93
AG metered other	149.67	12.47	11.36	10.66	13.43
Industry	7,232.08	602.67	757.91	727.25	723.13
Street-light	2,013.76	167.81	157.36	154.21	157.61
Temporary supply	16.13	1.34	2.59	2.52	2.81
Advertisement and hording	5.15	0.43	0.31	0.35	0.36
Crematorium and burial ground	2.18	0.18	0.19	0.20	0.19
Public service	498.95	41.58	46.50	44.93	44.02
Electric Vehicle (EV) Charging Stations	0.00	0.00	0.02	0.02	0.01
Prepaid	0.00	0.00	0.63	0.58	0.54
<b>Sub Total</b>	<b>58,248.28</b>	<b>4,854.02</b>	<b>4,930.94</b>	<b>4,673.82</b>	<b>4,497.04</b>
Energy Sales outside the License Area	0.00	0.00			
<b>Sub Total- Metered Sales</b>	<b>93,540.94</b>	<b>7,795.08</b>	<b>8,320.01</b>	<b>7,937.16</b>	<b>7,699.23</b>
<b>Unmetered Sale</b>					
Unmetered Hrs>1318	3,966.00	330.50	623.96	623.96	840.07

Consumer Category	Approved by the Commission	Approved for the month	Actual sales (MU)		
			July-2019	August-2019	September-2019
	(I)	(II=I/12)	(III)	(IV)	(V)
Unmetered Hrs<1318	2,487.00	207.25			
<b>Sub Total - Unmetered</b>	<b>6,453.00</b>	<b>537.75</b>	<b>623.96</b>	<b>623.96</b>	<b>840.07</b>
<b>Grand Total (Metered+Unmetered)</b>	<b>99,993.94</b>	<b>8,332.83</b>	<b>8,943.97</b>	<b>8,561.13</b>	<b>8,539.30</b>

3.2 Monthly actual sale for July, August, and September, 2019 was higher than that of the MTR approved sales, i.e., 8,332.83 MUs. This variation in actual sales was observed majorly in HT Industry General, Public water works, HT & LT Agriculture, LT Residential and LT Industrial as shown in Table above. On response to clarification sought for such a variation in sales, MSEDCL stated that the approved sales in MTR Order were estimated based historical data. Whereas the actual sales depend on various aspects such as economic conditions, rain fall, etc. Hence, it is difficult to provide exact reasons for variation in sales.

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

4.1 MSEDCL mainly procures power from following sources;

- a) MSPGCL
- b) NTPC
- c) JSW (Ratnagiri) Energy Ltd.
- d) Adani Power Limited
- e) Mundra UMPP
- f) Rattan India Power Limited
- g) EMCO Power
- h) Short Term Power Purchase (Power Exchange, Bilateral purchase -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 process in accordance with the Guidelines of MoP.

4.3 For present quarter MSEDCL was asked to provide the details of action taken for optimization of its power purchase cost. In its reply MSEDCL stated that it follows MoD principles and power scheduling is done in real time as per MoD given by SLDC. The demand of MSEDCL is generally catered by scheduling the power from its long term contracted generating sources. The power from long term thermal generators, i.e.,

stations under MoD, is scheduled as per the MoD stack according to the requirement. The high cost generating units as per MoD, are off taken fully to cater the peak demand, generally during day time and for the rest of the period the unit is backed down. In order to utilize the least cost generation fully, MSEDCL has exercised the option of giving zero schedule to high cost generating units by optimally scheduling the Koyna Hydro generation during peak period and purchase of power from power exchanges during peak demand period.

- 4.4 Thus, by implementing above strategies MSEDCL has optimized the generation cost by giving higher schedule to least cost generator and zero schedule to high cost generator instead of running multiple units on technical minimum. MSEDCL also submitted the details of units that were under zero schedule/RSD during July,2019 to August,2019
- 4.5 The Commission in line with its previous post facto FAC approval has considered the revised monthly MoD stack values for this present FAC approval.
- 4.6 The following table shows the variation in average power purchase cost (Rs/kWh) for the month of July, 2019 to September, 2019 as compared to average power purchase cost approved as per Tariff Order dated 12 September, 2018:

Source	MTR Approved for July, 2019			Actual for July, 2019			Variation		
	Quantum (MUs)	PP Cost (Rs. Cr)	Rate (Rs. / kWh)	Quantum (MUs)	PP Cost (Rs. Cr)	Rate (Rs. / kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs. / kWh)
MSPCGL Thermal	3,357.35	1,466.79	4.37	3,486.35	1,646.10	4.72	129.00	179.31	0.35
MSPCGL Hydro	334.54	18.89	0.56	168.42	57.94	3.44	(166.12)	39.05	2.88
NTPC	2,271.03	748.76	3.30	2,132.50	818.90	3.84	(138.53)	70.13	0.54
IPPs:									
1. Mundra UMPP	465.45	115.85	2.49	254.57	75.21	2.95	(210.88)	(40.63)	0.47
2. Adani	1,305.27	482.33	3.70	1,778.42	647.28	3.64	473.16	164.95	(0.06)
3. EMCO	116.36	41.53	3.57	113.53	56.27	4.96	(2.84)	14.75	1.39
4. JSW	174.54	55.70	3.19	172.94	58.68	3.39	(1.60)	2.97	0.20
5. Rattan India	-	81.91	-	124.21	128.15	10.32	124.21	46.25	10.32
IPPs Total	2,061.62	777.31	3.77	2,443.67	965.59	3.95	382.05	188.29	0.18
Solar	355.21	147.65	4.16	178.12	97.17	5.46	(177.09)	(50.48)	1.30
Non- Solar	1,167.12	611.68	5.24	1,197.11	627.66	5.24	29.98	15.99	0.00
Other Must Run	588.78	149.70	2.54	517.49	142.19	2.75	(71.29)	(7.51)	0.21
STTP	-	-	-	7.76	2.61	3.36	7.76	2.61	3.36
<b>Total</b>	<b>10,135.66</b>	<b>3,920.78</b>	<b>3.87</b>	<b>10,131.41</b>	<b>4,358.16</b>	<b>4.30</b>	<b>(4.25)</b>	<b>437.38</b>	<b>0.43</b>

4.7 Thus, for the month of July 2019, total variation in power purchase cost is Rs. 437.38 Crore out of which Rs. (1.64) Crore was on account of marginal reduction in quantum of power purchase (4.25 MU) and Rs. 439.02 Crore was on account of increase in rate of power purchase by Rs. 0.43/kWh.

Source	MTR Approved for August, 2019			Actual for August, 2019			Deviation		
	Quantum (MUs)	PP Cost (Rs. Cr)	Rate (Rs./ kWh)	Quantum (MUs)	PP Cost (Rs. Cr)	Rate (Rs./ kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./ kWh)
MSPCGL Thermal	3,357.35	1,466.79	4.37	2,652.98	1,331.10	5.02	(704.37)	(135.69)	0.65
MSPCGL Hydro	334.54	18.89	0.56	281.03	59.41	2.11	(53.51)	40.52	1.55
NTPC	2,271.03	748.76	3.30	2,102.09	782.87	3.72	(168.94)	34.11	0.43
IPPs:									
1. Mundra UMPP	465.45	115.85	2.49	341.49	99.40	2.91	(123.96)	(16.45)	0.42
2. Adani	1,259.18	471.07	3.74	1,724.52	732.14	4.25	465.33	261.08	0.50
3. EMCO	116.36	41.53	3.57	101.46	46.37	4.57	(14.90)	4.85	1.00
4. JSW	174.54	55.70	3.19	178.00	58.92	3.31	3.46	3.22	0.12
5. Rattan India	-	81.91	-	315.30	188.74	5.99	315.30	106.83	5.99
IPPs Total	2,015.54	766.05	3.80	2,660.77	1,125.57	4.23	645.23	359.52	0.43
Solar	353.28	146.85	4.16	148.52	78.97	5.32	(204.76)	(67.88)	1.16
Non- Solar	1,160.79	608.36	5.24	1,335.84	659.29	4.94	175.05	50.93	(0.31)
Other Must Run	588.78	149.70	2.54	713.14	181.50	2.55	124.36	31.81	0.00
STTP	-	-	-	90.29	32.55	3.60	90.29	32.55	3.60
<b>Total</b>	<b>10,081.32</b>	<b>3,905.41</b>	<b>3.87</b>	<b>9,984.67</b>	<b>4,251.27</b>	<b>4.26</b>	<b>(96.65)</b>	<b>345.87</b>	<b>0.38</b>

4.8 Similarly, for the month of August, 2019 total variation in power purchase cost is Rs. 345.87 Crore, out of which Rs. (37.40) Crore was on account of reduction in power purchase quantum of (96.65) MU and rest Rs. 383.27 Crore was on account of increase in rate of power purchase by Rs. 0.38/kWh.

Source	MTR Approved for September, 2019			Actual for September, 2019			Deviation		
	Quantum (MUs)	PP Cost (Rs. Cr)	Rate (Rs./ kWh)	Quantum (MUs)	PP Cost (Rs. Cr)	Rate (Rs./ kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./ kWh)
MSPCGL Thermal	3,362.84	1,471.10	4.37	2,243.11	1,131.47	5.04	(1,119.73)	(339.6)	0.67
MSPCGL Hydro	323.75	18.89	0.58	469.09	62.01	1.32	145.34	43.12	0.74

Source	MTR Approved for September, 2019			Actual for September, 2019			Deviation		
	Quantum (MUs)	PP Cost (Rs. Cr)	Rate (Rs./ kWh)	Quantum (MUs)	PP Cost (Rs. Cr)	Rate (Rs./ kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./ kWh)
NTPC	2,281.13	758.54	3.33	2,287.97	904.76	3.95	6.84	146.22	0.63
IPPs:									
1. Mundra UMPP	450.43	113.41	2.52	447.53	129.71	2.90	(2.90)	16.31	0.38
2. Adani	1,489.24	528.60	3.55	1,336.30	542.91	4.06	(152.94)	14.30	0.51
3. EMCO	112.61	40.84	3.63	67.93	34.41	5.07	(44.68)	(6.43)	1.44
4. JSW	168.91	54.39	3.22	161.00	54.88	3.41	(7.92)	0.48	0.19
5. Rattan India	-	81.91	-	564.84	268.43	4.75	564.84	186.53	4.75
IPPs Total	2,221.19	819.15	3.69	2,577.60	1,030.35	4.00	356.41	211.19	0.31
Solar	361.33	150.19	4.16	174.75	84.68	4.85	(186.58)	(65.51)	0.69
Non- Solar	1,187.23	622.21	5.24	866.04	437.24	5.05	(321.19)	(184.9)	(0.19)
Other Must Run	569.79	144.89	2.54	758.83	187.84	2.48	189.04	42.94	(0.07)
STTP	-	-	-	138.61	44.28	3.19	138.61	44.28	3.19
<b>Total</b>	<b>10,307.26</b>	<b>3,984.98</b>	<b>3.87</b>	<b>9,516.00</b>	<b>3,882.62</b>	<b>4.08</b>	<b>(791.26)</b>	<b>(102.36)</b>	<b>0.21</b>

4.9 On the same line of July and August, 2019, for the month of September 2019, total variation in power purchase cost is Rs. (102.36) Crore, out of which only Rs. (306.22) Crore was on account of reduction in quantum of power purchase (791.26 MU) and Rs. 203.86 Crore was on account of increase in rate of power purchase by Rs. 0.21/kWh.

4.10 The Paras below provides the detailed analysis of sources wise power purchase variation during Q3 of FY 2019-20.

#### MSPGCL:

4.11 The Table below shows the breakup of actual power purchase quantum and cost from MSPGCL's stations vis-à-vis monthly approved power purchase quantum and cost as per approved MoD stack for Q2 of FY 2019-20:

Particular	Approved for July, 2019				Actual for July, 2019			
	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./ kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./ kWh)
Stations included in MoD Stack in MTR Order	3,357.35	2.20	1,177.36	3.51	2,025.58	2.16	906.00	4.47
Stations excluded from MoD Stack in	-	-	289.43 <sup>^</sup>	-	1,460.77	2.85	740.10	5.07

Particular	Approved for July, 2019				Actual for July, 2019			
	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)
MTR Order								
<b>Total MSPGCL</b>	<b>3,357.35</b>	<b>2.20</b>	<b>1,466.79</b>	<b>4.37</b>	<b>3,486.35</b>	<b>2.45</b>	<b>1,646.10</b>	<b>4.72</b>

\*PP Cost= (Variable Cost + Fixed Cost + Other Charges)

^Fixed cost payable as per the terms and conditions of the PPAs irrespective of utilisation of generation capacity

Particular	Approved for August, 2019				Actual for August, 2019			
	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)
Stations included in MoD Stack in MTR Order	3,357.35	2.20	1,177.36	3.51	1,558.93	2.16	704.61	4.52
Stations excluded from MoD Stack in MTR Order	-	-	289.43 <sup>^</sup>	-	1,094.05	2.84	626.49	5.73
<b>Total MSPGCL</b>	<b>3,357.35</b>	<b>2.20</b>	<b>1,466.79</b>	<b>4.37</b>	<b>2,652.98</b>	<b>2.44</b>	<b>1,331.10</b>	<b>5.02</b>

\*PP Cost= (Variable Cost + Fixed Cost + Other Charges)

^Fixed cost payable as per the terms and conditions of the PPAs irrespective of utilisation of generation capacity

Particular	Approved for September, 2019				Actual for September, 2019			
	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)
Stations included in MoD Stack in MTR Order	3,362.84	2.21	1,195.59	3.56	1,346.77	2.17	631.56	4.69
Stations excluded from MoD Stack in MTR Order	-	-	275.51 <sup>^</sup>	-	896.35	2.94	499.91	5.58
<b>Total MSPGCL</b>	<b>3,362.84</b>	<b>2.21</b>	<b>1,471.10</b>	<b>4.37</b>	<b>2,243.11</b>	<b>2.48</b>	<b>1,131.47</b>	<b>5.04</b>

\*PP Cost= (Variable Cost + Fixed Cost + Other Charges)

^Fixed cost payable as per the terms and conditions of the PPAs irrespective of utilisation of generation capacity

4.12 During the Q2 of FY 2019-20, it was observed that MSEDCL has purchased 3,486.35 MUs, 2,652.98 MUs and 2,243.11 MUs of power from MSPGCL's thermal and gas power generating station during the month of July, August and September, 2019 as against the monthly MTR approved MoD stack of 3,357.35 MUs, 3,357.35MUs, and



3,362.84MUs, respectively. The actual purchase from MSPGCL's stations were observed higher in the month of July, whereas it was observed substantially lower in the month of August and September as compared to the approved monthly MoD stack values, for the respective months. MSEDCL stated that such a variation in power purchase quantum is mainly due to variation in demand during respective period.

4.13 Also, it can be seen from the Table above that in the months of July, August, and September, 2019, MSEDCL has procured 1,460.77 MU, 1,094.05 MU and 896.35 MU of power, respectively, from various stations that were not included in monthly MoD stack approved for MSEDCL in MTR Order. The reason for such a purchase is mainly on account of lesser generation (due to coal shortages, flooding in mines and prolonged monsoon with heavy rainfall, lower gas availability, etc.) from those stations that were included in MoD stack and also due to lesser availability of the RE Sources during the respective period of Q2 of FY 2019-20 as against the MTR approved quantum. This has led MSEDCL to procure the costlier power from aforesaid MSPGCL's stations as per the Merit Order Despatch determined by MSLDC. Therefore, there is an increase in actual Power Purchase cost as compared to MTR approved cost for Q2 of FY 2019-20.

4.14 Apart from above, the payment of monthly fixed cost during aforesaid period which is based on cumulative availability during the respective period as per Regulation 48.3 of MERC MYT Regulations, 2015 also had an impact on average power purchase cost. During Q2 of FY 2019-20, it was observed that even though some of the generating station of MSPGCL had lower generation or PLF mainly due to fuel shortage, the cumulative availability of these plants were above normative level during respective period. Hence, they were entitled for recovery of full monthly fixed cost as per MERC MYT Regulation, 2015. The Table below shows the normative availability and cumulative availability for Q2 of FY 2019-20 of various generating station of MSPGCL:

Sr No	Stations	Normative Availability	Actual Cumulative Availability at the end of Q2	Fixed Charge Recovery
1	Bhusaval U3	80.00%	93.60%	Full monthly fixed charge allowable
2	Bhusaval U4 & U5	85.00%	80.51%	Fixed charge at pro rata basis
3	Kaperkheda U1 to U4	85.00%	56.64%	Fixed charge at pro rata basis
4	Kaperkheda U5	85.00%	72.54%	Fixed charge at pro rata basis
5	Nashik U3 to U5	80.00%	80.16%	Full monthly fixed charge allowable
6	Chandrapur U3 to U7	80.00%	61.35%	Fixed charge at pro rata basis
7	Chandrapur U8 to U9	85.00%	74.83%	Fixed charge at pro rata basis
8	Paras U3 & U4	85.00%	79.99%	Fixed charge at pro rata basis
9	Parli U6 & U7	85.00%	63.48%	Fixed charge at pro rata basis
10	Parli U8	85.00%	46.31%	Fixed charge at pro rata basis
11	Koradi U6 & U7	72.00%	56.15%	Fixed charge at pro rata basis

Sr No	Stations	Normative Availability	Actual Cumulative Availability at the end of Q2	Fixed Charge Recovery
12	Koradi U8 to U10	<b>85.00%</b>	43.80%	Fixed charge at pro rata basis
13	Uran Gas TPS	<b>60.84%</b>	41.47%	Fixed charge at pro rata basis

4.15 The Commission has sought for monthly actual PLF of all contracted sources of MSEDCL along with reasoning for lower availability from Contracted Generators and efforts/communications made by MSEDCL seeking increased availability. The Commission also sought reasons for variation in actual quantum of power purchase against the MTR approved MoD stack for Q2 of FY 2019-20. MSEDCL in its reply stated that provisional truing up for the period of FY 2019-20 has been carried out vide the Commission's Order in Case No 322 of 2020. During the financial year the procurement decisions were taken based on the real time situation and the data available from the generators. MSEDCL has taken the procurement decisions based on available technical parameters to optimise the power purchase cost. However, extraction of detailed data mentioned in the query will take reasonable time. The Commission has noted the submission of MSEDCL; however, the Commission may seek for the aforesaid data at the time of final truing up of FY 2019-20. MSEDCL is required to submit the relevant data during final truing up of FY 2019-20.

4.16 Further, in addition to fixed charges and variable charges, MSPGCL has also claimed other charges which are primarily related to fuel adjustment charges during the respective month. MSPGCL has claimed Rs. 228.66 Crore, Rs. 211.05 Crore, and Rs. 150.03 Crore of other charges during the respective months of Q2 of FY 2019-20. These charges have arrived due to variation in actual energy charge vis-à-vis MTR approved energy charge for Q2 months of FY 2019-20.

4.17 The Table below shows the summary of actual energy charges and MTR approved energy charges for various MSPGCL's generating stations during Q2 months of FY 2019-20:

Sr No	Stations	Approved (Rs./kWh)	Actual for July (Rs./kWh)	Actual for August (Rs./kWh)	Actual for September (Rs./kWh)
1	Bhusaval U3	<b>3.097</b>	NA	3.788	3.905
2	Bhusaval U4 & U5	<b>2.774</b>	3.164	3.188	3.294
3	Kaperkheda U1 to U4	<b>2.626</b>	2.981	3.577	3.325
4	Kaperkheda U5	<b>2.240</b>	2.799	3.151	3.277
5	Nashik U3 to U5	<b>3.436</b>	3.449	4.098	3.444
6	Chandrapur U3 to U7	<b>2.113</b>	3.183	3.297	3.210
7	Paras U3 & U4	<b>2.121</b>	3.440	3.433	3.669

Sr No	Stations	Approved (Rs./kWh)	Actual for July (Rs./kWh)	Actual for August (Rs./kWh)	Actual for September (Rs./kWh)
8	Parali U6 & U7	<b>2.787</b>	NA	3.382	3.274
9	Koradi U6 & U7	<b>3.106</b>	3.904	4.018	3.778
10	Koradi U8 to U10	<b>2.971</b>	3.089	2.929	2.784
11	Chandrapur U8 and U9	<b>2.471</b>	2.90	3.206	2.985
12	Parali U8	<b>2.364</b>	NA	NA	3.141
13	Uran Gas TPS	<b>1.944</b>	2.501	2.475	2.553

4.18 As can be seen from above Table, that during Q2 of FY 2019-20 the actual energy charges for almost all of the generating station of MSPGCL is higher than the energy charge approved in MTR Order. The above variation in actual energy charge is mainly due to variation in landed price of fuel and GCV with respect to various MSPGL's generating stations during aforesaid period. This has impacted the average power purchase cost during the respective period. The Commission has verified the fuel adjustment charges claimed from the invoices submitted by MSEDCL and found them to be in order.

4.19 The Table below shows the variation in power purchase in terms of per unit variable charge, per unit fixed charge and average power purchase cost for MSPGCL's generating stations during Q2 of FY 2019-20.

Particular	Approved for July, 2019						Actual for July, 2019							Variation						
	Quantum (MUs)	Variable cost		Fixed cost		APPC (Rs./ kWh)	Quantum (MUs)	Variable cost*			Fixed cost		APPC (Rs./ kWh)	Quantum (MUs)	Variable Cost*			Fixed Cost		APPC (Rs./ kWh)
		(Rs. Cr)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)			V.C. (Rs. Crore)	Other Charge (Rs. Crore)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)			V.C. (Rs. Crore)	Other Charge (Rs. Crore)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)	
a	b	c	d	e	f=c+e	a	b	c	d	e	f	g=d+f	a	b	c	d	e	f	g=d+f	
Stations included in MoD Stack in MTR Order	3,357.35	738.22	2.20	439.14	1.31	3.51	2,025.5	437.97	167.50	2.99	300.52	1.48	4.47	(1,331)	(300.25)	167.50	0.79	(138.62)	0.18	0.97
Stations excluded from MoD Stack in MTR Order	-	-	-	289.43	-	-	1,460.8	416.43	61.16	3.27	262.51	1.80	5.07	1,461	416.43	61.16	3.27	(26.92)	1.80	5.07
<b>Total MSPGCL</b>	<b>3,357.35</b>	<b>738.22</b>	<b>2.20</b>	<b>728.58</b>	<b>2.17</b>	<b>4.37</b>	<b>3,486.3</b>	<b>854.40</b>	<b>228.66</b>	<b>3.11</b>	<b>563.04</b>	<b>1.61</b>	<b>4.72</b>	<b>129.00</b>	<b>116.18</b>	<b>228.66</b>	<b>0.91</b>	<b>(165.54)</b>	<b>(0.56)</b>	<b>0.35</b>

\* Variable charge per unit inclusive of other charges (i.e., actual fuel adjustment charges) for the month of July, 2019

The fixed charge per unit for both category of stations, i.e., included in MoD and excluded in MoD are higher, however, weighted avg. per unit fixed cost for combined MSPGCL stations is lower mainly because of spread of fixed cost over increased MUs generated from MSPGCL Stations. Against the above, no generation was envisaged from certain stations resulting in approval of higher per unit fixed charge in MTR Order.

Particular	Approved for August, 2019						Actual for August, 2019							Variation						
	Quantum (MUs)	Variable cost		Fixed cost		APPC (Rs./ kWh)	Quantum (MUs)	Variable cost*			Fixed cost		APPC (Rs./ kWh)	Quantum (MUs)	Variable Cost*			Fixed Cost		APPC (Rs./ kWh)
		(Rs. Cr)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)			V.C. (Rs. Crore)	Other Charge (Rs. Crore)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)			V.C. (Rs. Crore)	Other Charge (Rs. Crore)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)	
a	b	c	d	e	f=c+e	a	b	c	d	e	f	g=d+f	a	b	c	d	e	f	g=d+f	
Stations included in MoD Stack in MTR Order	3,357.35	738.22	2.20	439.14	1.31	3.51	1,558.93	336.31	142.13	3.07	226.17	1.45	4.52	(1,798)	(401.91)	142.13	0.87	(212.97)	0.14	1.01
Stations excluded from MoD Stack in MTR Order	-	-	-	289.43	-	-	1,094.05	310.21	68.92	3.47	247.37	2.26	5.73	1,094	310.21	68.92	3.47	(42.06)	1.40	4.86
<b>Total MSPGCL</b>	<b>3,357.35</b>	<b>738.22</b>	<b>2.20</b>	<b>728.58</b>	<b>2.17</b>	<b>4.37</b>	<b>2,652.98</b>	<b>646.52</b>	<b>211.05</b>	<b>3.23</b>	<b>473.54</b>	<b>1.78</b>	<b>5.02</b>	<b>(704.3)</b>	<b>(91.70)</b>	<b>211.05</b>	<b>1.03</b>	<b>(255.03)</b>	<b>(0.39)</b>	<b>0.65</b>

*\*Variable charge per unit inclusive of other charges (i.e., actual fuel adjustment charges) for the month of August, 2019*

*The fixed charge per unit for both category of stations, i.e., included in MoD and excluded in MoD are higher, however, weighted avg. per unit fixed cost for combined MSPGCL stations is lower mainly because of spread of fixed cost over increased MUs generated from MSPGCL Stations. Against the above, no generation was envisaged from certain stations resulting in approval of higher per unit fixed charge in MTR Order.*

Particular	Approved for September, 2019						Actual for September, 2019							Variation						
	Quantum (MUs)	Variable cost		Fixed cost		APPC (Rs./ kWh)	Quantum (MUs)	Variable cost*			Fixed cost		APPC (Rs./ kWh)	Quantum (MUs)	Variable Cost*			Fixed Cost		APPC (Rs./ kWh)
		(Rs. Cr)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)			V.C. (Rs. Crore)	Other Charge (Rs. Crore)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)			V.C. (Rs. Crore)	Other Charge (Rs. Crore)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)	
a	b	c	d	e	f=c+e	a	b	c	d	e	f	g=d+f	a	b	c	d	e	f	g=d+f	
Stations included in MoD Stack in MTR Order	3,362.84	742.52	2.21	453.07	1.35	3.56	1,346.77	292.61	113.00	3.01	225.96	1.68	4.69	(2,016.1)	(449.91)	113.00	0.80	(227.11)	0.33	1.13
Stations excluded from MoD Stack in MTR Order	-	-	-	275.51	-	-	896.35	263.55	37.03	3.35	199.32	2.22	5.58	896.35	263.55	37.03	3.35	(76.19)	2.22	4.76
<b>Total MSPGCL</b>	<b>3,362.84</b>	<b>742.52</b>	<b>2.21</b>	<b>728.58</b>	<b>2.17</b>	<b>4.37</b>	<b>2,243.11</b>	<b>556.16</b>	<b>150.03</b>	<b>3.15</b>	<b>425.28</b>	<b>1.90</b>	<b>5.04</b>	<b>(1,119.72)</b>	<b>(186.36)</b>	<b>150.03</b>	<b>0.94</b>	<b>(303.30)</b>	<b>(0.27)</b>	<b>0.67</b>

\* Variable charge per unit inclusive of other charges (i.e., actual fuel adjustment charges) for the month of September, 2019.

The fixed charge per unit for both category of stations, i.e., included in MoD and excluded in MoD are higher, however, weighted avg. per unit fixed cost for combined MSPGCL stations is lower mainly because of spread of fixed cost over increased MUs generated from MSPGCL Stations. Against the above, no generation was envisaged from certain stations resulting in approval of higher per unit fixed charge in MTR Order.

- 4.20 Variation in power purchase expenses from MSPGCL during Q2 of FY 2019-20 can be divided into two part, i.e., variation in power purchase expense on account of increased quantum purchase and variation in power purchase expense on account of increased per unit rate as follows:

Month	Variation in Expenses for power purchase from MSPGCL (Rs. Crore)		
	On Account of Variation in Quantum of Power Purchase	On Account of Variation in Per Unit rate of Power Purchase	Total
July, 2019	56.36	122.95	179.31
August, 2019	(307.73)	172.04	(135.69)
September, 2019	(489.83)	150.20	(339.63)

Out of above total variation as mentioned in Table above, variation in power purchase expense on account of increased per unit rate is only considered for FAC computation.

#### **NTPC**

- 4.21 MSEDCL has purchased total 2,132.50 MUs, 2,102.09 MUs and 2,287.97MUs of power from NTPC's stations (including NTPC NVVNL bundled power) as compared to MTR approved monthly MoD stack of 2,271.03 MUs, 2,271.03 MUs and 2,281.13 MUs during the months of July, August, and September 2019, respectively. The above power from NTPC's stations has been procured at an average power purchase cost of Rs. 3.84/ kWh, Rs. 3.72 / kWh and Rs. 3.95 /kWh as compared to monthly approved cost of Rs. 3.30/kWh, Rs. 3.30/kWh and Rs. 3.33/kWh derived considering the approved MoD stack value for the month of July, August, and September, 2019, respectively.
- 4.22 The Table below shows variation in power purchase in terms of per unit variable charge, per unit fixed charge and average power purchase cost for NTPC's generating stations during Q2 of FY 2019-20:

Particular	Approved for July, 2019						Actual for July, 2019						Variation					
	Quantum (MUs)	Variable Cost*		Fixed Cost		APPC (Rs./kWh)	Quantum (MUs)	Variable Cost*		Fixed Cost		APPC (Rs./kWh)	Quantum (MUs)	Variable charge		Fixed Cost		APPC (Rs./kWh)
		(Rs. Cr)	(Rs./kWh)	(Rs. Cr)	(Rs./kWh)			(Rs. Cr)	(Rs./kWh)	(Rs. Cr)	(Rs./kWh)			(Rs. Cr)	(Rs./kWh)	(Rs. Cr)	(Rs./kWh)	
Stations included in MoD Stack in MTR Order	2,271.03	330.79	1.46	252.24	1.11	2.57	1,765.14	308.33	1.72	212.64	1.20	2.92	(505.89)	(22.46)	0.26	(39.60)	0.09	0.35
Stations not included in MoD stack in MTR Order:																		
i. KhSTPS-II	-	0.53	-	9.56 <sup>^</sup>	-	-	77.65	12.69	1.63	10.38	1.34	2.97	77.65	12.16	1.63	0.82	1.34	2.97
ii. Mauda II	-	0.72	-	13.18 <sup>^</sup>	-	-	109.29	49.30	4.51	44.83	4.10	8.61	109.29	48.58	4.51	31.65	4.10	8.61
iii. NTPC Solapur 2	-	-	-	44.34 <sup>^</sup>	-	-	-	-	-	-	-	-	-	-	-	(44.34)	-	-
iv. Mauda I	-	0.72	-	47.38 <sup>^</sup>	-	-	168.92	71.20	4.22	40.34	2.38	6.60	168.92	70.48	4.22	(7.04)	2.38	6.60
v. NTPC Solapur	-	-	-	49.30 <sup>^</sup>	-	-	-	0.01	-	65.25	-	-	-	0.01	-	15.95	-	-
vi. NTPC NVVN Coal	-	-	-	-	-	-	11.50	3.93	3.42	-	-	3.42	11.50	3.93	3.42	-	-	3.42
Total Stations excluded in MoD Stack in MTR Order	-	1.97	-	163.76	-	-	367.36	137.14	3.73	180.80	4.38	8.11	367.36	135.17	3.73	(2.96)	4.38	8.11
<b>Total NTPC</b>	<b>2,271.03</b>	<b>332.76</b>	<b>1.47</b>	<b>416.00</b>	<b>1.83</b>	<b>3.30</b>	<b>2,132.50</b>	<b>445.47</b>	<b>2.09</b>	<b>373.43</b>	<b>1.75</b>	<b>3.84</b>	<b>(138.53)</b>	<b>112.71</b>	<b>0.62</b>	<b>(42.57)</b>	<b>(0.08)</b>	<b>0.54</b>

\* Variable charge per unit inclusive of other charges for the month of July, 2019.

<sup>^</sup>Fixed cost payable as per the terms and conditions of the PPAs irrespective of utilisation of generation capacity.

Particular	Approved for August, 2019						Actual for August, 2019						Variation					
	Quantum (MUs)	Variable Cost*		Fixed Cost		APPC (Rs./kWh)	Quantum (MUs)	Variable Cost*		Fixed Cost		APPC (Rs./kWh)	Quantum (MUs)	Variable Cost		Fixed Cost		APPC (Rs./kWh)
		(Rs. Cr)	(Rs./kWh)	(Rs. Cr)	(Rs./kWh)			(Rs. Cr)	(Rs./kWh)	(Rs. Cr)	(Rs./kWh)			(Rs. Cr)	(Rs./kWh)	(Rs. Cr)	(Rs./kWh)	



Particular	Approved for August, 2019						Actual for August, 2019						Variation					
	Quantum (MUs)	Variable Cost*		Fixed Cost		APPC (Rs./kWh)	Quantum (MUs)	Variable Cost*		Fixed Cost		APPC (Rs./kWh)	Quantum (MUs)	Variable Cost		Fixed Cost		APPC (Rs./kWh)
		(Rs. Cr)	(Rs./kWh)	(Rs. Cr)	(Rs./kWh)			(Rs. Cr)	(Rs./kWh)	(Rs. Cr)	(Rs./kWh)			(Rs. Cr)	(Rs./kWh)			
Stations included in MoD Stack in MTR Order	2,271.03	330.79	1.46	252.24	1.11	2.57	1714.25	292.47	1.71	50.73	0.30	2.00	(556.78)	(38.32)	0.25	(201.51)	(0.81)	(0.57)
Stations not included in MoD stack in MTR Order:																		
i. KhSTPS-II	-	0.53	-	9.56 <sup>^</sup>	-	-	91.42	19.20	2.10	10.54	1.15	3.25	91.42	18.67	2.10	0.98	1.15	3.25
ii. Mauda II	-	0.72	-	13.18 <sup>^</sup>	-	-	41.55	15.33	3.69	40.42	9.73	13.42	41.55	14.61	3.69	27.24	9.73	13.42
iii. NTPC Solapur 2	-	-	-	44.34 <sup>^</sup>	-	-	-	-	-	-	-	-	-	-	-	(44.34)	-	-
iv. Mauda I	-	0.72	-	47.38 <sup>^</sup>	-	-	152.01	54.64	3.59	42.39	2.79	6.38	152.01	53.92	3.59	(4.99)	2.79	6.38
v. NTPC Solapur	-	-	-	49.30 <sup>^</sup>	-	-	93.14	29.51	3.17	65.25	7.01	10.17	93.14	29.51	3.17	15.95	7.01	10.17
vi. NTPC NVVN Coal	-	-	-	-	-	-	9.72	3.80	3.91	-	-	3.91	9.72	3.80	3.91	-	-	3.91
Total Stations excluded in MoD Stack in MTR Order	-	1.97	-	163.76	-	-	387.85	123.00	3.17	158.60	4.09	7.26	387.85	121.03	3.17	(5.16)	4.09	7.26
<b>Total NTPC</b>	<b>2,271.03</b>	<b>332.76</b>	<b>1.47</b>	<b>416.00</b>	<b>1.83</b>	<b>3.30</b>	<b>2,102.09</b>	<b>414.95</b>	<b>1.97</b>	<b>367.93</b>	<b>1.75</b>	<b>3.72</b>	<b>(168.94)</b>	<b>82.19</b>	<b>0.50</b>	<b>(48.07)</b>	<b>(0.08)</b>	<b>0.42</b>

\* Variable charge per unit inclusive of other charges for the month of August, 2019.

<sup>^</sup>Fixed cost payable as per the terms and conditions of the PPAs irrespective of utilisation of generation capacity.

Particular	Approved for September, 2019						Actual for September, 2019						Variation					
	Quantum (MUs)	Variable Cost*		Fixed Cost		APPC (Rs./kWh)	Quantum (MUs)	Variable Cost*		Fixed Cost		APPC (Rs./kWh)	Quantum (MUs)	Variable Cost		Fixed Cost		APPC (Rs./kWh)
		(Rs. Cr)	(Rs./kWh)	(Rs. Cr)	(Rs./kWh)			(Rs. Cr)	(Rs./kWh)	(Rs. Cr)	(Rs./kWh)			(Rs. Cr)	(Rs./kWh)			

Particular	Approved for September, 2019						Actual for September, 2019						Variation					
	Quantum (MUs)	Variable Cost *		Fixed Cost		APPC (Rs./ kWh)	Quantum (MUs)	Variable Cost *		Fixed Cost		APPC (Rs./ kWh)	Quantum (MUs)	Variable Cost		Fixed Cost		APPC (Rs./ kWh)
		(Rs. Cr)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)			(Rs. Cr)	(Rs./ kWh)	(Rs. Cr)	(Rs./ kWh)			(Rs. Cr)	(Rs./ kWh)			
Stations included in MoD Stack in MTR Order	2,281.13	341.1	1.50	261.79	1.15	2.64	1,685.42	319.27	1.89	222.29	1.32	3.21	(595.71)	(21.83)	0.40	(39.50)	0.17	0.57
Stations not included in MoD stack in MTR Order:																		
i. Mauda II	-	0.72	-	13.18 <sup>^</sup>	-	-	251.60	88.39	3.51	49.72	1.98	5.49	251.60	87.67	3.51	36.54	1.98	5.49
ii. NTPC Solapur 2	-	-	-	44.34 <sup>^</sup>	-	-	-	-	-	-	-	-	-	-	-	(44.34)	-	-
iii. Mauda I	-	0.72	-	47.38 <sup>^</sup>	-	-	181.44	61.45	3.39	42.26	2.33	5.72	181.44	60.73	3.39	(5.12)	2.33	5.72
iv. NTPC Solapur	-	-	-	49.3 <sup>^</sup>	-	-	159.52	53.29	3.34	64.60	4.05	7.39	159.52	53.29	3.34	15.30	4.05	7.39
v. NTPC NVVN Coal	-	-	-	-	-	-	9.99	3.48	3.48	0.00	0.00	3.48	9.99	3.48	3.48	-	-	3.48
Total Stations excluded in MoD Stack in MTR Order	-	1.44	-	154.21	-	-	602.55	206.61	3.43	156.58	2.60	6.03	602.55	205.17	3.43	2.37	2.60	6.03
<b>Total NTPC</b>	<b>2,281.13</b>	<b>342.54</b>	<b>1.50</b>	<b>415.99</b>	<b>1.82</b>	<b>3.33</b>	<b>2,287.97</b>	<b>525.88</b>	<b>2.30</b>	<b>378.87</b>	<b>1.66</b>	<b>3.95</b>	<b>6.84</b>	<b>183.34</b>	<b>0.80</b>	<b>(37.13)</b>	<b>(0.17)</b>	<b>0.63</b>

\* Variable charge per unit inclusive of other charges for the month of August, 2019.

<sup>^</sup>Fixed cost payable as per the terms and conditions of the PPAs irrespective of utilisation of generation capacity.

- 4.23 As can be seen from above Table, MSEDCL has procured around 367.36 MUs, 387.85 MUs and 602.55 MUs of power during the months of July, August, and September 2019 from costlier NTPC Station (including NTPC NVVN bundled power) that were not included in monthly MoD stack in MTR Order (owing to high energy price). This has led to increase in actual power purchase cost during the respective period. The Commission has verified that actual quantum of power purchase and cost from the detailed summary bills/invoices submitted by MSEDCL and found them to be in order.
- 4.24 Variation in power purchase expenses from NTPC during Q2 of FY 2019-20 can be divided into two part, i.e., variation in power purchase expense on account of increased quantum purchase and variation in power purchase expense on account of increased per unit rate as follows:

Month	Variation in Expenses for power purchase from NTPC (Rs. Crore)		
	On Account of Variation in Quantum of Power Purchase	On Account of Variation in Per Unit rate of Power Purchase	Total
July, 2019	(45.67)	115.81	70.13
August, 2019	(55.70)	89.81	34.11
September, 2019	2.27	143.95	146.22

Out of the total variation in expense as mentioned in Table above, variation in power purchase expense on account of increased per unit rate is only considered for FAC computation.

#### **IPPs**

- 4.25 The sources of IPPs for MSEDCL include Mundra CGPL UMPP and IPPs, JSW, EMCO Power, India Bulls Power (RattanIndia) and Adani Power. During scrutiny it was observed that, while the power purchase quantum (MUs) and capacity charges with respect to IPPs were matching with the bills, there were differences in the energy charges and other charges as considered in FAC computations. The Commission sought clarifications on the same along with reconciliation and additional bills, if any, for all the three months of Q2 of FY 2019-20. MSEDCL submitted the reconciliation and clarified that the aforesaid differences are mainly on account of Change in Law (CIL) claim by IPPs in addition to monthly energy bills during the respective period. MSEDCL has added the respective CIL claim in the energy charges amount while computing FAC, therefore the same is not matching with the energy charges amount as shown in bills. The Commission has verified the reconciliation submitted by MSEDCL has found to be in order.

4.26 MSEDCL has procured 2,443.67 MUs, 2,660.77MUs and 2,577.60 MUs of power from above mentioned IPPs, as against the monthly approved MoD stack of 2,061.62 MUs, 2,015.54 MUs and 2,221.19 MUs respectively during the months of July, August, and September 2019. The average power purchase cost from these stations stands at Rs. 3.95 /kWh, Rs. 4.23/kWh, and Rs. 4.00/kWh respectively as compared to monthly approved rate of Rs. 3.77/kWh, Rs. 3.80/kWh, and Rs. 3.69/kWh for the respective months of Q2. The power purchase quantum and cost from IPPs is observed higher than that of MTR approved mainly due to following reasons:

- a. Change in actual quantum of power from various IPPs as against the quantum approved in MTR MoD stack.
- b. Revision in quoted Tariff.
- c. Inclusion of Change in Law amount during the respective period.

4.27 It is to be noted that the Commission in its MTR Order has not approved any quantum from RattanIndia and AEML 440 MW plant owing to their high variable cost. However, due to lower availability of RE sources and increase in demand during, MSEDCL has purchased 236.39.65 MUs, 502.28 MUs and 763.20 MUs during the month of July, August and September, 2019 respectively as shown in Table below. This has an impact of Rs. 476.44 Crore as additional variable cost on account of aforesaid purchase from RattanIndia and AEML. Apart from this, there is also variation in actual power purchase from other IPPs during respective months as compared to monthly quantum approved in MTR MoD stack. Due to this, the average power purchase cost has impacted during the aforesaid period.

Particular	Approved for July, 2019				Actual for July, 2019			
	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)
Stations included in MoD Stack in MTR Order	2,061.62	2.01	688.99	3.34	2,207.28	2.24	762.66	3.46
Stations not included in MoD stack in MTR Order:								
i. AEML 440	-	2.50	6.42 <sup>^</sup>	-	112.18	3.25	74.78	6.67
ii. RIPL 450	-	3.14	81.91 <sup>^</sup>	-	46.58	3.33	48.06	10.32
iii. RIPL 750	-	3.14		-	77.63	3.33	80.01	10.32
Total Stations excluded in MoD Stack in MTR Order	-	-	88.32 <sup>^</sup>	-	236.39	3.29	202.93	8.58
<b>Total IPPs</b>	<b>2,061.62</b>	<b>2.01</b>	<b>777.31</b>	<b>3.77</b>	<b>2,443.67</b>	<b>2.35</b>	<b>965.59</b>	<b>3.95</b>

\*PP Cost=(Variable Cost+Fixed Cost+Other Charges)

<sup>^</sup>Fixed cost payable as per the terms and conditions of the PPAs irrespective of utilisation of generation capacity.

Particular	Approved for August, 2019				Actual for August, 2019			
	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)
Stations included in MoD Stack in MTR Order	2,015.54	2.00	677.73	3.36	2,158.48	2.29	847.98	3.93
Stations not included in MoD stack in MTR Order:								
i. AEML 440	-	2.50	6.42 <sup>^</sup>	-	186.98	2.67	88.86	4.75
ii. RIPL 450	-	3.14	81.91 <sup>^</sup>	-	118.24	3.34	70.78	5.99
iii. RIPL 750	-	3.14		-	197.06	3.34	117.96	5.99
Total Stations excluded in MoD Stack in MTR Order	-	-	88.32 <sup>^</sup>	-	502.28	3.09	277.60	5.53
<b>Total IPPs</b>	<b>2,015.54</b>	<b>2.00</b>	<b>766.05</b>	<b>3.80</b>	<b>2,660.77</b>	<b>2.44</b>	<b>1,125.57</b>	<b>4.23</b>

\*PP Cost=(Variable Cost+Fixed Cost+Other Charges)

<sup>^</sup>Fixed cost payable as per the terms and conditions of the PPAs irrespective of utilisation of generation capacity.

Particular	Approved for September, 2019				Actual for September, 2019			
	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	PP Cost* (Rs. Cr)	APPC (Rs./kWh)
Stations included in MoD Stack in MTR Order	2,221.19	2.06	730.83	3.29	1,814.40	2.25	671.15	3.70
Stations not included in MoD stack in MTR Order:								
i. AEML 440	-	2.50	6.42 <sup>^</sup>	-	198.36	2.78	90.77	4.58
ii. RIPL 450	-	3.14	81.91 <sup>^</sup>	-	211.82	3.34	100.66	4.75
iii. RIPL 750	-	3.14		-	353.03	3.34	167.77	4.75
Total Stations excluded in MoD Stack in MTR Order	-	-	88.32 <sup>^</sup>	-	763.20	3.19	359.20	4.70
<b>Total IPPs</b>	<b>2,221.19</b>	<b>2.06</b>	<b>819.15</b>	<b>3.69</b>	<b>2,577.60</b>	<b>2.53</b>	<b>1,030.35</b>	<b>4.00</b>

\*PP Cost=(Variable Cost+Fixed Cost+Other Charges)

<sup>^</sup>Fixed cost payable as per the terms and conditions of the PPAs irrespective of utilisation of generation capacity.

4.28 Further, apart from additional power purchase from costlier sources as per Table above, the variation in the power purchase cost is also due to revision/change in quoted tariff as the quoted tariff 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. CERC has published new escalation indices in June 2018 & July 2018 and revised the escalation index applicable to Domestic coal and transportation from April 2013.

This has resulted in increase in Energy Charges. Due to the above, the average power purchase cost has increased significantly during the respective period.

Also, as stated above MSEDCL has also considered Change in Law (CIL) claim by IPPs in power purchase cost which is in addition to monthly energy bills during the respective period. These Change in Law (CIL) events are related to imposition of GST compensation cess, change in royalty, custom duty, change in NCDP, shortfall in domestic coal under SHAKTI Policy and carrying cost on CIL, etc. during the aforesaid period. These Change in Law events have been approved by the respective Commission's Order, as the case may be, under the provisions of respective PPAs. MSEDCL has submitted the CIL invoices for the concerned period. Further, while scrutinizing the CIL bills it was observed that the amount shown in CIL bills/invoices were not matching against the respective amount considered in FAC computation. In fact, the amounts considered in FAC calculations were observed to be lesser than that of CIL bills/invoices. In response to query sought, MSEDCL clarified the Change in Law claims raised by the generators are according to their technical parameters, whereas MSEDCL works out the CIL claim amount based on normative / bid parameters. These parameters include SHR of power plant, GCV of coal, etc. which have impact of coal consumption. Therefore, there is difference in CIL amount claimed by generator and that worked out by MSEDCL.

4.29 The Table below shows the reconciliation of CIL submitted by the MSEDCL. also the impact of above CIL payment in Rs./kWh during Q2 period can be seen below:

Month	Sr. No	IPP	MU	As per bills (Rs. Cr) (Regular CIL)	As per MSEDCL (Regular CIL)		NCDP/Coal shortfall/Shakti		Total CIL	
					Rs. Cr	Rs./Kwh	Rs. Cr	Rs./Kwh	Rs. Cr	Rs./Kwh
July-19	1	Adani Power	1,778.42	57.06	54.47	0.31	-	-	54.47	0.31
	2	RIPL	124.21	13.96	4.32	0.35	-	-	4.32	0.35
	3	CGPL	254.57	4.94	6.83	0.27	-	-	6.83	0.27
	4	GMR	113.53	6.44	4.08	0.36	11.00*	0.97	15.08	1.33
	5	JSW	172.94	4.38	3.95	0.23	-	-	3.95	0.23
	6	<b>Total</b>	<b>2,443.67</b>	<b>86.78</b>	<b>73.64</b>	<b>0.30</b>	<b>11.00</b>	<b>0.05</b>	<b>84.64</b>	<b>0.35</b>

\*Rs.11.00 Crore paid towards NCDP, Busy Season Surcharge (BSS) and Development Surcharge (DS)

Month	Sr. No	IPP	MU	As per bills (Rs. Cr) (Regular CIL)	Regular CIL		NCDP/Coal shortfall/Shakti		Total CIL	
					Rs. Cr	Rs./Kwh	Rs. Cr	Rs./Kwh	Rs. Cr	Rs./Kwh
Aug-19	1	Adani Power	1,724.52	56.50	54.47	0.32	80.00*	0.46	134.47	0.78
	2	RIPL	315.30	9.27	10.97	0.35	-	-	10.97	0.35
	3	CGPL	341.49	6.35	6.08	0.18	-	-	6.08	0.18
	4	GMR	101.46	4.66	3.64	0.36	0.42	0.04	4.06	0.40

Month	Sr. No	IPP	MU	As per bills (Rs. Cr) (Regular CIL)	Regular CIL		NCDP/Coal shortfall/Shakti		Total CIL	
					Rs. Cr	Rs./Kwh	Rs. Cr	Rs./Kwh	Rs. Cr	Rs./Kwh
	5	JSW	178.00	4.52	4.07	0.23	-	-	4.07	0.23
	<b>6</b>	<b>Total</b>	<b>2,660.77</b>	<b>81.30</b>	<b>79.23</b>	<b>0.30</b>	<b>80.42</b>	<b>0.30</b>	<b>159.65</b>	<b>0.60</b>

\*Rs. 80 Crore paid towards NCDP (MERC Order in Case No. 290 of 2018)

Month	Sr. No	IPP	MU	As per bills (Rs. Cr) (Regular CIL)	Regular CIL		NCDP/Coal shortfall/Shakti		Total CIL	
					Rs. Cr	Rs./Kwh	Rs. Cr	Rs./Kwh	Rs. Cr	Rs./Kwh
Sept-19	1	Adani Power	1,336.30	44.49	41.20	0.31	-	-	41.20	0.31
	2	RIPL	564.84	4.46	19.64	0.35	-	-	19.64	0.35
	3	CGPL	447.53	8.31	7.87	0.18	-	-	7.87	0.18
	4	GMR	67.93	3.12	3.64	0.54	-	-	3.64	0.54
	5	JSW	161.00	4.12	3.71	0.23	-	-	3.71	0.23
	<b>6</b>	<b>Total</b>	<b>2,577.60</b>	<b>64.50</b>	<b>76.06</b>	<b>0.30</b>	<b>-</b>	<b>-</b>	<b>76.06</b>	<b>0.30</b>

4.30 From the Table above, the regular CIL pertains to change in royalty, GST compensation etc., which are claimed by IPPs on monthly basis. Apart from this MSEDCL has also paid other CIL amount such as NCDP, Busy Surcharge Development and Development Surcharge (DS) etc. during Q2 of FY 2019-20. The payment of these CIL are as per Commission's Order or APTEL Judgement as the case may be. Due to above CIL claim there is an impact of Rs. 84.64 Crore (Rs.0.35/kWh), Rs. 159.65 Crore (Rs.0.60/kWh) and Rs. 76.06 Crore (Rs.0.30/kWh) during the month of July, August and September 2019 respectively. This has led to increase in actual power purchase cost from IPPs as compared to monthly approved cost

4.31 Thus, on an overall basis considering the above impact the average power purchase cost from IPPs stands at Rs. 3.95 /kWh, Rs. 4.23/kWh, and Rs. 4.00/kWh respectively as compared to monthly approved rate of Rs. 3.77/kWh, Rs. 3.80/kWh, and Rs. 3.69/kWh for the months of July, August, and September 2019, respectively.

4.32 Variation in power purchase expenses from IPPs during Q2 of FY 2019-20 can be divided into two part, i.e., variation in power purchase expense on account of increased quantum purchase and variation in power purchase expense on account of increased per unit rate as follows:

Month	Variation in Expenses for power purchase from IPPs (Rs. Crore)		
	On Account of Variation in Quantum of Power Purchase	On Account of Variation in Per Unit rate of Power Purchase	Total

Month	Variation in Expenses for power purchase from IPPs (Rs. Crore)		
	On Account of Variation in Quantum of Power Purchase	On Account of Variation in Per Unit rate of Power Purchase	Total
July, 2019	144.05	44.24	188.29
August, 2019	245.23	114.29	359.52
September, 2019	131.44	79.75	211.19

4.33 Out of Total variation in expense as mentioned in Table above, variation in power purchase expense on account of increased per unit rate is only considered for FAC computation.

**Traders/STPP:**

4.34 MSEDCL has purchased 7.76 MUs, 90.29MUs and 138.61MUs of short-term power in the month July, August, and September, 2019, respectively. The above STPP power has been procured at an average power purchase cost of Rs. 3.36/kWh, Rs. 3.60/kWh, and Rs. 3.19/kWh during the aforesaid period as shown in Table below:

Month	Source Name	Quantum Purchased (Mus)	Cost of Power Purchase (Rs. in Crs)	APPC
July-2019	Exchange	7.76	2.61	3.37
August-2019	Exchange	90.29	32.55	3.60
September-2019	Exchange	134.14	41.55	3.10

4.35 It is to be noted that 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 meet through projected sources of power. Hence, the same is not considered in the energy balance for each year of the 3<sup>rd</sup> Control Period by the Commission. However, the Commission had allowed MSEDCL to procure short-term power in case of any shortfall from approved sources or when demand exceeds availability. The Commission directed MSEDCL to procure short term power in line with MoP guidelines vide Resolution dated 15 May, 2012 through competitive bidding route, except in case of power procured from the Power Exchanges or under the Banking mechanism. Accordingly, the Commission had approved a ceiling rate of Rs. 5.00 per kWh for power procurement from short-term sources over the 3<sup>rd</sup> Control Period.

4.36 Further, the Commission has asked MSEDCL to justify the procurement of short term power even having sufficient tied up contracted capacity. In response to above query



MSEDCL stated that in the months of July 2019 to September 2019, due to overall good monsoon during this period, MSEDCL demand was less, thus considering the load generation balance; zero schedules was given to generating station as per MoD stack. Further, there was variation in demand due to effect of rainfall over the various parts of Maharashtra, which caused to increase/decrease in demand during this period. Due to these variations, it was required to take generating units on bar for RTC period to cater the increased demand during some time period of the days. Thus, to avoid the burden of high generation cost during the period of non-requirement of power, MSEDCL procured power for some time period in a day from power exchanges as and when required and feasible to MSEDCL in the months of July-2019 to September-2019. MSEDCL also submitted the daily obligation report of above short term purchase issues by IEX showing the daily short term power purchase quantum details. Further, as the power from short-term sources has been procured by MSEDCL below the ceiling rate of Rs.5/kWh, the Commission has considered the respective actual quantum and the cost as submitted by MSEDCL. However, MSEDCL is directed to submit detailed cost benefit analysis justifying the purchase of short-term power instead of taking zero schedule units on bar for RTC period during final truing up of FY 2019-20.

#### Must Run Sources

- 4.37 The sources of Must Run Stations include KAPP, TAPP 1&2, TAPP 3&4, SSP, Pench, Dodson I and Dodson II, Non-Conventional Energy and MSPGCL Hydro (including Ghatghar) etc.
- 4.38 MSEDCL has purchased 2,061.13 MUs, 2,478.54 MUs and 2,268.71 MUs from these sources during the month of July, August, September, 2019, respectively as compared to the monthly approved MoD energy stack of 2,445.65 MUs, 2,437.40 MUs and 2,442.09 MUs. The actual quantum of power purchase from Must Run sources mainly in the month of July, 2019 is significantly lesser that that of quantum approved in MoD stack as per MTR Order. This has impacted the average power purchase cost of aforesaid month. The average power purchase cost from these stations during the aforesaid period is Rs. 4.49 /kWh, 3.95 /kWh and Rs. 3.40 /kWh as compared to monthly approved rate (derived based on monthly approved MoD stack) of Rs. 3.99 /kWh, Rs. 3.79 /kWh and Rs. 3.83 /kWh, respectively. A detailed comparison of approved MoD stack against actual purchase from Must Run Stations is shown in Table below:

Source	MTR Approved for July, 2019			Actual for July, 2019			Variation		
	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)
KAPP	92.99	24.36	2.62	100.13	24.83	2.48	7.13	0.47	(0.14)
TAPP 1&2	97.14	11.51	1.19	93.89	19.43	2.07	(3.25)	7.91	0.88
TAPP 3&4	274.46	89.02	3.24	302.80	94.39	3.12	28.34	5.37	(0.13)
SSP	102.76	21.07	2.05	12.38	2.54	2.05	(90.39)	(18.53)	-

Source	MTR Approved for July, 2019			Actual for July, 2019			Variation		
	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)
Pench	11.59	2.38	2.05	-0.02	-0.00	2.05	(11.61)	(2.38)	-
Dodson I	4.37	0.62	1.42	1.62	0.26	1.59	(2.75)	(0.36)	0.17
Dodson II	5.45	0.75	1.38	6.69	0.75	1.12	1.23	(0.00)	(0.25)
Renewable Energy Non- Solar	1,167.12	611.68	5.24	1,197.11	627.66	5.24	29.98	15.99	0.00
Renewable Energy Solar	355.21	147.65	4.16	178.12	97.17	5.46	(177.09)	(50.48)	1.30
MSPGCL Hydro	334.54	18.89	0.56	168.42	16.93	1.01	(166.12)	(1.96)	0.45
MSPGCL Lease Rent*	-	-	-	-	41.01	-	-	41.01	-
<b>Total</b>	<b>2,445.65</b>	<b>927.92</b>	<b>3.79</b>	<b>2,061.13</b>	<b>924.96</b>	<b>4.49</b>	<b>(384.52)</b>	<b>(2.96)</b>	<b>0.69</b>

\*Lease rent was not included in power purchase cost under MTR Order

Source	MTR Approved for August, 2019			Actual for August, 2019			Variation		
	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)
KAPP	92.99	24.36	2.62	100.38	24.92	2.48	7.39	0.57	(0.14)
TAPP 1&2	97.14	11.51	1.19	108.98	22.46	2.06	11.84	10.95	0.88
TAPP 3&4	274.46	89.02	3.24	302.83	93.01	3.07	28.37	3.99	(0.17)
SSP	102.76	21.07	2.05	188.83	38.71	2.05	86.07	17.64	-
Pench	11.59	2.38	2.05	0.54	0.11	2.05	(11.05)	(2.27)	-
Dodson I	4.37	0.62	1.42	9.96	1.53	1.54	5.58	0.92	0.13
Dodson II	5.45	0.75	1.38	1.62	0.75	4.64	(3.84)	(0.00)	3.26
Renewable Energy Non- Solar	1,160.79	608.36	5.24	1,335.84	659.29	4.94	175.05	50.93	(0.31)
Renewable Energy Solar	353.28	146.85	4.16	148.52	78.97	5.32	(204.76)	(67.88)	1.16
MSPGCL Hydro	334.54	18.89	0.56	281.03	18.40	0.65	(53.51)	(0.49)	0.09
MSPGCL Lease Rent*	-	-	-	-	41.01	-	-	41.01	-
<b>Total</b>	<b>2,437.40</b>	<b>923.80</b>	<b>3.79</b>	<b>2,478.54</b>	<b>979.17</b>	<b>3.95</b>	<b>41.14</b>	<b>55.37</b>	<b>0.16</b>

\*Lease rent was not included in power purchase cost under MTR Order

Source	MTR Approved for September, 2019	Actual for September, 2019	Variation
--------	----------------------------------	----------------------------	-----------

	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)	Quantum (Mus)	PP Cost (Rs. Cr)	Rate (Rs./kWh)
KAPP	89.99	23.57	2.62	97.28	24.15	2.48	7.28	0.58	(0.14)
TAPP 1&2	94.00	11.14	1.19	92.85	19.18	2.07	(1.15)	8.04	0.88
TAPP 3&4	265.61	86.15	3.24	267.93	82.40	3.08	2.32	(3.74)	(0.17)
SSP	99.45	20.39	2.05	263.12	53.94	2.05	163.67	33.55	-
Pench	11.22	2.30	2.05	27.36	5.61	2.05	16.14	3.31	-
Dodson I	4.23	0.60	1.42	10.29	1.80	1.75	6.06	1.20	0.34
Dodson II	5.28	0.75	1.42	-	0.75	-	(5.28)	(0.00)	(1.42)
Renewable Energy Non- Solar	1,187.23	622.21	5.24	866.04	437.24	5.05	(321.19)	(184.98)	(0.19)
Renewable Energy Solar	361.33	150.19	4.16	174.75	84.68	4.85	(186.58)	(65.51)	0.69
MSPGCL Hydro	323.75	18.89	0.58	469.09	21.00	0.45	145.34	3.11	(0.13)
MSPGCL Lease Rent*	-	-	-	-	41.01	-	-	41.01	-
<b>Total</b>	<b>2,442.09</b>	<b>936.19</b>	<b>3.83</b>	<b>2,268.71</b>	<b>771.77</b>	<b>3.40</b>	<b>(173.39)</b>	<b>(164.42)</b>	<b>(0.43)</b>

\*Lease rent was not included in power purchase cost under MTR Order

4.39 As can be seen from above Table that weighted average power purchase cost (Rs./kWh) in the month of July and August is higher as compared to MTR approved price. Whereas in the month of September it is lower than that of MTR approved price. Although, the must run power has been procured at a price approved the Commission in the respective Order and as per PPA terms however, due to variation in the actual energy drawl from various must run sources as compared to MTR approve quantum, the weighted average power purchase cost has impacted.

4.40 It is to be noted that the approved power purchase price of various sources in the total must-run portfolio ranges from Rs. 0.56/kWh to Rs.5.24/kWh. The weighted average power purchase cost (Rs./kWh) is arrived by considering the percentage share of each source and its corresponding approved power purchase price. Therefore, when the quantum and hence, share of costlier approved sources in the overall must run portfolio is higher, the weighted average power purchase cost (Rs./kWh) driven towards approved price of costlier sources and vice-versa. The Table below shows the percentage share of Must sources during Q2 of FY 2019-20:

Particular	July, 2019			August, 2019			September, 2019		
	MUs	Avg Rate (Rs./kWh)	% Share	MUs	Avg Rate (Rs./kWh)	% Share	MUs	Avg Rate (Rs./kWh)	% Share
Renewable Energy Non- Solar	1,197.11	5.24	58%	1,335.84	4.94	54%	866.04	5.05	38%

Particular	July, 2019			August, 2019			September, 2019		
	MUs	Avg Rate (Rs./k Wh)	% Share	MUs	Avg Rate (Rs./k Wh)	% Share	MUs	Avg Rate (Rs./k Wh)	% Share
Renewable Energy Solar	178.12	5.46	9%	148.52	5.32	6%	174.75	4.85	8%
MSPGCL Hydro*	168.42	3.44	8%	281.03	2.11	11%	469.09	1.32	21%
Others	517.49	2.75	25%	713.14	2.55	29%	758.83	2.48	33%
<b>Total</b>	<b>2,061.13</b>	<b>4.49</b>	<b>100%</b>	<b>2,478.54</b>	<b>3.95</b>	<b>100%</b>	<b>2,268.71</b>	<b>3.40</b>	<b>100%</b>

*\*Inclusive of rent lease*

4.41 In case of MSEDCL the approved variable charge from Non-solar/Solar sources is highest whereas for MSPGCL Hydro the approved variable charges are lowest. During the month of July and August, the % share of MSPGCL's power (cheapest) in the total must run portfolio was around 8% to 11%. However, in the month of September, it significantly increased to 21%. Also, in the month of September the share of costlier Non-solar source has reduced. This has resulted in decrease in average power purchase cost from must run sources mainly during September, 2019. Further, no such significant reduction has happened in the percentage share of Solar sources and other sources during respective period.

4.42 Apart from above, in case of MSPGCL's Hydro stations, the lease rents are also payable as per PPA terms (Rs. 41.01 Cr per months) which is in addition to the AFC approved for hydro stations. This lease rent was not part of power purchase cost approved in MTR Order. Hence, the actual landed power purchase cost has been higher for MSPGCL's hydro power during aforesaid period as compared to MTR approved price.

4.43 The Table below shows the monthly variation in power purchase from various sources in terms of quantum of purchase, per unit variable charge, per unit fixed charge and average power purchase cost for MSEDCL during Q2 of FY 2019-20.

Particular	Approved for July, 2019						Actual for July, 2019						Variations			
	Quantum (MUs)	Variable cost (Rs. Cr)*	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr)*	Variable charge (Rs./kWh)*	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)
	a	b	c	d	e	f=c+e	a	b	c	d	e	f=c+e	a	c	d	e=c+d
MSPGCL	3,357.3	738.22	2.20	728.58	2.17	4.37	3,486	1,083	3.11	563.04	1.61	4.72	129.0	0.91	(0.56)	0.35
NTPC	2,271.0	332.76	1.47	416.00	1.83	3.30	2,132	445.4	2.09	373.43	1.75	3.84	(139)	0.62	(0.08)	0.54
IPPs	2,061.6	423.39	2.05	353.92	1.72	3.77	2,444	587.6	2.40	378.00	1.55	3.95	382.1	0.35	(0.17)	0.18
Solar	355.21	147.65	4.16	-	-	4.16	178.1	97.17	5.46	-	-	5.46	(177)	1.30	-	1.30
Non- Solar	1,167.1	611.68	5.24	-	-	5.24	1,197	627.7	5.24	-	-	5.24	29.98	0.00	-	0.00
Other Must Run	588.78	148.95	2.53	0.75	0.01	2.54	517.5	141.4	2.73	0.77	0.01	2.75	(71.2)	0.20	0.00	0.21
MSPGCL Hydro	334.54	-		18.89	0.56	0.56	168.4	3.00	0.18	54.94	3.26	3.44	(166)	0.18	2.70	2.88
STTP	-	-	-	-	-	-	7.76	2.61	3.36	-	-	3.36	7.76	3.36	-	3.36
<b>Total MSEDCL</b>	<b>10,136</b>	<b>2,402.7</b>	<b>2.37</b>	<b>1,518</b>	<b>1.50</b>	<b>3.87</b>	<b>10,131</b>	<b>2,988</b>	<b>2.95</b>	<b>1,370.2</b>	<b>1.35</b>	<b>4.30</b>	<b>(4.25)</b>	<b>0.58</b>	<b>(0.15)</b>	<b>0.43</b>

\*Variable charge inclusive of other charges (Fuel adjustment charges, CIL etc.) for the month of July, 2019

Particular	Approved for Aug, 2019						Actual for Aug, 2019						Variations			
	Quantum (MUs)	Variable cost (Rs. Cr)*	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr)*	Variable charge (Rs./kWh)*	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)

	a	b	c	d	e	f=c+e	a	b	c	d	e	f=c+e	a	c	d	e=c+d
MSPGCL	3,357.3	738.22	2.20	728.58	2.17	4.37	2,653	857.6	3.23	473.54	1.78	5.02	(704)	1.03	(0.39)	0.65
NTPC	2,271.	332.76	1.47	416.00	1.83	3.30	2,102	415	1.97	367.93	1.75	3.72	(168)	0.51	(0.08)	0.43
IPPs	2,015.5	412.13	2.04	353.92	1.76	3.80	2,661	741.6	2.79	383.90	1.44	4.23	645.2	0.74	(0.31)	0.43
Solar	353.28	146.85	4.16	-	-	4.16	148.5	78.97	5.32	-	-	5.32	(204)	1.16	-	1.16
Non- Solar	1,160.8	608.36	5.24	-	-	5.24	1,336	659.3	4.94	-	-	4.94	175.0	(0.31)	-	(0.31)
Other Must Run	588.78	148.95	2.53	0.75	0.01	2.54	713.1	180.7	2.53	0.77	0.01	2.55	124.3	0.00	0.00	0.00
MSPGCL Hydro	334.54	-	-	18.89	0.56	0.56	281.0	4.65	0.17	54.76	1.95	2.11	(53.5)	0.17	1.38	1.55
STTP	-	-	-	-	-	-	90.29	32.55	3.60	-	-	3.60	90.29	3.60	-	3.60
<b>Total MSEDCL</b>	<b>10,081</b>	<b>2,387.2</b>	<b>2.37</b>	<b>1,518</b>	<b>1.51</b>	<b>3.87</b>	<b>9,984</b>	<b>2,970</b>	<b>2.97</b>	<b>1,280.8</b>	<b>1.28</b>	<b>4.26</b>	<b>(96.6)</b>	<b>0.61</b>	<b>(0.22)</b>	<b>0.38</b>

*\*Variable charge inclusive of other charges (Fuel adjustment charges, CIL etc.) for the month of August, 2019*

Particular	Approved for Sept, 2019						Actual for Sept, 2019						Variations			
	Quantum (MUs)	Variable cost (Rs. Cr)*	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr)*	Variable charge (Rs./kWh)*	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)
	a	b	c	d	e	f=c+e	a	b	c	d	e	f=c+e	a	c	d	e=c+d
MSPGCL	3,362	742.52	2.21	728.58	2.17	4.37	2,243	706.2	3.15	425.28	1.90	5.04	(1,120)	0.94	(0.27)	0.67
NTPC	2,281	342.54	1.50	416.00	1.82	3.33	2,288	525.9	2.30	378.87	1.66	3.95	6.84	0.80	(0.17)	0.63
IPPs	2,221	465.24	2.09	353.92	1.59	3.69	2,578	655.4	2.54	374.98	1.45	4.00	356.4	0.45	(0.14)	0.31
Solar	361.33	150.19	4.16	-	-	4.16	174.7	84.68	4.85	-	-	4.85	(187)	0.69	-	0.69
Non- Solar	1,187	622.21	5.24	-	-	5.24	866.0	437.2	5.05	-	-	5.05	(321)	(0.19)	-	(0.19)

Particular	Approved for Sept, 2019						Actual for Sept, 2019						Variations			
	Quantum (MUs)	Variable cost (Rs. Cr)*	Variable charge (Rs./kWh)	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable cost (Rs. Cr)*	Variable charge (Rs./kWh)*	Fixed cost (Rs. Cr)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)	Quantum (MUs)	Variable charge (Rs./kWh)	Fixed charge (Rs./kWh)	APPC (Rs./kWh)
	a	b	c	d	e	f=c+e	a	b	c	d	e	f=c+e	a	c	d	e=c+d
Other Must Run	569.79	144.14	2.53	0.75	0.01	2.54	758.8	187.1	2.47	0.75	0.01	2.48	189.0	(0.06)	(0.00)	(0.07)
MSPGCL Hydro	323.75			18.89	0.58	0.58	469.1	7.25	0.15	54.76	1.17	1.32	145.3	0.15	0.58	0.74
STTP	-	-	-	-	-	-	138.6	44.28	3.19	-	-	3.19	138.6	3.19	-	3.19
<b>Total MSEDCL</b>	<b>10,307</b>	<b>2,466</b>	<b>2.39</b>	<b>1,518.</b>	<b>1.47</b>	<b>3.87</b>	<b>9,516</b>	<b>2,648</b>	<b>2.78</b>	<b>1,234.6</b>	<b>1.30</b>	<b>4.08</b>	<b>(791)</b>	<b>0.39</b>	<b>(0.18)</b>	<b>0.21</b>

\*Variable charge inclusive of other charges (Fuel adjustment charges, CIL etc.) for the month of September, 2019

4.44 The Table below shows in summary of variation in Quarterly power purchase approved vis-à-vis actual for Q2 of FY 2019-20:

Particular	Approved for Q2 of FY 2019-20				Actual for Q2 of FY 2019-20				Variation in Q2 of FY 2019-20			
	Quantum (MUs)	Variable Cost (Rs. Crore)	Fixed Cost (Rs. Crore)	APPC (Rs./kWh)	Quantum (MUs)	Variable Cost (Rs. Crore)	Fixed Cost (Rs. Crore)	APPC (Rs./kWh)	Quantum	Variable cost (Rs. Cr) ( $\Delta Q$ )	Fixed cost (Rs. Cr) ( $\Delta P$ )	APPC (Rs./kWh)
MSPGCL	10,076.60	2,218.96	2,185.74	4.37	8,382.00	2,646.80	1461.86	4.90	(1,694.60)	427.84	(723.88)	0.53
NTPC	6,823.00	1,008.06	1,248.00	3.31	6,522.00	1,386.30	1120.23	3.84	(301.00)	378.24	(127.77)	0.54
IPPs	6,298.10	1,300.76	1,061.76	3.75	7,683.00	1,984.60	1136.88	4.06	1,384.90	683.84	75.12	0.31
Solar	1,069.82	444.69	0.00	4.16	501.30	260.82	0	5.20	(568.52)	(183.87)	0.00	1.05
Non- Solar	3,514.90	1,842.25	0.00	5.24	3,399.00	1,724.20	0	5.07	(115.90)	(118.05)	0.00	(0.17)

Particular	Approved for Q2 of FY 2019-20				Actual for Q2 of FY 2019-20				Variation in Q2 of FY 2019-20			
	Quantum (MUs)	Variable Cost (Rs. Crore)	Fixed Cost (Rs. Crore)	APPC (Rs./kWh)	Quantum (MUs)	Variable Cost (Rs. Crore)	Fixed Cost (Rs. Crore)	APPC (Rs./kWh)	Quantum	Variable cost (Rs. Cr) ( $\Delta Q$ )	Fixed cost (Rs. Cr) ( $\Delta P$ )	APPC (Rs./kWh)
Other Must Run	1,747.35	442.04	2.25	2.54	1,989.40	509.20	2.29	2.57	242.05	67.16	0.04	0.03
MSPGCL Hydro	992.83	0.00	56.67	0.57	918.50	14.90	164.46	1.95	(74.33)	14.90	107.79	1.38
STTP	0.00	0.00	0.00		236.65	79.44	0	3.36	236.65	79.44	0.00	3.36
<b>Total MSEDCL</b>	<b>30,524.00</b>	<b>7,255.90</b>	<b>4,554.00</b>	<b>3.87</b>	<b>29,631.00</b>	<b>8,606.00</b>	<b>3885.6</b>	<b>4.22</b>	<b>(893.00)</b>	<b>1,350.10</b>	<b>(668.40)</b>	<b>0.35</b>

4.45 From the Table above, there is an increase in power purchase cost amounting to Rs. 681 Crore (i.e., Rs. 1350.10 Cr (variable cost) + Rs. (668.40) Cr (fixed cost) during Q2 of FY 2019-20 as compared to MTR approved cost. However, there is also increase in corresponding revenue for MSEDCL due to increase in sales and corresponding billing to consumers. During Q2 of FY 2019-20, the total increase in sales is around 1,046 MUs as compared to MTR approved sales.



4.46 Base on above, on an overall basis the APPC for the month of July, August and September, 2019 is higher mainly due additional purchase of power from MSPGCL and NTPC's costlier approved sources, revision in quoted tariff from IPPs, due to incorporation of change in law amount in the total power purchase cost in line with the Commission' Order and also due to the variation in power purchase quantum from must run sources as explained in para above. Accordingly, based on above after complete scrutiny of relevant document submitted, the Commission allows the overall average power purchase cost of **Rs. 4.30/kWh** for the month of July 2019, **Rs. 4.26/kWh** for the month of August 2019 and **Rs. 4.08/kWh** for the month of September 2019 as against the MTR approved cost of **Rs. 3.87/kWh** for Q2 months of FY 2019-20 as shown in the Table above.

4.47 Further, the Commission has asked MSEDCL to confirm that all its contracted sources during Q2 were available up to their normative availability levels. The Commission has also sought MSEDCL to provide reasons for lower availability from Contracted Generators and efforts / communications made by Distribution Licensee seeking increased availability. MSEDCL was also asked to submit monthly actual availability and PLF of contracted generators during respective month of Q2. In addition, MSEDCL was also sought to submit actual Availability Vs actual Utilisation of Contracted Generators as per MoD principles along with reasons for Variation in actual quantum of power purchase from various sources vis-à-vis approved monthly MoD stack as per MTR Order. In its reply to above query MSEDCL stated that during the financial year the procurement decisions were taken based on the real time situation and the data available from the generators. MSEDCL has taken the procurement decisions based on available technical parameters to optimise the power purchase cost. However, extraction of detailed data mentioned in the query will take reasonable time. The Commission has noted the submission of MSEDCL. The Commission hereby direct MSEDCL to submit the various details as sought above during final truing up of FY 2019-20.

## **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.

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

<b>S. No.</b>	<b>Particulars</b>	<b>Units</b>	<b>July, 2019</b>	<b>August, 2019</b>	<b>September, 2019</b>
1	Average power purchase cost approved by the Commission	Rs./kWh	3.87	3.87	3.87
2	Actual average power purchase	Rs./kWh	4.30	4.26	4.08

S. No.	Particulars	Units	July, 2019	August, 2019	September, 2019
	cost				
3	Change in average power purchase cost (=2 -1)	Rs./kWh	0.43	0.38	0.21
4	Net Power Purchase	MU	10,131.41	9,984.67	9,516.00
<b>5</b>	<b>Change in fuel and power purchase cost (=3 x 4/10)</b>	<b>Rs. Crore</b>	<b>439.02</b>	<b>383.31</b>	<b>203.56</b>

- 5.3 It is to be noted that up to the month of September 2017, MSEDCL used to calculate FAC and levy/charge the same to the consumers irrespective of the categories. However, considering the different billing cycle of MSEDCL for Agriculture (AG) and Non-Agriculture (Non-AG) categories, MSEDCL proposed and calculated FAC for Agriculture (AG) and Non-Agriculture (Non-AG) categories separately from December, 2017.
- 5.4 As per the billing cycle of MSEDCL, Non- Agriculture consumers are billed on monthly basis whereas, billing to Agriculture consumers happens on quarterly basis, i.e., total FAC for quarter months get levied at the end month of quarter. Hence, for the first two month of any quarter, the FAC amount pertaining to AG consumers remained un-recovered and cumulatively it gets billed at the last month of quarter. In order to clearly identify FAC amount associated with different categories (AG & Non-AG), the Commission as per in its previous vetting report from December, 2017 in line with MSEDCL proposal had adopted the methodology of bifurcating the FAC amounts into Agriculture (AG) and non-Agriculture (non-AG) categories. The Commission bifurcated each component of FAC, i.e., change in fuel and power purchase cost (F), carrying cost (C) and adjustment factor (B) on the basis of corresponding sales of Agriculture (AG) and non-Agriculture (non-AG) categories.
- 5.5 However, MSEDCL in its present quarter, i.e., Q2 of FY 2019-20 vide its later dated 15 November, 2019 stated that it has analysed methodology of bifurcating FAC into AG and Non-AG consumers and observed that bifurcating FAC on the basis of sales of respective category is overburdening AG consumers even though it has lower ABR. Accordingly, MSEDCL has proposed to bifurcate FAC to AG and Non-AG consumers based on the weighted average of ABR and sales, in similar line with the determination of consumer Tariff. MSEDCL has re-allocated the FAC from April 2018 to June 2019 based on revised bifurcation methodology and worked out the adjustment of Rs. 912.70 Crore between AG and Non-AG categories. MSEDCL stated that it is adjusting the aforesaid amount by recovering it from Non-AG consumers for next five months starting from FAC months of November, 2019 to March 2020 and refunding the same to AG consumers in two quarters, i.e., December, 2019 and March, 2020.

- 5.6 In view of above, as far as bifurcation of FAC in terms of weighted average of ABR and sales is concerned, the Commission in its MYT Regulations has provided formula for category wise computation of FAC per unit as reproduced below:

*10.9 The  $Z_{FAC}$  per kWh for a particular Tariff category/sub-category/consumption slab shall be computed as per the following formula :-*

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

*Where :*

*$Z_{FAC\ Cat}$  = 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.*

- 5.7 Hence, from above specified formula, the FAC per unit of any individual category is already factored by 'k', i.e., ratio of ABR/ACoS, thereby allocating the FAC over different categories in terms of their ABR and ACoS. In addition to this, the Regulations also specified the capping on per unit FAC, i.e., the monthly ZFAC shall not exceed 20% of the variable component of Tariff. Therefore, the concern of MSEDCL that FAC overburdening AG consumers is already taken care in Regulation itself. Hence, the Commission does not find any merit in approach suggested by MSEDCL. Accordingly, the Commission has continued with its earlier approach of bifurcation absolute FAC in line with its previous post facto approvals.
- 5.8 Also, with respect to adjustment of Rs. 912.70 Crore, it was observed that MSEDCL has computed the same by re-allocating the FAC pertaining to FY 2018-19 and also Q1 of FY 2019-20. As FY 2018-19 is already tried up by the Commission in its MYT Order dated 30 March, 2020, hence, any over-recovery or under-recovery of expenditure and revenue has already been adjusted. Also, as the Commission has not accepted MSEDCL approach of bifurcation, therefore, the Commission didn't find any merit in accepting the adjustment factor of Rs. 912.70 Crore as computed by MSEDCL. Hence, the same has disallowed in present FAC approval.
- 5.9 Accordingly, the Commission in the present quarter has bifurcated FAC into AG and Non-AG categories based on their actual sales for respective months. Further, as FY 2019-20 is also over and the Commission has also carried over provisional truing up of

the same, any adjustment of FAC over-recovery or under-recovery will be reconciled at the time of final truing up of FY 2019-20.

5.10 Based on the above methodology specified, the Commission has bifurcated the stand-alone monthly change in power purchase cost 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	Unit	July, 2019			August, 2019		
		Total	Ag	Non-Ag	Total	Ag	Non-Ag
Category wise sales during the month	MUs	8,891.51	2,000.00	6,891.51	8,460.1	2,000.00	6,460.12
<b>Change in Fuel cost and power purchase cost attributable to Sales within the License Area (F)</b>	<b>Rs. Crore</b>	<b>439.02</b>	<b>98.75</b>	<b>340.27</b>	<b>383.31</b>	<b>90.62</b>	<b>292.69</b>

Particulars	Units	September, 2019		
		Total	Ag	Non-Ag
Category wise sales during the month	MUs	8,455.03	2,086.00	6,369.03
<b>Change in Fuel cost and power purchase cost attributable to Sales within the License Area (F)</b>	<b>Rs. Crore</b>	<b>203.56</b>	<b>50.22</b>	<b>153.34</b>

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

6.1 Adjustment factor pertains to any under-recovery or over-recovery of FAC amount associated with previous months. MSEDCL has calculated adjustment factor for over recovery / under recovery by considering previous quarter FAC allowed to be recovered as per its own computation. As this is a post facto approval, hence, the Commission has recomputed adjustment factor by considering the FAC cost allowed to be recovered as approved in previous quarter FAV approval. 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, 2019 to September, 2019 is as below.

S. No.	Particulars	Units	July, 2019		August, 2019		September, 2019	
			Ag	Non-Ag	Ag	Non-Ag	Ag	Non-Ag
	<b>Category</b>							

S. No.	Particulars	Units	July, 2019		August, 2019		September, 2019	
			Ag	Non-Ag	Ag	Non-Ag	Ag	Non-Ag
1.1	Incremental cost allowed to be recovered in Month n-4	Rs. Crore	NIL*	130.00	NIL*	(55.28)	360.87	174.80
1.2	Incremental cost in Month n-4 actually recovered in month n-2	Rs. Crore	0.80	246.58	(0.05)	66.67	317.00	85.06
1.3	<b>Adjustment factor for (over-recovery)/under-recovery (=1.1 - 1.2)</b>	<b>Rs. Crore</b>	<b>(0.80)</b>	<b>(116.58)</b>	<b>0.05</b>	<b>(121.95)</b>	<b>43.87</b>	<b>89.74</b>

\*Allowable FAC for AG categories for the month of July & August is considered cumulatively in the month of September as per quarterly billing cycle.

## **7 Carrying Cost for over recovery/under recovery (C)**

7.1 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.

7.2 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, 2019 to September, 2019.

S. No.	Particulars	Units	July, 2019		August, 2019		September, 2019	
			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	(0.80)	(116.58)	0.05	(121.95)	43.87	89.74
2	Applicable Interest rate	%	9.90	9.90	9.75	9.75	9.65	9.65
3	<b>Carrying cost for over-recovery/under-recovery</b>	<b>Rs. Crore</b>	<b>(0.01)</b>	<b>(1.92)</b>	<b>0.00</b>	<b>(1.98)</b>	<b>0.71</b>	<b>1.44</b>

## **8 Disallowance due to excess Distribution Loss**

8.1 Regulation 10.8 of MYT Regulations, 2015 provides for FAC amount to be reduced in case the actual distribution loss for the month exceeds the approved distribution loss. The relevant extract is reproduced as follows.

“10.8 The total ZFAC recoverable as per the formula specified above shall be recovered from the actual sales in terms of “Rupees per kilowatt-hour”:

*Provided that, in case of unmetered consumers, the ZFAC shall be recoverable based on estimated sales to such consumers, computed in accordance with such methodology as may be stipulated by the Commission:*

*Provided further that, where the actual distribution losses of the Distribution Licensee exceed the level approved by the Commission, the amount of ZFAC corresponding to the excess distribution losses (in kWh terms) shall be deducted from the total ZFAC recoverable”*

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

Sr. No	Particular	Calculation	Unit	Approved in Tariff Order	Cumulative up to		
					July'19	Aug'19	Sept'19
1	Net Energy requirement at T<math>\diamond</math>D Periphery	a	MU	1,29,507	44,669	54,151	63,326
2	EHV Sales	b	MU	8,549	3,339	4,016	4,684
3	Net Energy Available for Sale at 33kV	c=a-b	MU	1,20,957	41,330	50,134	58,641
4	Energy injected and drawn at 33kV	d	MU	488	163	217	265
5	Total Energy Available for Sale at 33kV	e=c+d	MU	1,21,445	41,493	50,352	58,907
6	LT Agriculture Sales (Including D.F)	f	MU	31,149	10,062	11,975	13,889
7	LT Sales excluding Agriculture Sales (Including D.F)	g	MU	41,016	14,931	18,198	21,298
8	HT Sales excluding EHV level sales (Including D.F)	h	MU	27,654	9,835	12,063	14,268
9	HT/LTIP Credit Sales and HT/LT Offset Export Solar units	i	MU	-	214	315	399
10	Total Sales including D.F (Excluding EHV Sales)	j=f+g+h+i	MU	99,820	35,042	42,551	49,854
11	OA sales	k	MU	5,523	1,160	1,420	1,668
17	Retail Energy Sale to Consumers (Excluding EHV Sales and Including OA Sales)	l=j+k	MU	1,05,342	36,202	43,971	51,522
18	Distribution Loss (Excl. EHV Sales)	m=e-l	MU	16,103	5,291	6,381	7,384
19	% Distribution Loss (Excl. EHV Sales)	n=m/e	%	13.26%	12.75%	12.67%	12.54%
20	Excess Distribution loss = [Actual Distribution loss - Distribution loss approved] x Net Energy Input		MU	-	-	-	-

8.3 The cumulative distribution losses for the month of July, August and September is 12.75%, 12.67% and 12.54%, respectively, as compared to MTR approved losses of 13.26%. As, the cumulative distribution losses of MSEDCL for the all the months of Q2 period was below the approved losses hence, no excess distribution losses (MUs) has been worked out for Q2 period.

## 9 Summary of Allowable ZFAC

9.1 The summary of the FAC amount as approved by the Commission for the month of July, 2019 to September, 2019 is as shown in the Table below.

S. No	Particulars	Units	July, 2019		August, 2019		September, 2019	
			Ag	Non-Ag	Ag	Non-Ag	Ag	Non-Ag
<b>1.0</b>	<b>Calculation of ZFAC</b>							
1.1	Change in cost of generation and power purchase attributable to Sales within the License Area (F)	Rs. Crore	98.75	340.27	90.62	292.69	50.22	153.34
1.2	Carrying cost for over-recovery/under-recovery (C)	Rs. Crore	(0.01)	(1.92)	0.00	(1.98)	0.71	1.44
1.3	Adjustment factor for over-recovery/under-recovery (B)	Rs. Crore	(0.80)	(116.58)	0.05	(121.95)	43.87	89.74
	<b>ZFAC = F+C+B</b>	<b>Rs. Crore</b>	97.94	221.76	90.66	168.77	94.80	244.52
	ZFAC = F+C+B July'19 for AG Category	Rs. Crore					97.94	
	ZFAC = F+C+B Aug'19 for AG Category	Rs. Crore					90.66	
	<b>Total ZFAC (Quarterly) for AG Category</b>	Rs. Crore					283.40	
	<b>FAC charged for the billing month of July</b>	Rs. Crore	-	<b>221.76</b>	-	<b>168.77</b>	<b>283.40</b>	<b>244.52</b>
<b>2.0</b>	<b>Calculation of FAC Charge</b>							
2.1	Energy Sales within the License Area	MU	2,000.00	6,891.51	2,000.00	6,460.12	2,086.00	6,369.03
	Energy Sales within the License Area to AG consumers during last quarter	MU					6,086.00	

S. No	Particulars	Units	July, 2019		August, 2019		September, 2019	
			Ag	Non-Ag	Ag	Non-Ag	Ag	Non-Ag
2.2	Excess Distribution Loss	MU	-	-	-	-	-	-
2.3	ZFAC per kWh	Rs./kWh	0.49	0.32	0.45	0.26	0.45	0.38
2.4	ZFAC per kWh Quarterly for Ag	Rs./kWh					0.47	
2.5	20% Cap of Variable component	Rs./kWh	0.96	0.96	0.96	0.96	0.96	0.96
2.6	FAC Charge allowable in billing month	Rs./kWh	0.49	0.32	0.45	0.26	0.45	0.38
<b>3.0</b>	<b>Recovery of FAC</b>							
3.1	Allowable FAC [(2.1 x 2.5)/10]	Rs. Crore	97.94	221.76	90.66	168.77	94.80	244.52
3.2	FAC disallowed corresponding to excess Distribution Loss [(2.2 x 2.5)/10]	Rs. Crore	-	-	-	-	-	-
<b>4.0</b>	<b>Total FAC based on category wise and slab wise allowed to be recovered</b>	<b>Rs. Crore</b>	<b>97.94</b>	<b>221.76</b>	<b>90.66</b>	<b>168.77</b>	<b>94.80</b>	<b>244.52</b>
5.0	Carried forward FAC for recovery during future period (1.4-3.2-4)	Rs. Crore	-	-	-	-	-	-

9.2 As stated above, the Commission has not considered any amount towards re-allocation of FAC for the reasons already explained in paras above. Further, from the Table above it can be seen that standalone FAC for Non-Agriculture category during the months of July, August and September, 2019 is **Rs. 221.76 Crore**, **Rs 168.77 Crore** and **Rs. 244.52 Crore** respectively. As the billing of the Non-Agriculture category has been done on monthly basis, hence, based on total monthly energy sales & excess distribution losses if any, FAC per unit for Non-Agriculture category has been work out as **Rs 0.32/kWh**, **Rs 0.26/kWh** and **Rs 0.38/kWh** for the months of July, August and September, 2019 respectively.

9.3 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, 2019	Rs. Crore	287.95	221.76
August, 2019	Rs. Crore	455.59	168.77
September, 2019	Rs. Crore	450.23	244.52



Month	Units	MSEDCL's claim	Approved by the Commission
		Non-Ag	Non-Ag
<b>Total</b>	<b>Rs. Crore</b>	<b>1193.77</b>	<b>635.05</b>

9.4 From the Table above MSEDCL was eligible to recover Rs. **635.05** Crore cumulatively in the Q2 of FY 2019-20, however, it has actually recovered Rs. **1193.77** Crore. Hence, MSEDCL is required to refund the differential amount Rs. **(558.72)** Crore along with the interest to consumers.

9.5 The total FAC for Agriculture category for the months of July, August and September, 2019 is Rs. **97.94** Crore, Rs. **90.66** Crore and Rs. **94.80** Crore respectively. Based on total monthly energy sales for Agriculture category including un-metered sales and excess distribution losses, FAC per unit for Agriculture category has been work out as Rs **0.49/kWh**, Rs **0.45/kWh** and Rs **0.45/kWh** for the months of July, August and September, 2019 respectively. Further, 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. **0.47/kWh**.

9.6 The following the Table shows the FAC for Agriculture category during the months of July, August and September, 2019:

Month	Units	MSEDCL's claim	Approved by the Commission
		Ag	Ag
July, 2019	Rs. Crore	97.94	97.94
August, 2019	Rs. Crore	(133.60)	90.66
September, 2019	Rs. Crore	(57.50)	94.80
<b>Total</b>	<b>Rs. Crore</b>	<b>(93.16)</b>	<b>283.40</b>

9.7 From the Table above, MSEDCL has to recover total FAC of Rs. **283.40** Crore to Agriculture consumers. However, MSEDCL has computed a refund of Rs. **(93.16)** Crore mainly due to re-allocation of FAC from April, 2018 to June, 2019. As the Commission has not considered the adjustment due to re-allocation of FAC amount, there is under recovery of **Rs. 376.56 Crore** (i.e., Rs. 283.40 Cr – Rs (93.16) Cr).

9.8 Considering the refund of Rs. (558.72) Crore with regards to Non-Agriculture category and recovery of Rs. 376.56 Crore with regards to Agriculture category, the net refund of FAC stands at Rs. (182.16) Crore for Q2 of FY 2019-20.

9.9 Further, FY 2019-20 is already over and provisional True-up of FY 2019-20 has also been done in recent MYT Order dated 30 March, 2020. The rationale for post facto approval of Q2 of FY 2019-20 is only to carry forward the allowance or disallowance to next quarter and subsequently to Q4 of FY 2019-20.

## 10 Recovery from Consumers:

- 10.1 Regulation 10.9 of MERC MYT Regulations, 2015 provides for methodology of recovery of FAC charge from each category of consumers. The relevant extract is reproduced as below.

*“10.9 The ZFAC per kWh for a particular Tariff category/sub-category/consumption slab shall be computed as per the following formula: —*

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

*Where:*

*ZFAC Cat = ZFAC component for a particular Tariff category/sub-category/consumption slab in ‘Rupees per kWh’ terms;*

*k = Average Billing Rate / ACOS;*

*Average Billing Rate = Average Billing Rate for a particular Tariff category/sub-category/consumption slab under consideration in ‘Rupees per kWh’ as approved by the Commission in the Tariff Order:*

*Provided that the Average Billing Rate for the unmetered consumers shall be based on the estimated sales to such consumers, computed in accordance with such methodology as may be stipulated by the Commission:*

*ACOS = Average Cost of Supply in ‘Rupees per kWh’ as approved for recovery by the Commission in the Tariff Order:*

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

*Provided further that any under-recovery in the ZFAC on account of such ceiling shall be carried forward and shall be recovered by the Distribution Licensee over such future period as may be directed by the Commission....”*

- 10.2 The Commission has worked out FAC per unit for each category of consumer based on the formula provided in the above Regulations. The Commission observed that there is an under recovery of ZFAC in absolute terms on considering category wise per unit FAC worked out and category wise actual sales for the month of July, 2019 to September, 2019.
- 10.3 The following table shows per unit ZFAC to be charged to the consumers of MSEDCL in the billing month, i.e., July, August and September, 2019.

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

Sr. No.	Categories	ZFAC to be levied in billing month of July'19 (Rs./kWh)	ZFAC to be levied in billing month of Aug'19 (Rs./kWh)	ZFAC to be levied in billing month of Sept'19 (Rs./kWh)
	<b>LT Category</b>			
<b>1</b>	<b>Domestic (LT-I)</b>			
A	BPL (0-30 Units)	0.1086	0.1854	0.1864
B	Consumption > 30 Units per month			
I	1-100 Units	0.2861	0.4884	0.4911
Ii	101-300 Units	0.4834	0.8253	0.8298
Iii	301-500 Units	0.6134	1.0473	1.0529
Iv	500-1000 Units	0.6823	1.1649	1.1712
V	Above 1000 Units	0.7236	1.2353	1.2420
<b>2</b>	<b>Non Domestic (LT-2)</b>			
A	0-20 KW			
A	0-200 Units	0.4824	0.8235	0.8280
B	Above 200 units	0.6468	1.1043	1.1103
B	>20-50 KW	0.7199	1.2291	1.2358
C	>50 KW	0.8766	1.4965	1.5046
<b>3</b>	<b>Public Water Works (LT-III)</b>			
A	0-20 KW	0.1973	0.3369	0.3387
B	20-40 KW	0.2694	0.4599	0.4624
C	above 40 kw	0.3456	0.5900	0.5932
<b>4</b>	<b>Agriculture (LT-IV)</b>			
A	Unmetered Tariff			
1	AG unmetered Pump set			
	Zone 1			
	A) 0-5 HP	0.0000	0.0000	-30.5782
	B) HP -7.5 HP	0.0000	0.0000	-32.3356
	C) Above 7.5 HP	0.0000	0.0000	-35.2880
2	Zone 2			
	A) 0-5 HP	0.0000	0.0000	-14.2995
	B) HP -7.5 HP	0.0000	0.0000	-15.2528
	C) Above 7.5 HP	0.0000	0.0000	-17.0005
B	Metered Tariff (Pumpsets)	0.0000	0.0000	-0.2053
C	Metered Tariff (Other)	0.2981	0.5089	0.5117
<b>5</b>	<b>LT Industries (LT-V)</b>			
<b>A</b>	<b>Power Loom</b>			
I	0-20 KW	0.3211	0.5481	0.5511
Ii	Above 20 KW	0.4056	0.6925	0.6963
<b>B</b>	<b>General</b>			

Sr. No.	Categories	ZFAC to be levied in billing month of July'19 (Rs./kWh)	ZFAC to be levied in billing month of Aug'19 (Rs./kWh)	ZFAC to be levied in billing month of Sept'19 (Rs./kWh)
I	0-20 KW	0.3550	0.6061	0.6094
Ii	Above 20 KW	0.4975	0.8494	0.8540
<b>6</b>	<b>Street Light (LT-VI)</b>			
A	Grampanchayat A, B & C Class Municipal Council	0.3258	0.5562	0.5592
B	Municipal corporation Area	0.4056	0.6925	0.6963
<b>7</b>	<b>Temporary Connection (LT-VII)</b>			
A	Temporary Connection (Religious)	0.2908	0.4964	0.4991
B	Temporary Connection (Other Purposes)	0.8056	1.3752	1.3827
<b>8</b>	<b>Advertising and Hording (LT-VIII)</b>	0.9423	1.6088	1.6175
<b>9</b>	<b>Crematorium &amp; Burial (LT-IX)</b>	0.2631	0.4492	0.4516
<b>10</b>	<b>Public Services ( LT X)</b>			
<b>A</b>	<b>Government</b>			
A	0-20 kw			
I	0-200 units	0.3341	0.5704	0.5735
Ii	> 200 units	0.3968	0.6774	0.6811
B	>20 -50 kw	0.4432	0.7567	0.7608
C	>50 kw	0.4813	0.8218	0.8262
<b>B</b>	<b>Others</b>			
A	0-20 KW			
I	0-200 Units	0.3461	0.5909	0.5941
Ii	Above 200 units	0.4845	0.8271	0.8316
B	>20-50 KW	0.5189	0.8859	0.8907
C	>50 KW	0.5351	0.9136	0.9185

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

Sr. No.	Categories	ZFAC to be levied in billing month of July'19 (Rs./kWh)	ZFAC to be levied in billing month of Aug'19 (Rs./kWh)	ZFAC to be levied in billing month of Sept'19 (Rs./kWh)
---------	------------	---	--	---

Sr. No.	Categories	ZFAC to be levied in billing month of July'19 (Rs./kWh)	ZFAC to be levied in billing month of Aug'19 (Rs./kWh)	ZFAC to be levied in billing month of Sept'19 (Rs./kWh)
	<b>HT Category</b>			
<b>1</b>	<b>HT Category – EHV (66 kV &amp; Above)</b>			
A	HT I(A): HT - Industry (General)	0.4114	0.7023	0.7061
B	HT I(B): HT - Industry (Seasonal)	0.4401	0.7513	0.7554
C	HT II: HT – Commercial	0.6771	1.1560	1.1623
D	HT III: HT - Railways/Metro/Monorail	0.4354	0.7433	0.7474
E	HT IV: HT - Public Water Works (PWW)	0.3467	0.5918	0.5950
F	HT V(A): HT - Agricultural – Pumpsets	0.2140	0.3654	0.3674
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	0.0000	0.0000	0.0000
<b>2</b>	<b>HT Category –33 kV</b>			
A	HT I(A): HT - Industry (General)	0.4150	0.7086	0.7124
B	HT I(B): HT - Industry (Seasonal)	0.4479	0.7647	0.7689
C	HT II: HT – Commercial	0.6818	1.1640	1.1703
D	HT III: HT - Railways/Metro/Monorail	0.4370	0.7460	0.7501
E	HT IV: HT - Public Water Works (PWW)	0.3675	0.6275	0.6309
F	HT V(A): HT - Agricultural – Pumpsets	0.2182	0.3726	0.3746
G	HT V(B): Agricultural – Others	0.2856	0.4875	0.4902
H	HT VI: HT - Group Housing Society (Residential)	0.3628	0.6194	0.6228
I	HT VIII (A): HT - Temporary Supply Religious (TSR)	0.0000	0.0000	0.0000
J	HT VIII(B): HT - Temporary Supply Others (TSO)	0.6975	1.1907	1.1972
K	HT IX(A): HT - Public Services-Government	0.4761	0.8128	0.8173
L	HT IX(B): HT - Public Services-Others	0.5738	0.9795	0.9848
<b>3</b>	<b>HT Category –22 kV</b>			
A	HT I(A): HT - Industry (General)	0.4344	0.7415	0.7456
B	HT I(B): HT - Industry (Seasonal)	0.0000	0.0000	0.0000
C	HT II: HT – Commercial	0.6771	1.1560	1.1623
D	HT III: HT - Railways/Metro/Monorail	0.4391	0.7496	0.7536
E	HT IV: HT - Public Water Works (PWW)	0.3931	0.6711	0.6748
F	HT V(A): HT - Agricultural – Pumpsets	0.2255	0.3850	0.3871
G	HT V(B): Agricultural – Others	0.3002	0.5125	0.5153

Sr. No.	Categories	ZFAC to be levied in billing month of July'19 (Rs./kWh)	ZFAC to be levied in billing month of Aug'19 (Rs./kWh)	ZFAC to be levied in billing month of Sept'19 (Rs./kWh)
H	HT VI: HT - Group Housing Society (Residential)	0.3665	0.6257	0.6291
I	HT VIII (A): HT - Temporary Supply Religious (TSR)	0.0000	0.0000	0.0000
J	HT VIII(B): HT - Temporary Supply Others (TSO)	0.7001	1.1952	1.2017
K	HT IX(A): HT - Public Services-Government	0.4803	0.8200	0.8244
L	HT IX(B): HT - Public Services-Others	0.5753	0.9822	0.9875
<b>4</b>	<b>HT Category – 11 kV</b>			
A	HT I(A): HT - Industry (General)	0.5262	0.8984	0.9033
B	HT I(B): HT - Industry (Seasonal)	0.5894	1.0063	1.0117
C	HT II: HT - Commercial	0.8322	1.4207	1.4284
D	HT III: HT - Railways/Metro/Monorail	0.5440	0.9287	0.9338
E	HT IV: HT - Public Water Works (PWW)	0.4156	0.7095	0.7133
F	HT V(A): HT - Agricultural - Pumpsets	0.2736	0.4670	0.4696
G	HT V(B): Agricultural - Others	0.3247	0.5544	0.5574
H	HT VI: HT - Group Housing Society (Residential)	0.4626	0.7897	0.7940
I	HT VIII (A): HT - Temporary Supply Religious (TSR)	0.0000	0.0000	0.0000
J	HT VIII(B): HT - Temporary Supply Others (TSO)	0.9267	1.5820	1.5906
K	HT IX(A): HT - Public Services-Government	0.5393	0.9207	0.9257
L	HT IX(B): HT - Public Services-Others	0.6959	1.1881	1.1945

## 11 Summary

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

Particular	Month	Claimed	Approved	Remarks
FAC (Rs. Cr.) For AG categories	July	97.94	97.94	MSEDCL claimed Rs. 1100.61 Crores, however approved Rs. 918.45 Crores.
	August	-133.60	90.66	
	September	-57.50	94.80	
FAC (Rs. Cr.) For Non-AG categories	July	287.95	221.76	
	August	455.59	168.77	
	September	450.23	244.52	

Particular	Month	Claimed	Approved	Remarks
Total FAC (Rs Cr.)	July	385.88	319.70	Hence, Rs. 182.16 Crores refundable
	August	321.99	259.43	
	September	392.74	339.32	
Q2 FAC	<b>Total</b>	1,100.61	918.45	
FAC per Unit For AG categories	July	0.02	0.465	
	August			
	September			
FAC per Unit For Non-AG categories	July	0.418	0.322	
	August	0.705	0.261	
	September	0.707	0.384	

11.2 MSEDCL has computed total FAC of Rs. 1100.61 Cr. against which the Commission has approved Rs. 918.45 Cr. thus Rs. 182.16 Cr. is disallowed. Since the recovery of this amount is already done, the above adjustment will be rolled over in next FAC approvals (i.e., FAC of Q3 of FY 2019-20) till Q4 of FY 2019-20.