

## CHAPTER-5

### ENERGY SALES PROJECTIONS FOR FY-19

In the MYT filing for the control period from Fy-17 to Fy-19, MESCOM has projected the category-wise installations and sales based on mixed CAGR method. As the factors affecting the actual consumption are numerous and often beyond the control of the licensee, it needs to reconcile the projections considering the actuals in immediately preceding year. Accordingly, the projections in respect of installations and energy sales are revised for Fy-19.

The inputs considered for projection of sales has been detailed in the foregoing paragraphs.

#### 5.1 ENERGY SALES PROJECTIONS:

The criteria applied for projection of number of installations and energy sales for each of the tariff categories are detailed in the foregoing paras.

##### 5.1.1 LT-1: Bhagyajyothi & Kutirajyothi

In the Tariff Order 2016, Hon'ble Commission has approved the number of installations and energy sales for FY-19 under LT-1 category as 1,70,178 and 16.01 MU, respectively. These numbers are excluding of those installations which are consuming more than 18 units per month. The Hon'ble Commission has included the installations consuming more than 18 units / month under LT-2a category. However, GOK in their order No.EN 12 PSR 2017 dated 29-05-2017 has increased the consumption limit in respect of BJ/KJ installations from 18 units per month to 40 units per month with effect from 01-04-2017.

The trend in number of installations as at the end of the year FY-17 is indicating a negative growth and hence, MESCOM has proceeded to retain the number of installations existing as at the end of FY-17 for FY-18 and FY-19.



But, in respect of energy sales, the 'consumption upto 18 unit slab' is indicating an increase of 2.34% whereas consumption above 18 units is indicating a negative growth with reference to 3 year CAGR from FY-15 to FY-17. As such, MESCOM has considered a growth of 2.34% for 'consumption upto 18 unit slab' only and for the remaining installations consumption recorded in the year FY-17 is retained for FY-18 and FY-19 also.

With the above, the sales estimation for LT-1 category has been made and detailed below.

**No. of installations (LT-1: Consumption upto 40 units):**

Year	Particulars	Number of Installations
FY-15 (Actual)	Installations with consumption upto 18 units	141293
	Installations with consumption above 18 units	54050
	<b>TOTAL:</b>	<b>195343</b>
FY-16 (Actual)	Installations with consumption upto 18 units	139044
	Installations with consumption above 18 units	56589
	<b>TOTAL:</b>	<b>195633</b>
FY-17 (Actual)	Installations with consumption upto 18 units	143049
	Installations with consumption above 18 units	50323
	<b>TOTAL:</b>	<b>193372</b>
<b>FY-18 (Projection)</b>	<b>Installations with consumption upto 40 units</b>	<b>193372</b>
<b>FY-19 (Projection)</b>	<b>Installations with consumption upto 40 units</b>	<b>193372</b>

**Energy Sales (LT-1: Consumption upto 40 units):**

Year	Particulars	MU
FY-15 (Actual)	Installations with consumption upto 18 units	13.30
	Installations with consumption above 18 units	29.00
	<b>TOTAL:</b>	<b>42.30</b>
FY-16 (Actual)	Installations with consumption upto 18 units	13.78
	Installations with consumption above 18 units	27.86
	<b>TOTAL:</b>	<b>41.64</b>
FY-17 (Actual)	Installations with consumption upto 18 units	13.93
	Installations with consumption above 18 units	27.03
	<b>TOTAL:</b>	<b>40.96</b>
<b>3 year CAGR</b>	<b>Installations with consumption upto 18 units</b>	<b>2.34%</b>
<b>3 year CAGR</b>	<b>Installations with consumption above 18 units</b>	<b>(-)3.46%</b>
<b>FY-18 (Projection)</b>	<b>Installations with consumption upto 40 units</b>	<b>41.29</b>
<b>FY-19 (Projection)</b>	<b>Installations with consumption upto 40 units</b>	<b>41.62</b>

**5.1.2 LT-2a: Lighting/combined lighting, heating & motive power of residential houses.**

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-2a: Number of installations:**

Year	LT-2a(i) Urban	LT-2a(ii) Rural	TOTAL
FY-13 (Actual)	489048	783844	1272892
FY-14 (Actual)	511774	807836	1319610
FY-15 (Actual)	580828	780907	1361735
FY-16 (Actual)	599891	806084	1405975
<b>FY-17 (Approved in TO-2016)</b>			<b>1516897 (*)</b>
FY-17 (Actual)	571650	880793	1452443
<b>5 year CAGR</b>	<b>3.98%</b>	<b>2.96%</b>	
<b>FY-18 (Projection)</b>	<b>594402</b>	<b>906864</b>	<b>1501266</b>
<b>FY-19 (Projection)</b>	<b>618059</b>	<b>933707</b>	<b>1551766</b>
<b>Approved in Tariff Order 2017 for FY-18</b>			<b>1509300</b>
<b>Approved in Tariff Order 2016 for FY-19</b>			<b>1633970 (*)</b>
<b>(*) includes BJ/KJ installations consuming more than 18 units / month</b>			

For projection of energy sales for FY-19 MESCOM has considered 3 year CAGR from FY-15 to FY-17.

**LT-2a: Energy Sales (MU):**

Year	LT-2a(i) Urban	LT-2a(ii) Rural	TOTAL
FY-13 (Actual)	558.91	500.45	1059.36
FY-14 (Actual)	600.94	528.04	1128.98
FY-15 (Actual)	637.82	555.08	1192.90
FY-16 (Actual)	687.25	577.45	1264.70
<b>FY-17 (Approved in TO-2016)</b>			<b>1384.25 (*)</b>
FY-17 (Actual)	684.03	608.21	1292.24
<b>3 year CAGR</b>	<b>3.56%</b>	<b>4.68%</b>	
<b>FY-18 (Projection)</b>	<b>708.38</b>	<b>636.67</b>	<b>1345.05</b>
<b>FY-19 (Projection)</b>	<b>733.60</b>	<b>666.47</b>	<b>1400.07</b>
<b>Approved in Tariff Order 2017 for FY-18</b>			<b>1420.25</b>
<b>Approved in Tariff Order 2016 for FY-19</b>			<b>1568.35 (*)</b>
<b>(*) includes BJ/KJ installations consuming more than 18 units / month</b>			



## 5.1.3

**LT-2b: Private professional and other private educational institutions.**

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-2b: Number of installations:**

Year	LT-2b(i) Urban	LT-2b(ii) Rural	TOTAL
FY-13 (Actual)	1456	1459	2915
FY-14 (Actual)	1503	1507	3010
FY-15 (Actual)	1539	1583	3122
FY-16 (Actual)	1569	1641	3210
<b>FY-17 (Approved in TO-2016)</b>			<b>3359</b>
FY-17 (Actual)	1636	1716	3352
<b>5 year CAGR</b>	<b>2.96%</b>	<b>4.14%</b>	
<b>FY-18 (Projection)</b>	<b>1684</b>	<b>1787</b>	<b>3471</b>
<b>FY-19 (Projection)</b>	<b>1734</b>	<b>1861</b>	<b>3595</b>
<b>Approved in Tariff Order 2017 for FY-18</b>			<b>3435</b>
<b>Approved in Tariff Order 2016 for FY-19</b>			<b>3614</b>

For projection of energy sales for FY-19 MESCOM has considered 3 year CAGR from FY-15 to FY-17.

**LT-2b: Energy Sales (MU):**

Year	LT-2b(i) Urban	LT-2b(ii) Rural	TOTAL
FY-13 (Actual)	6.10	3.37	9.47
FY-14 (Actual)	7.08	3.64	10.72
FY-15 (Actual)	7.41	4.06	11.47
FY-16 (Actual)	8.80	4.88	13.68
<b>FY-17 (Approved in TO-2016)</b>			<b>12.94</b>
FY-17 (Actual)	8.78	5.04	13.82
<b>3 year CAGR</b>	<b>8.85%</b>	<b>11.42%</b>	
<b>FY-18 (Projection)</b>	<b>9.56</b>	<b>5.62</b>	<b>15.18</b>
<b>FY-19 (Projection)</b>	<b>10.41</b>	<b>6.26</b>	<b>16.67</b>
<b>Approved in Tariff Order 2017 for FY-18</b>			<b>17.48</b>
<b>Approved in Tariff Order 2016 for FY-19</b>			<b>15.42</b>

5.1.4

**LT-3: Commercial Lighting, Heating & Motive Power.**

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-3: Number of installations:**

Year	LT-3(i) Urban	LT-3(ii) Rural	TOTAL
FY-13 (Actual)	98526	68613	167139
FY-14 (Actual)	102713	71682	174395
FY-15 (Actual)	106545	75739	182284
FY-16 (Actual)	112027	78077	190104
<b>FY-17 (Approved in TO-2016)</b>			<b>198949</b>
FY-17 (Actual)	115738	81932	197670
<b>5 year CAGR</b>	<b>4.11%</b>	<b>4.54%</b>	
<b>FY-18 (Projection)</b>	<b>120495</b>	<b>85652</b>	<b>206147</b>
<b>FY-19 (Projection)</b>	<b>125447</b>	<b>89541</b>	<b>214988</b>
<b>Approved in Tariff Order 2017 for FY-18</b>			<b>206424</b>
<b>Approved in Tariff Order 2016 for FY-19</b>			<b>217182</b>

The past growth trend in energy sales i.e. CAGR for 3 years, 5 years and 7 years are in the range of 5% to 6%. However, it is observed that in the year FY-17 the growth rate is only 2.92% under urban category and 5.58% under rural category, with reference to FY-16 sales. Hence, for projection of energy sales for FY-19 MESCOM has considered 2 year CAGR from FY-16 to FY-17.

**LT-3: Energy Sales (MU):**

Year	LT-3(i) Urban	LT-3(ii) Rural	TOTAL
FY-13 (Actual)	183.85	87.59	271.44
FY-14 (Actual)	188.06	92.85	280.91
FY-15 (Actual)	205.99	98.70	304.69
FY-16 (Actual)	223.23	106.64	329.87
<b>FY-17 (Approved in TO-2016)</b>			<b>341.71</b>
FY-17 (Actual)	229.75	112.59	342.34
<b>2 year CAGR</b>	<b>2.92%</b>	<b>5.58%</b>	
<b>FY-18 (Projection)</b>	<b>236.46</b>	<b>118.87</b>	<b>355.33</b>
<b>FY-19 (Projection)</b>	<b>243.36</b>	<b>125.50</b>	<b>368.86</b>
<b>Approved in Tariff Order 2017 for FY-18</b>			<b>375.65</b>
<b>Approved in Tariff Order 2016 for FY-19</b>			<b>380.06</b>

### 5.1.5 LT-4a: IP Sets upto & inclusive of 10 HP.

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-4a: Number of installations:**

Year	LT-4a
FY-13 (Actual)	238638
FY-14 (Actual)	247139
FY-15 (Actual)	260399
FY-16 (Actual)	278171
<b>FY-17 (Approved in TO-2016)</b>	<b>292860</b>
FY-17 (Actual)	291129
<b>5 year CAGR</b>	<b>5.10%</b>
<b>FY-18 (Projection)</b>	<b>304087</b>
<b>FY-19 (Projection)</b>	<b>317045</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>313084</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>329368</b>

For projection of energy sales MESCOM has considered the specific energy consumption of FY-17. In the year FY-17 actual IP set consumption is 1628.06 MU for 2,91,129 numbers of installations. This works out to a specific consumption of 5720 units per annum per IP. Hence, for projection of energy sales under this category MESCOM has considered specific consumption of 5720 units per installation.

**LT-4a: Energy Sales:**

Particulars	
Energy Sales in FY-13 (Actuals)	1060.21 MU
Energy Sales in FY-14 (Actuals)	1122.69 MU
Energy Sales in FY-15 (Actuals)	1086.18 MU
Energy Sales in FY-16 (Actuals)	1197.43 MU
<b>Approved Energy Sales for FY-17 in TO-2016</b>	<b>1217.69 MU</b>
Energy Sales in FY-17 (Actuals)	1628.06 MU
Midyear number of installations for FY-17	2,84,650
Specific Consumption for FY-17	5720 Units
Midyear number of installations for FY-18 (Projection)	2,97,608
Midyear number of installations for FY-19 (Projection)	3,10,566
<b>Energy Sales for FY-18 (Projection)</b>	<b>1702.32 MU</b>
<b>Energy Sales for FY-19 (Projection)</b>	<b>1776.44 MU</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>1352.32 MU</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>1369.48 MU</b>

**5.1.6 LT-4b: IP Sets above 10 HP.**

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-4b: Number of installations:**

Year	LT-4b
FY-13 (Actual)	176
FY-14 (Actual)	183
FY-15 (Actual)	181
FY-16 (Actual)	179
<b>FY-17 (Approved in TO-2016)</b>	<b>186</b>
FY-17 (Actual)	245
<b>5 year CAGR</b>	<b>8.62%</b>
<b>FY-18 (Projection)</b>	<b>266</b>
<b>FY-19 (Projection)</b>	<b>289</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>182</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>197</b>

3 year CAGR of energy sales under the category is 0.00% and with reference to FY-16, growth rate is negative. Hence, energy sales of FY-17 is retained for FY-19 also.

**LT-4b: Energy Sales (MU) :**

Year	LT-4b
FY-13 (Actual)	1.08
FY-14 (Actual)	1.12
FY-15 (Actual)	1.21
FY-16 (Actual)	0.92
<b>FY-17 (Approved in TO-2016)</b>	<b>0.89</b>
FY-17 (Actual)	1.21
<b>3 year CAGR</b>	<b>0.00%</b>
<b>FY-18 (Projection)</b>	<b>1.21</b>
<b>FY-19 (Projection)</b>	<b>1.21</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>0.93</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>0.83</b>

**5.1.7 LT-4c(i): Private Horticultural Nurseries, Coffee and Tea plantations of sanctioned load of 10 HP & below.**

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-4c(i): Number of installations:**

Year	LT-4c(i)
FY-13 (Actual)	1994
FY-14 (Actual)	2016
FY-15 (Actual)	2276
FY-16 (Actual)	2576
FY-17 (Actual)	2906
<b>5 year CAGR</b>	<b>9.87%</b>
<b>FY-18 (Projection)</b>	<b>3193</b>
<b>FY-19 (Projection)</b>	<b>3508</b>

For projection of energy sales for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-4c(i): Energy Sales (MU):**

Year	LT-4c(i)
FY-13 (Actual)	3.09
FY-14 (Actual)	2.75
FY-15 (Actual)	2.37
FY-16 (Actual)	3.09
FY-17 (Actual)	4.19
<b>5 year CAGR</b>	<b>7.91%</b>
<b>FY-18 (Projection)</b>	<b>4.52</b>
<b>FY-19 (Projection)</b>	<b>4.88</b>

**5.1.8 LT-4c(ii): Private Horticultural Nurseries, Coffee and Tea plantations of sanctioned load of above 10 HP.**

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-4c(ii): Number of installations:**

Year	LT-4c(ii)
FY-13 (Actual)	657
FY-14 (Actual)	631
FY-15 (Actual)	687
FY-16 (Actual)	720
FY-17 (Actual)	767
<b>5 year CAGR</b>	<b>3.95%</b>
<b>FY-18 (Projection)</b>	<b>797</b>
<b>FY-19 (Projection)</b>	<b>828</b>



For projection of energy sales for FY-19 MESCOM has considered 3 year CAGR from FY-15 to FY-17.

**LT-4c(ii): Energy Sales (MU):**

Year	LT-4c(ii)
FY-13 (Actual)	3.40
FY-14 (Actual)	3.79
FY-15 (Actual)	3.60
FY-16 (Actual)	3.31
FY-17 (Actual)	4.16
<b>3 year CAGR</b>	<b>7.50%</b>
<b>FY-18 (Projection)</b>	<b>4.47</b>
<b>FY-19 (Projection)</b>	<b>4.81</b>

**5.1.9 LT-5: Heating & Motive Power (including lighting) of Industrial Units.**

For projection of number of installations for FY-19 MESCOM has considered 2 year CAGR from FY-16 to FY-17.

Year	Number of installations (LT-5)				Total
	With SL =<5 HP	With SL >5 HP & < 40 HP	With SL =>40 HP & < 67 HP	With SL =>67 HP	
FY-13 (Actual)	10252	10847	1518	181	22798
FY-14 (Actual)	10547	11795	1623	234	24199
FY-15 (Actual)	11423	12637	1677	157	25894
FY-16 (Actual)	12496	13427	1786	150	27859
<b>FY-17 (Approved in TO-2016)</b>					<b>29515</b>
FY-17 (Actual)	12629	14220	1803	141	28793
<b>2 Year CAGR:</b>	<b>1.06%</b>	<b>5.91%</b>	<b>0.95%</b>	<b>(-)6.00%</b>	
FY-18 (Projection)	12763	15060	1820	141	29784
FY-19 (Projection)	12898	15950	1837	141	30826
<b>Approved in Tariff Order 2017 for FY-18</b>					<b>31712</b>
<b>Approved in Tariff Order 2016 for FY-19</b>					<b>33571</b>

For projection of energy sales for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

Year	Energy Sales (MU) (LT-5)				Total
	With SL =<5 HP	With SL >5 HP & < 40 HP	With SL =>40 HP & < 67 HP	With SL =>67 HP	
FY-13 (Actual)	11.22	44.3	56.69	18.78	130.99
FY-14 (Actual)	10.96	46.56	55.2	16.1	128.82
FY-15 (Actual)	11.02	48.41	56.49	15.51	131.43
FY-16 (Actual)	12.15	48.66	61.34	13.32	135.47
<b>FY-17 (Approved in TO-2016)</b>					<b>135.89</b>
FY-17 (Actual)	13.92	48.91	61.00	12.95	136.78
<b>5 Year CAGR:</b>	<b>5.54%</b>	<b>2.51%</b>	<b>1.85%</b>	<b>(-)8.87%</b>	
FY-18 (Projection)	14.69	50.14	62.13	12.95	139.91
FY-19 (Projection)	15.50	51.40	63.28	12.95	143.13
<b>Approved in Tariff Order 2017 for FY-18</b>					<b>140.55</b>
<b>Approved in Tariff Order 2016 for FY-19</b>					<b>138.48</b>

**5.1.10 LT-6(a): Water Supply & Sewerage pumping installations.**

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-6(a): Number of installations:**

Year	LT-6(a)
FY-13 (Actual)	10622
FY-14 (Actual)	11395
FY-15 (Actual)	12182
FY-16 (Actual)	12630
<b>FY-17 (Approved in TO-2016)</b>	<b>13550</b>
FY-17 (Actual)	13680
<b>5 year CAGR</b>	<b>6.53%</b>
<b>FY-18 (Projection)</b>	<b>14573</b>
<b>FY-19 (Projection)</b>	<b>15525</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>14175</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>15446</b>

For projection of energy sales for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-6(a): Energy Sales (MU):**

Year	LT-6(a)
FY-13 (Actual)	97.46
FY-14 (Actual)	100.38
FY-15 (Actual)	107.63
FY-16 (Actual)	111.93
<b>FY-17 (Approved in TO-2016)</b>	<b>118.39</b>
FY-17 (Actual)	120.53
<b>5 year CAGR</b>	<b>5.46%</b>
<b>FY-18 (Projection)</b>	<b>127.11</b>
<b>FY-19 (Projection)</b>	<b>134.05</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>122.75</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>135.43</b>

**5.1.11 LT-6(b): Public Street Lights.**

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-6(b): Number of installations:**

Year	LT-6(b)
FY-13 (Actual)	14808
FY-14 (Actual)	15632
FY-15 (Actual)	16135
FY-16 (Actual)	17263
<b>FY-17 (Approved in TO-2016)</b>	<b>17728</b>
FY-17 (Actual)	19676
<b>5 year CAGR</b>	<b>7.36%</b>
<b>FY-18 (Projection)</b>	<b>21124</b>
<b>FY-19 (Projection)</b>	<b>22679</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>19284</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>20271</b>

For projection of energy sales for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**LT-6(b): Energy Sales (MU):**

Year	LT-6(b)
FY-13 (Actual)	57.48
FY-14 (Actual)	57.25
FY-15 (Actual)	58.19
FY-16 (Actual)	63.97
<b>FY-17 (Approved in TO-2016)</b>	<b>63.10</b>
FY-17 (Actual)	69.38
<b>5 year CAGR</b>	<b>4.82%</b>
<b>FY-18 (Projection)</b>	<b>72.72</b>
<b>FY-19 (Projection)</b>	<b>76.23</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>69.70</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>66.66</b>

**5.1.12 LT-7: Temporary Power Supply of all categories including Hoarding & Advertisement boards.**

Compared to FY-16, the growth rate in respect of both number of installations and energy sales is negative in FY-17. Hence, the number of installations that exists as at the end of March-2017 and consumption in the year FY-17 is maintained for FY-19.

Year	No. of Installations	Energy Sales (MU)
FY-13 (Actual)	10534	27.22
FY-14 (Actual)	11988	18.05
FY-15 (Actual)	12802	19.12
FY-16 (Actual)	16506	19.63
<b>FY-17 (Approved in TO-2016)</b>	<b>12802</b>	<b>19.12</b>
FY-17 (Actual)	14153	19.40
<b>FY-18 (Projection)</b>	<b>14153</b>	<b>19.40</b>
<b>FY-19 (Projection)</b>	<b>14153</b>	<b>19.40</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>16506</b>	<b>19.63</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>12802</b>	<b>19.12</b>

**5.1.13 HT-1: Water Supply, Drainage / Sewerage water treatment plant and Sewerage pumping installations.**

For projection of number of installations for FY-19 MESCOM has considered 3 year CAGR from FY-15 to FY-17.

**HT-1: Number of installations:**

Year	HT-1
FY-13 (Actual)	55
FY-14 (Actual)	62
FY-15 (Actual)	70
FY-16 (Actual)	78
<b>FY-17 (Approved in TO-2016)</b>	<b>80</b>
FY-17 (Actual)	88
<b>3 year CAGR</b>	<b>12.12%</b>
<b>FY-18 (Projection)</b>	<b>99</b>
<b>FY-19 (Projection)</b>	<b>111</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>91</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>91</b>

For projection of energy sales for FY-19 MESCOM has considered 3 year CAGR from FY-15 to FY-17.

**HT-1: Energy Sales (MU):**

Year	HT-1
FY-13 (Actual)	77.74
FY-14 (Actual)	78.20
FY-15 (Actual)	83.35
FY-16 (Actual)	85.01
<b>FY-17 (Approved in TO-2016)</b>	<b>87.38</b>
FY-17 (Actual)	86.42
<b>3 year CAGR</b>	<b>1.82%</b>
<b>FY-18 (Projection)</b>	<b>87.99</b>
<b>FY-19 (Projection)</b>	<b>89.59</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>88.26</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>91.94</b>

**5.1.14 HT-2a: Industries.**

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**HT-2a: Number of installations:**

Year	HT-2a
FY-13 (Actual)	588
FY-14 (Actual)	623
FY-15 (Actual)	661
FY-16 (Actual)	725
<b>FY-17 (Approved in TO-2016)</b>	<b>771</b>
FY-17 (Actual)	784
<b>5 year CAGR</b>	<b>7.46%</b>
<b>FY-18 (Projection)</b>	<b>842</b>
<b>FY-19 (Projection)</b>	<b>905</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>829</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>867</b>

In the Tariff Order 2017, Hon'ble Commission while reviewing the Annual Performance for FY-16 had taken note of the reduced energy sales under HT-2a category and had also based the energy sales estimates for FY-18 considering the analysis of open access impact. In the year FY-17 also the trend of reduction in energy sales continued under the category. As such, the data in respect of sales to HT-2a category along with the consumption from open access / wheeling during the period from 2014-15 to 2016-17 are furnished below;

Year	Energy Procured from MESCOM	Open Access + Wheeled Energy	Total
2014-15	710.79	62.92	773.71
2015-16	600.27	120.12	720.39
2016-17	566.60	241.47	808.07

In view of the above, MESCOM maintained the consumption in the year FY-17 for FY-19 also.

**HT-2a: Energy Sales (MU):**

Year	HT-2a
FY-13 (Actual)	590.68
FY-14 (Actual)	686.45
FY-15 (Actual)	704.86
FY-16 (Actual)	586.41
<b>FY-17 (Approved in TO-2016)</b>	<b>805.52</b>
FY-17 (Actual)	548.29
<b>FY-18 (Projection)</b>	<b>548.29</b>
<b>FY-19 (Projection)</b>	<b>548.29</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>614.81</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>920.56</b>

**5.1.15 HT-2b: Commercial.**

For projection of number of installations for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**HT-2b: Number of installations:**

Year	HT-2b
FY-13 (Actual)	500
FY-14 (Actual)	521
FY-15 (Actual)	539
FY-16 (Actual)	577
<b>FY-17 (Approved in TO-2016)</b>	<b>577</b>
FY-17 (Actual)	624
<b>5 year CAGR</b>	<b>5.69%</b>
<b>FY-18 (Projection)</b>	<b>660</b>
<b>FY-19 (Projection)</b>	<b>698</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>638</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>585</b>

For the category, CAGR for 3 years is indicating a growth rate of 9.97% whereas compared to FY-16 the growth rate is 3.33%. Hence, for projection of energy sales for FY-19 MESCOM has considered a growth rate of 3.33%.

**HT-2b: Energy Sales (MU):**

Year	HT-2b
FY-13 (Actual)	190.86
FY-14 (Actual)	152.46
FY-15 (Actual)	153.86
FY-16 (Actual)	180.07
<b>FY-17 (Approved in TO-2016)</b>	<b>168.53</b>
FY-17 (Actual)	186.06
<b>2 year CAGR</b>	<b>3.33%</b>
<b>FY-18 (Projection)</b>	<b>192.26</b>
<b>FY-19 (Projection)</b>	<b>198.66</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>196.74</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>184.60</b>

**5.1.16 HT-2c: Hospitals, Educational Institutions and Hostels.**

In respect of this category consumption growth rate with reference to 3 year CAGR is 2.76% and when compared to FY-16 growth rate in FY-17 is negative. Hence, the number of installations existing as at the end of March-2017 and the energy consumption in FY-17 is maintained for FY-19 also.

**HT-2c: Number of installations:**

Year	HT-2c
FY-13 (Actual)	140
FY-14 (Actual)	202
FY-15 (Actual)	227
FY-16 (Actual)	250
<b>FY-17 (Approved in TO-2016)</b>	<b>277</b>
FY-17 (Actual)	264
<b>FY-18 (Projection)</b>	<b>264</b>
<b>FY-19 (Projection)</b>	<b>264</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>309</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>327</b>

**HT-2c: Energy Sales (MU):**

Year	HT-2c
FY-13 (Actual)	76.00
FY-14 (Actual)	117.65
FY-15 (Actual)	146.65
FY-16 (Actual)	155.05
<b>FY-17 (Approved in TO-2016)</b>	<b>180.37</b>
FY-17 (Actual)	154.85
<b>FY-18 (Projection)</b>	<b>154.85</b>
<b>FY-19 (Projection)</b>	<b>154.85</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>204.34</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>214.09</b>

**5.1.17 HT-3a: Lift Irrigation Schemes / Lift Irrigation Societies.**

Under this category, growth rate both in respect of number of installations and energy sales is inconsistent. Hence, the number of installations existing as at the end of March-2017 and the energy consumption in FY-17 is maintained for FY-19 also.

**HT-3a: Number of installations:**

Year	HT-3a
FY-13 (Actual)	13
FY-14 (Actual)	12
FY-15 (Actual)	21
FY-16 (Actual)	21
FY-17 (Actual)	23
<b>FY-18 (Projection)</b>	<b>23</b>
<b>FY-19 (Projection)</b>	<b>23</b>

**HT-3a: Energy Sales (MU):**

Year	HT-3a
FY-13 (Actual)	19.24
FY-14 (Actual)	24.66
FY-15 (Actual)	22.97
FY-16 (Actual)	8.32
FY-17 (Actual)	15.71
<b>FY-18 (Projection)</b>	<b>15.71</b>
<b>FY-19 (Projection)</b>	<b>15.71</b>

**5.1.18 HT-3b: Irrigation / Agricultural / Horticultural forms.**

Under this category, growth rate both in respect of number of installations and energy sales is inconsistent. Hence, the number of installations existing as at the end of March-2017 and the energy consumption in FY-17 is maintained for FY-19 also.

**HT-3b: Number of installations:**

Year	HT-3b
FY-13 (Actual)	2
FY-14 (Actual)	4
FY-15 (Actual)	3
FY-16 (Actual)	3
FY-17 (Actual)	3
<b>FY-18 (Projection)</b>	<b>3</b>
<b>FY-19 (Projection)</b>	<b>3</b>



**HT-3b: Energy Sales (MU):**

Year	HT-3b
FY-13 (Actual)	0.15
FY-14 (Actual)	0.32
FY-15 (Actual)	0.25
FY-16 (Actual)	0.29
FY-17 (Actual)	0.32
<b>FY-18 (Projection)</b>	<b>0.32</b>
<b>FY-19 (Projection)</b>	<b>0.32</b>

**5.1.19 HT-4: Residential Apartments & Colonies.**

For projection of number of installations for FY-19 MESCOM has considered 3 year CAGR from FY-15 to FY-19.

**HT-4: Number of installations:**

Year	HT-4
FY-13 (Actual)	52
FY-14 (Actual)	46
FY-15 (Actual)	44
FY-16 (Actual)	46
<b>FY-17 (Approved in TO-2016)</b>	<b>47</b>
FY-17 (Actual)	52
<b>3 year CAGR</b>	<b>8.71%</b>
<b>FY-18 (Projection)</b>	<b>57</b>
<b>FY-19 (Projection)</b>	<b>62</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>46</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>51</b>

For projection of energy sales for FY-19 MESCOM has considered 5 year CAGR from FY-13 to FY-17.

**HT-4: Energy Sales (MU):**

Year	HT-4
FY-13 (Actual)	13.84
FY-14 (Actual)	14.27
FY-15 (Actual)	14.40
FY-16 (Actual)	16.90
<b>FY-17 (Approved in TO-2016)</b>	<b>15.56</b>
FY-17 (Actual)	18.82
<b>5 year CAGR</b>	<b>7.99%</b>
<b>FY-18 (Projection)</b>	<b>20.32</b>
<b>FY-19 (Projection)</b>	<b>21.94</b>
<b>Approved in Tariff Order 2017 for FY-18</b>	<b>18.78</b>
<b>Approved in Tariff Order 2016 for FY-19</b>	<b>16.82</b>

**5.1.20 HT-5: Temporary Supply.**

Under this category, growth rate both in respect of number of installations and energy sales is inconsistent. Hence, the number of installations existing as at the end of March-2017 and the energy consumption in FY-17 is maintained for FY-19 also.

**HT-5: Number of installations:**

Year	HT-5
FY-13 (Actual)	7
FY-14 (Actual)	20
FY-15 (Actual)	20
FY-16 (Actual)	20
FY-17 (Actual)	16
<b>FY-18 (Projection)</b>	<b>16</b>
<b>FY-19 (Projection)</b>	<b>16</b>

**HT-5: Energy Sales (MU):**

Year	HT-5
FY-13 (Actual)	3.42
FY-14 (Actual)	21.86
FY-15 (Actual)	7.20
FY-16 (Actual)	8.99
FY-17 (Actual)	5.50
<b>FY-18 (Projection)</b>	<b>5.50</b>
<b>FY-19 (Projection)</b>	<b>5.50</b>

**5.1.21 Supply to MSEZ:**

In the Tariff Order 2016, Hon'ble Commission has approved 80.49 MU of sales in respect of MSEZ installations for FY-17. However, the actual consumption is only 18.31 MU. In FY-16 also the consumption was only 13.86 MU. Hence, the energy consumption in FY-17 is maintained for FY-19 also.

**MSEZ: Energy Sales (MU):**

Year	MSEZ
FY-15 (Actual)	8.64
FY-16 (Actual)	13.86
FY-17 (Actual)	18.31
<b>FY-18 (Projection)</b>	<b>18.31</b>
<b>FY-19 (Projection)</b>	<b>18.31</b>

**5.1.22 KPCL and Wheeling Consumption:**

In the year FY-17, KPCL consumption is 5.89 MU and wheeling energy is 81.21 MU. The same quantum has been maintained for FY-19 also.

**5.1.23 Abstract of projected number of installations for different years.**

(Number of installations)

Tariff Category	FY-17		FY-18		FY-19	
	Apprd. In T.O. 2016	Actuals	Apprd. In T.O. 2017	Revised Proj.	Apprd. In T.O. 2016	Revised Proj.
1	2	3	4	5	6	7
LT-1:>18/40	155065	143049	-	-	170178	-
LT-1:≤18 /40 Units	-	50323	209118	193372	-	193372
<b>LT-1 Sub Total:</b>	<b>155065</b>	<b>193372</b>	<b>209118</b>	<b>193372</b>	<b>170178</b>	<b>193372</b>
LT-2a(i) Urban		571650		594402		618059
LT-2a(ii) Rural	1516897	880793	1509300	906864	1633970	933707
<b>LT-2a Sub Total:</b>		<b>1452443</b>		<b>1501266</b>		<b>1551766</b>
LT-2b(i) Urban		1636		1684		1734
LT-2b(ii) Rural	3359	1716	3435	1787	3614	1861
<b>LT-2b Sub Total:</b>		<b>3352</b>		<b>3471</b>		<b>3595</b>
LT-3(i) Urban		115738		120495		125447
LT-3(ii) Rural	198949	81932	206424	85652	217182	89541
<b>LT-3 Sub Total:</b>		<b>197670</b>		<b>206147</b>		<b>214988</b>
LT-4a	292860	291129	313084	304087	329368	317045
LT-4b	186	245	182	266	197	289
LT-4c(i)		2906		3193		3508
LT-4c(ii)	3462	767	3727	797	4207	828
LT-5b: ≤ 5 HP		12629		12763		12898
LT-5b: >5 HP & <40 HP		14220		15060		15950
LT-5b: ≥40 HP & < 67 HP	29515	1803	31712	1820	33571	1837
LT-5b: ≥67 HP		141		141		141
<b>LT-5 Sub Total:</b>		<b>28793</b>		<b>29784</b>		<b>30826</b>
LT-6a	13550	13680	14175	14573	15446	15525
LT-6b	17728	19676	19284	21124	20271	22679
LT-7	12802	14153	16506	14153	12802	14153
<b>TOTAL- LT</b>	<b>2244373</b>	<b>2218186</b>	<b>2326947</b>	<b>2292233</b>	<b>2440806</b>	<b>2368574</b>
HT-1	80	88	91	99	91	111
HT-2a	771	784	829	842	867	905
HT-2b	577	624	638	660	585	698
HT-2c	277	264	309	264	327	264
HT-3a		23		23		23
HT-3b	24	3	32	3	24	3
HT-4	47	52	46	57	51	62
HT-5	20	16	20	16	20	16
<b>TOTAL- HT</b>	<b>1796</b>	<b>1854</b>	<b>1965</b>	<b>1964</b>	<b>1965</b>	<b>2082</b>
<b>TOTAL- LT + HT</b>	<b>2246169</b>	<b>2220040</b>	<b>2328912</b>	<b>2294197</b>	<b>2442771</b>	<b>2370656</b>

5.1.24 Abstract of projected energy sales for different years.

(Energy Sales in MU)

Tariff Category	FY-17		FY-18		FY-19	
	Apprd. In T.O. 2016	Actuals	Apprd. In T.O. 2017	Revised Proj.	Apprd. In T.O. 2016	Revised Proj.
1	2	3	4	5	6	7
LT-1:>18/40	14.26	13.93	-	-	16.01	-
LT-1:=<18 /40 Units	-	27.03	44.92	41.29	-	41.62
<b>LT-1 Sub Total:</b>	<b>14.26</b>	<b>40.96</b>	<b>44.92</b>	<b>41.29</b>	<b>16.01</b>	<b>41.62</b>
LT-2a(i) Urban	1384.25	684.03	1420.25	708.38	1568.35	733.60
LT-2a(ii) Rural		608.21		636.67		666.47
<b>LT-2a Sub Total:</b>	<b>1384.25</b>	<b>1292.24</b>	<b>1420.25</b>	<b>1345.05</b>	<b>1441.69</b>	<b>1400.07</b>
LT-2b(i) Urban	12.94	8.78	17.48	9.56	15.42	10.41
LT-2b(ii) Rural		5.04		5.62		6.26
<b>LT-2b Sub Total:</b>	<b>12.94</b>	<b>13.82</b>	<b>17.48</b>	<b>15.18</b>	<b>15.42</b>	<b>16.67</b>
LT-3(i) Urban	341.71	229.72	375.65	236.46	380.06	243.36
LT-3(ii) Rural		112.59		118.87		125.50
<b>LT-3 Sub Total:</b>	<b>341.71</b>	<b>342.31</b>	<b>375.65</b>	<b>355.33</b>	<b>380.06</b>	<b>368.86</b>
LT-4a	1217.69	1628.06	1352.32	1702.32	1369.48	1776.44
LT-4b	0.89	1.21	0.93	1.21	0.83	1.21
LT-4c(i)	4.81	4.19	7.24	4.52	4.94	4.88
LT-4c(ii)		4.16		4.47		4.81
LT-5b: =< 5 HP	135.89	13.92	140.55	14.69	138.48	15.50
LT-5b: >5 HP & <40 HP		48.91		50.14		51.40
LT-5b: =>40 HP & < 67 HP		61.00		62.13		63.28
LT-5b: =>67 HP		12.95		12.95		12.95
<b>LT-5 Sub Total:</b>		<b>136.78</b>		<b>139.91</b>		<b>143.13</b>
LT-6a	118.39	120.53	122.75	127.11	135.43	134.05
LT-6b	63.10	69.38	69.70	72.72	66.66	76.23
LT-7	19.12	19.40	19.63	19.40	19.12	19.40
<b>TOTAL- LT</b>	<b>3313.38</b>	<b>3673.04</b>	<b>3571.42</b>	<b>3828.51</b>	<b>3714.78</b>	<b>3987.37</b>
HT-1	87.38	86.42	88.26	87.99	91.94	89.59
HT-2a	805.52	548.29	614.81	548.29	920.56	548.29
HT-2b	168.53	186.06	196.74	192.26	184.60	198.66
HT-2c	180.37	154.85	204.34	154.85	214.09	154.85
HT-3a	23.22	15.71	11.26	15.71	23.22	15.71
HT-3b		0.32		0.32		0.32
HT-4	15.56	18.82	18.78	20.32	16.82	21.94
HT-5	7.20	5.50	8.99	5.50	7.20	5.50
<b>TOTAL- HT</b>	<b>1287.78</b>	<b>1015.97</b>	<b>1143.18</b>	<b>1025.24</b>	<b>1458.43</b>	<b>1034.86</b>
<b>MSEZ Supply</b>	<b>83.38</b>	<b>18.31</b>	<b>85.33</b>	<b>18.31</b>	<b>116.88</b>	<b>18.31</b>
<b>KPCL Consumption</b>	<b>10.68</b>	<b>5.89</b>	<b>9.59</b>	<b>5.89</b>	<b>10.68</b>	<b>5.89</b>
<b>Wheeling Energy</b>	-	<b>81.21</b>	-	<b>81.21</b>	-	<b>81.21</b>
<b>TOTAL- LT + HT</b>	<b>4695.22</b>	<b>4794.42</b>	<b>4809.52</b>	<b>4959.16</b>	<b>5300.77</b>	<b>5127.64</b>



**5.2 ENERGY AT INTERFACE POINT AND GENERATION POINT:**

The energy requirement at interface point is arrived at based on approved distribution loss of 11.15% for FY-19.

The energy requirement at generation point is computed based on projected transmission loss approved by the Hon'ble Commission. The projected energy requirement at interface point and generation point is tabulated below.

Year	Energy Sales (MU)	Dist. Loss (%)	Energy at IF point (MU)	MSEZ Supply (MU)	Trans. Loss (%)	Energy at Gen. point (MU)
<b>Fy-17 (Apprd. In TO 2016)</b>	<b>4611.84</b>	<b>11.15%</b>	<b>5190.59</b>	<b>83.38</b>	<b>3.47%</b>	<b>5460.56</b>
Fy-17 (Actuals)	4794.42	11.40%	5411.61	-	4.54%	5668.84
<b>Fy-18 (Apprd. In TO 2017)</b>	<b>4724.19</b>	<b>11.05%</b>	<b>5311.06</b>	<b>85.33</b>	<b>3.37%</b>	<b>5583.87</b>
Fy-18 (Revised Projection)	4959.16	11.25%	5587.79	-	3.37%	5782.67
<b>Fy-19 (Apprd. In TO 2016)</b>	<b>5183.89</b>	<b>10.95%</b>	<b>5821.33</b>	<b>116.88</b>	<b>3.27%</b>	<b>6135.00</b>
Fy-19 (Revised Projection)	5127.64	11.15%	5771.12	-	3.27%	5966.22

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