

CHAPTER-5

ENERGY SALES PROJECTIONS FOR FY24

5.1 In the Tariff Order-2022, Hon'ble Commission has approved the category wise energy sales and number of installations for 06th control period i.e., for FY23, FY24 and FY25 based on mixed CAGR method. However, as the factors affecting the actual consumption are numerous and often beyond the control of the licensee, it needs to revise the projections considering the actuals of the immediately preceding year. Accordingly, the projections in respect of installations and energy sales are revised for FY24. Further, since the figures of FY23 is linearly dependent for the projections of FY24, the approved projections of installations & energy sales for FY23 are also revised and compared.

The inputs considered for the estimations / projections are detailed in the following paragraphs.

5.2 Methodology adopted for projection of number of installations for FY24:

(i) Trend method has been considered for projection of number of installations in respect of the following tariff categories.

First, Trend method has been applied for estimating the number of installations for FY23 duly considering the growth trend during the period from FY20 to FY22. This has been extended to project the number of installations for FY24 duly considering the actuals of FY21 & FY22 and estimations of FY23.

LT-2a(i)	Domestic: Applicable to areas coming under City Municipal Corporations and all areas under Urban Local Bodies.
LT-2a(ii)	Domestic: Applicable to areas under Village Panchayats
LT-2b(i)	Educational Institutions & Hospitals: Applicable to areas coming under City Municipal Corporations and all areas under Urban Local Bodies.
LT-3(i)	Commercial: Applicable to areas coming under City Municipal Corporations and all areas under Urban Local Bodies.
LT-3(ii)	Commercial: Applicable to areas under Village Panchayats
LT-4a	Irrigation Pump Sets: Up to and inclusive of 10 HP.
LT-4c	Irrigation Pump Sets: Applicable to Private Horticultural Nurseries, Coffee, Tea and Rubber Plantations.

LT-5a(i)	Industrial: Applicable to Areas under City Municipal Corporation : Upto 5 HP & below.
LT-5a(ii)	Industrial: Applicable to Areas under City Municipal Corporation : Above 5 HP & below 40 HP.
LT-5a(iii)	Industrial: Applicable to Areas under City Municipal Corporation : 40 HP & above but below 67 HP.
LT-5a(iv)	Industrial: Applicable to Areas under City Municipal Corporation : 67 HP & above but below 100 HP.
LT-5b(i)	Industrial: Applicable to all areas other than those covered under LT-5(a) : Upto 5 HP & below.
LT-5b(ii)	Industrial: Applicable to all areas other than those covered under LT-5(a) : Above 5 HP & below 40 HP.
LT-5b(iii)	Industrial: Applicable to all areas other than those covered under LT-5(a) : 40 HP & above but below 67 HP.
LT-6a	Water Supply
LT-6b	Public Lighting
HT-1	Water Supply, drainage / sewerage water treatment plants, etc.
HT-2a	Industrial
HT-2b	Commercial
HT-2c	Educational Institutions and Hospitals
HT-3ai	Lift Irrigation: Government Departments
HT-4	Residential Apartments and colonies.

- (ii) In respect of the following tariff categories, the number of installations exist at the end of March-2022 has been retained for FY24 since in past three years either there is reduction in numbers or having no growth rate.

LT-1a	Bhagyajyothi / Kutirjyothi: upto 40 units consumption
LT-1a	Bhagyajyothi / Kutirjyothi: Above 40 units consumption
LT-2b(ii)	Educational Institutions & Hospitals: Applicable to areas under Village Panchayats.
LT-4b	Irrigation Pump Sets: Above 10 HP.
LT-5a(v)	Industrial: Applicable to Areas under City Municipal Corporation: 100 HP & above.
LT-5b(iv)	Industrial: Applicable to all areas other than those covered under LT-5(a) : 67 HP & above but below 100 HP.
LT-5b(v)	Industrial: Applicable to all areas other than those covered under LT-5(a) : 100 HP & above.
LT-7a	Applicable to Temporary Power Supply for all purposes.
LT-7b	Applicable to Hoardings and Advertisement boards etc., on permanent Power Supply.
HT-3b	Applicable to Irrigation and Agricultural forms, etc.
HT-5	Temporary Power Supply
MSEZ	Mangalore Special Economic Zone

5.3 Comparison of number of installations, FY19 (Actual), FY20 (Actual), FY21 (Actual), FY22 (Actual), FY23 (Approved in TO-2022), FY23 (RE) and FY24 (Projections).

1	2	3	4	5	6
Category	FY19 (Actual)	FY20 (Actual)	FY21 (Actual)	FY22 (Apd in T021)	FY22 (Actual)
LT-1<40U	1,75,524	1,69,140	1,61,434	1,56,808	1,56,857
LT-1>40U	12,480	15,103	17,784	25,109	18,084
Subtotal:	1,88,004	1,84,243	1,79,218	1,74,892	1,74,941
LT-2a(i)	6,11,398	6,36,944	6,59,391	16,76,077	6,89,874
LT-2a(ii)	9,35,899	9,55,341	9,67,345		9,73,065
Subtotal:	15,47,297	15,92,285	16,26,736	16,76,077	16,62,939
LT-2b(i)	1,681	1,730	1,778	3725	1,852
LT-2b(ii)	1,833	1,860	1,862		1,817
Subtotal:	3,514	3,590	3,640	3,725	3,669
LT-3(i)	1,24,208	1,29,380	1,34,049	235226	1,40,533
LT-3(ii)	88,191	91,037	94,175		95,390
Subtotal:	2,12,399	2,20,417	2,28,224	2,35,226	2,35,923
LT-4a	3,26,187	3,44,482	3,61,885	3,74,482	3,78,493
LT-4b	162	165	161	165	141
LT-4c	4,311	4,713	4,878	5,681	5,224
LT-5a(i)	1,452	1,448	1,407	34,900	1,570
LT-5a(ii)	3,300	3,278	3,222		3,440
LT-5a(iii)	592	581	584		617
LT-5a(iv)	56	46	45		47
LT-5a(v)	-	-	-		1
LT-5b(i)	12,484	13,306	14,303		15,645
LT-5b(ii)	11,900	12,245	12,708		12,476
LT-5b(iii)	1,318	1,336	1,434		1,434
LT-5b(iv)	72	71	66		69
LT-5b(v)	-	-	-		13
Subtotal:	31,174	32,311	33,769	34,900	35,312
LT-6a	15,391	16,005	16,838	17,770	17,551
LT-6b	21,621	24,668	26,574	28,683	28,156
LT-7a	16,379	16,917	19,828	17,638	18,686
LT-7b	717	721	744		767
Subtotal:	17,096	17,638	20,572	17,638	19,453
LT-Total	23,67,156	24,40,517	25,02,495	25,76,264	25,61,802
HT-1	104	112	121	131	127
HT-2a	890	950	993	1,083	1,022
HT-2b	735	789	806	894	833
HT-2c	292	303	323	329	336
HT-3a	25	30	31	35	35
HT-3b	3	3	3		3
Subtotal:	28	33	34	35	38
HT-4	55	60	67	67	69
HT-5	17	16	19	18	14
MSEZ	1	1	1	-	1
HT-Total	2122	2,264	2,364	2,557	2,440
G. TOTAL:	23,69,278	24,42,781	25,04,859	25,78,821	25,64,242

1	7	8	9	10	11		
Category	Trend / Others	FY23 (Apd in T022)	FY23 (RE)	FY24 (Apd in T022)	FY24 (RE)		
LT-1<40U	FY22 retained	1,52,052	1,56,857	1,52,052	1,56,857		
LT-1>40U	FY22 retained	24,540	18,084	24,540	18,084		
Subtotal:		1,76,592	1,74,941	1,76,592	1,74,941		
LT-2a(i)	Trend FY20-FY22	17,08,608	7,15,000	17,59,180	7,43,697		
LT-2a(ii)	Trend FY20-FY22		9,82,974		9,90,090		
Subtotal:		17,08,608	16,97,974	17,59,180	17,33,787		
LT-2b(i)	Trend FY20-FY22	3746	1,909	3,808	1,977		
LT-2b(ii)	FY22 retained		1,817		1,817		
Subtotal:		3,746	3,726	3,808	3,794		
LT-3(i)	Trend FY20-FY22	244476	1,45,807	253538	1,51,888		
LT-3(ii)	Trend FY20-FY22		97,887		99,529		
Subtotal:		2,44,476	2,43,694	2,53,538	2,51,417		
LT-4a	Trend FY20-FY22	3,96,885	3,95,631	4,14,385	4,12,416		
LT-4b	FY22 retained	161	141	161	141		
LT-4c	Trend FY20-FY22	5,655	5,449	6,060	5,755		
LT-5a(i)	Trend FY20-FY22	36,602	1,597	38,038	1,715		
LT-5a(ii)	Trend FY20-FY22		3,475		3,632		
LT-5a(iii)	Trend FY20-FY22		630		656		
LT-5a(iv)	Trend FY20-FY22		47		48		
LT-5a(v)	FY22 retained		1		1		
LT-5b(i)	Trend FY20-FY22		16,757		18,022		
LT-5b(ii)	Trend FY20-FY22		12,707		12,629		
LT-5b(iii)	Trend FY20-FY22		1,499		1,521		
LT-5b(iv)	FY22 retained		69		69		
LT-5b(v)	FY22 retained		13		13		
Subtotal:			36,602		36,795	38,038	38,306
LT-6a	Trend FY20-FY22		18,550		18,344	19,339	19,084
LT-6b	Trend FY20-FY22		30,556		29,954	33,126	31,608
LT-7a	FY22 retained		20,572		18,686	20,572	18,686
LT-7b	FY22 retained				767		767
Subtotal:		20,572	19,453	20,572	19,453		
LT-Total		26,42,403	26,26,102	27,24,800	26,90,702		
HT-1	Trend FY20-FY22	136	135	145	142		
HT-2a	Trend FY20-FY22	1,103	1,060	1,174	1,092		
HT-2b	Trend FY20-FY22	900	853	962	878		
HT-2c	Trend FY20-FY22	355	354	374	369		
HT-3a	Trend FY20-FY22	41	37	44	40		
HT-3b	FY22 retained		3		3		
Subtotal:		41	40	44	43		
HT-4	Trend FY20-FY22	75	74	80	77		
HT-5	FY22 retained	19	14	19	14		
MSEZ	FY22 retained	-	1	-	1		
HT-Total		2,629	2,531	2,798	2,616		
G. TOTAL:		26,45,032	26,28,633	27,27,598	26,93,318		

5.4 Methodology adopted for energy projection for FY24:

- (i) 3 year CAGR of the period FY19 to FY22 has been considered for energy projection.
- (ii) CAGR has been applied for actual sales of FY22 to project the energy sales for FY23 and FY24. Hon'ble Commission has already approved energy sales for FY23 in the Tariff Order-2022. Hence, the revised energy projected here has been compared with the approved energy sales for FY23.
- (iii) Further, some of the tariff categories are indicating either negative or abnormal CAGR. Such of the negative / abnormal CAGR has been ignored and the actual energy sales of FY22 has been retained for FY23(RE) and FY24.
- (iv) Energy sales in respect of LT-4a (IP sets 10 HP & below) has been projected with reference to the specific consumption of FY22 and projected number of installations for FY24.
- (v) In respect of temporary power supply category under LT and HT, the actual energy sales of FY22 have been retained since year-on-year growth in the category is not consistent.

5.5 Comparison of energy sales; FY19 (Actual), FY20 (Actual), FY21 (Actual), FY22 (Actual), FY23 (Approved in TO-2022), FY23 (RE) and FY24 (Projections).

1	2	3	4	5	6
Category	FY19 (Actual)(MU)	FY20 (Actual)(MU)	FY21 (Actual)(MU)	FY22 (MU) (Appd in TO21)	FY22 (Actual)(MU)
LT-1<40U	37.29	34.65	35.00	32.12	35.28
LT-1>40U	12.08	14.91	18.91	24.79	17.99
Subtotal:	49.37	49.56	53.91	56.91	53.27
LT-2a(i)	721.91	776.91	802.76	855.15	831.51
LT-2a(ii)	640.07	687.80	727.01	755.31	729.48
Subtotal:	1361.98	1464.71	1529.77	1610.46	1560.99
LT-2b(i)	7.94	8.74	4.65	9.22	6.42
LT-2b(ii)	5.68	6.12	3.41	6.20	4.70
Subtotal:	13.62	14.86	8.06	15.42	11.12
LT-3(i)	240.67	256.03	216.39	277.38	240.70
LT-3(ii)	129.63	137.80	133.59	142.90	141.33
Subtotal:	370.30	393.83	349.98	420.28	382.03
LT-4a (Sp. Consump.)	1,630.90 (5159 unit)	1,728.92 (5156 unit)	1,685.26 (4772 unit)	1892.09 (5156 unit)	1,492.01 (4030 unit)
LT-4b	0.85	0.88	0.89	0.88	0.64
LT-4c	6.91	8.08	8.70	9.74	6.75
LT-5a(i)	1.68	1.78	1.30	46.97	1.45
LT-5a(ii)	16.52	17.15	13.09		13.97
LT-5a(iii)	23.26	22.92	20.37		23.45
LT-5a(iv)	4.42	3.73	3.00		2.86
LT-5a(v)	-	-	-		0.01
LT-5b(i)	8.97	10.08	9.71	91.19	10.74
LT-5b(ii)	35.07	36.10	35.02		36.28
LT-5b(iii)	38.45	39.91	37.53		41.38
LT-5b(iv)	5.58	5.22	3.72		4.16
LT-5b(v)	-	-	-		0.30
Subtotal:	133.95	136.89	123.74	138.16	134.60
LT-6a	123.02	131.97	144.80	147.28	151.62
LT-6b	69.82	66.47	66.79	77.29	69.92
LT-7a	19.56	19.29	17.91	19.16	21.48
LT-7b	0.85	0.72	0.41	0.85	0.42
Subtotal:	20.41	20.01	18.32	20.01	21.90
LT-Total	3781.13	4016.18	3990.22	4388.52	3884.85
HT-1	97.81	95.71	100.79	102.89	107.74
HT-2a	624.76	635.21	550.55	689.55	711.32
HT-2b	200.43	205.72	140.43	221.01	166.84
HT-2c	144.58	139.87	89.80	157.71	106.61
HT-3a	40.98	69.49	95.39	88.24	90.68
HT-3b	0.22	0.19	0.20	0.66	0.10
Subtotal:	41.20	69.68	95.59	88.90	90.78
HT-4	20.42	21.79	20.74	22.55	22.87
HT-5	1.73	3.40	2.29	3.83	2.75
MSEZ	41.94	56.88	60.98	43.75	67.95
HT-Total	1172.87	1228.26	1061.17	1330.19	1276.86
KPCL/Aux	2.88	2.74	6.57	2.74	6.81
G. TOTAL:	4956.88	5247.18	5057.96	5721.45	5168.52

1	7	8	9	10	11
Category	CAGR / Others	FY23 (MU) (Apd in T022)	FY23 (RE)(MU)	FY24 (MU) (Apd in T022)	FY24 (RE)(MU)
LT-1<40U	-1.83%	32.97	35.28	32.97	35.28
LT-1>40U	14.20%	23.08	17.99	23.08	17.99
Subtotal:		56.05	53.27	56.05	53.27
LT-2a(i)	4.82%	875.24	871.62	1715.83	913.67
LT-2a(ii)	4.45%	776.15	761.98		795.93
Subtotal:		1651.39	1633.60	1715.83	1709.60
LT-2b(i)	-6.84%	4.89	6.42	8.42	6.42
LT-2b(ii)	-6.12%	3.39	4.70		4.70
Subtotal:		8.28	11.12	8.42	11.12
LT-3(i)	0.00%	243.69	240.71	377.93	240.72
LT-3(ii)	2.92%	131.21	145.46		149.71
Subtotal:		374.90	386.17	377.93	390.43
LT-4a (Sp. Consump.)	Specific Consumption	1712.39 (4412 unit)	1,594.39 (4030unit)	1789.59 (4412 unit)	1,662.04 (4030 unit)
LT-4b	-9.03%	0.89	0.64	0.89	0.64
LT-4c	-0.78%	10.09	6.75	10.81	6.75
LT-5a(i)	-4.79%	44.06	1.45	130.22	1.45
LT-5a(ii)	-5.44%		13.97		13.97
LT-5a(iii)	0.27%		23.51		23.57
LT-5a(iv)	-13.51%		2.86		2.86
LT-5a(v)	FY22 retained		0.01		0.01
LT-5b(i)	6.19%	85.51	11.40	130.22	12.11
LT-5b(ii)	1.14%		36.69		37.11
LT-5b(iii)	2.48%		42.41		43.46
LT-5b(iv)	-9.33%		4.16		4.16
LT-5b(v)	FY22 retained		0.30		0.30
Subtotal:		129.57	136.76	130.22	139.00
LT-6a	7.22%	159.82	162.56	168.27	174.29
LT-6b	0.05%	76.80	69.95	84.94	69.98
LT-7a	FY22 retained	17.91	21.48	18.32	21.48
LT-7b	FY22 retained	0.41	0.42		0.42
Subtotal:		18.32	21.90	18.32	21.90
LT-Total		4198.50	4077.11	4361.27	4239.02
HT-1	3.28%	109.62	111.27	113.42	114.91
HT-2a	4.42%	595.83	742.76	598.81	775.59
HT-2b	-5.93%	173.95	166.84	174.82	166.84
HT-2c	-9.66%	114.84	106.61	114.84	106.61
HT-3a	30.31%	136.22	90.68	171.41	90.68
HT-3b	-23.26%	1.37	0.10		0.10
Subtotal:		137.59	90.78	171.41	90.78
HT-4	3.85%	23.34	23.75	23.99	24.66
HT-5	FY22 retained	2.29	2.75	2.29	2.75
MSEZ	FY22 retained	44.18	67.95	46.58	67.95
HT-Total		1201.64	1312.71	1246.16	1350.09
Addl. Sales	-	25.00	-	27.50	-
KPCL/Aux	FY22 retained	6.57	6.81	6.57	6.81
G. TOTAL:		5431.71	5396.63	5641.49	5595.92

5.6 ENERGY AT INTERFACE POINT AND GENERATION POINT:

The energy requirement at generation point is arrived at based on the approved transmission & distribution loss.

In the Tariff Order 2022, Hon'ble Commission has approved the KPTCL Transmission loss for FY24 as 2.764% and Distribution loss as 8.85%.

Accordingly, the projected energy at Interface Point and Generation Point for FY24 is as below. Further, comparison of actuals for FY19 to FY22, FY23(Approved), FY23(RE) and FY24 (Projections) are also given in the below table;

Year	Sales (*) (MU)	Dis. Loss (%)	IF Energy (MU)	Tr. Loss (%)	Gen. Point Energy (MU)
FY19 (Actual)	4956.88	10.52%	5539.73	(**)	5981.66
FY20 (Actual)	5247.18	10.07%	5835.03	(**)	6130.37
FY21 (Actual)	5057.96	9.86%	5611.33	(**)	5863.54
FY22 (Apd in TO21)	5721.45	9.27%	6257.79	2.978%	6494.96
FY22 (Actual)	5168.52	9.02%	5681.01	(**)	5917.01
FY23 (Apd in TO22)	5431.71	9.10%	5926.89	2.864%	6151.48
FY23 (RE)	5396.63	9.10%	5936.89	2.864%	6111.94
FY24 (Apd in TO21)	5641.49	8.85%	6138.13	2.764%	6360.52
FY24 (RE)	5595.92	8.85%	6139.24	2.764%	6313.75

(*) Sales includes MSEZ energy sales.

(**) Since energy at generation point is scheduled energy, the Tr. loss percentage with reference to generation point energy and IF point energy is inappropriate.

5.7 Proposed RPO Compliance for FY23:

MESCOM here below proposes Renewable Energy (RE) RPO Compliance for FY23.

Sl. No.	Particulars	Quantum In MU	Cost Rs.in Cr
1.	Total power purchase quantum from all sources excluding Hydro-energy	3859.43	2436.80
2.	RE purchased under PPA route at Generic Tariff.	1342.43	532.91
3.	RE purchased at APPC	-	-
4.	RE (Green Energy) sold to consumers	-	-
5.	RE purchased from other ESCOMs	-	-
6.	RE sold to other ESCOMs	-	-
7.	Banked RE purchased @ 85% of Generic Tariff.	-	-
8.	Total RE Purchased [1+2+3-4+5-6+7]	1342.43	532.91
9.	RE RPO Target (%)	25.00%	
10.	Proposed RE RPO Compliance (%)	34.78%	

5.8 Proposed RPO Compliance for FY24:

MESCOM here below proposes Renewable Energy (RE) RPO Compliance for FY24.

Sl. No.	Particulars	Quantum In MU	Cost Rs.in Cr
1.	Total power purchase quantum from all sources excluding Hydro-energy	3950.55	2509.62
2.	RE purchased under PPA route at Generic Tariff.	1360.54	540.68
3.	RE purchased at APPC	-	-
4.	RE (Green Energy) sold to consumers	-	-
5.	RE purchased from other ESCOMs	-	-
6.	RE sold to other ESCOMs	-	-
7.	Banked RE purchased @ 85% of Generic Tariff.	-	-
8.	Total RE Purchased [1+2+3-4+5-6+7]	1360.54	540.68
9.	RE RPO Target (%)	26.50%	
10.	Proposed RE RPO Compliance (%)	34.44%	

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