

10. ELECTRICITY

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10. ELECTRICITY

10.1 INSTALLED CAPACITY AND GENERATION OF ELECTRICITY 2009-10

<i>Power Station</i>	<i>Year of Operation</i>	<i>Installed capacity (M.W) *</i>	<i>Gross Generation M.U **</i>	<i>Auxiliaries Consumption in M.U **</i>	<i>Net Generation in M.U **</i>
HYDRO					
1. Pykara	1954	58.95	64.321	0.40	63.921
2. Pykara Mini Hydel	1989	2.00	9.690	0.08	9.610
3. PUSHEP	2005	150.00	560.222	2.92	557.302
4. Moyar	1953	36.00	211.467	0.50	210.967
5. Maravakandi Micro Hydel	1992	0.75	1.216	0.01	1.206
6. Parsons valley	2000	30.00	65.326	0.19	65.136
7. Kundah – 1	1964	60.00	278.748	0.73	278.018
8. Kundah – 2	1964	175.00	734.212	0.79	733.422
9. Kundah – 3	1978	180.00	438.241	2.32	435.921
10. Kundah – 4	1978	100.00	166.975	0.27	166.705
11. Kundah – 5	1988	40.00	85.211	0.23	84.981
12. Mettur Dam	1946	50.00	82.520	0.26	82.260
13. Mettur Tunnel	1966	200.00	389.358	0.73	388.628
14. LMHEP–Barrage-1	1987	30.00	80.966	0.90	80.066
15. LMHEP–Barrage-2	1988	30.00	76.570	0.78	75.790
16. LMHEP–Barrage-3	1987	30.00	77.403	0.96	76.443
17. LMHEP–Barrage-4	1988	30.00	63.296	0.84	62.456
18. Bhavani Kattalai PH-1	2006	30.00	75.156	0.66	74.496
19. Bhavanisagar RBC	1988	8.00	26.902	0.15	26.752
20. Bhavani Sagar Small	1990	8.00	36.769	0.14	36.629
21. Poonachi Micro	1992	2.00	3.396	0.02	3.376
22. Sathanur Micro	1999	7.50	6.548	0.04	6.508
23. Mukurthy Mini	2000	0.70	2.227	0.05	2.177
24. Thirumoorthy Mini	2000	1.95	3.151	0.02	3.131
25. Lower Aliyar	2002	2.50	7.829	0.05	7.779
26. Amaravathy	2006	4.00	10.304	0.14	10.164
27. Perunchani Mini	2006	1.30	2.352	0.01	2.342
28. Periyar	1965	140.00	396.214	1.46	394.754
29. Vaigai Small Hydel	1990	6.00	10.523	0.15	10.373

* M.W. = Mega Watt

** M.U. = Million Unit

10.1 INSTALLED CAPACITY AND GENERATION OF ELECTRICITY 2009-10 (Contd.)

<i>Power Station</i>	<i>Year of Operation</i>	<i>Installed capacity (M.W) *</i>	<i>Gross Generation M.U **</i>	<i>Auxiliaries Consumption in M.U **</i>	<i>Net Generation in M.U **</i>
HYDRO (Contd.)					
30. Suruliyar	1986	35.00	99.041	0.41	98.631
31. Papanasam	1951	32.00	130.006	0.81	129.196
32. Servalar	1987	20.00	26.127	0.08	26.047
33. Sarkarpathy	1966	30.00	121.160	0.08	121.080
34. Aliyar	1970	60.00	166.112	0.42	165.692
35. Kadamparai	1988	400.00	499.419	2.70	496.719
36. Sholayar-1	1971	70.00	287.523	0.48	287.043
37. Sholayar-2	1971	25.00	63.754	0.23	63.524
38. Kodayar-1	1971	60.00	196.422	0.51	195.912
39. Kodayar-2	1971	40.00	83.678	0.51	83.168
Total Hydro		2186.65	5640.355	22.03	5618.325
THERMAL					
40. Ennore TPS	1970	450.00	1500.117	282.48	1217.637
41. North Chennai TPS	1994	630.00	4825.117	414.05	4411.067
42. Thoothukudi TPS	1979-1991	1050.00	7166.610	623.19	6543.420
43. Mettur TPS	1990	840.00	6390.565	522.32	5868.245
Total Thermal		2970.00	19882.409	1842.04	18040.369
GAS					
44. Basin Bridge	1996	120.00	82.000	2.84	79.160
45. Kovil Kalappal	2001	107.88	534.000	46.80	487.200
46. Vazhuthur I & II	2003	187.00	1065.000	56.11	1008.890
47. Kuttralam	2004	101.00	646.000	43.22	602.780
Total		515.88	2327.00	148.97	2178.030
48. Wind Mill	-	17.555	11.093	-	11.093

10.1 INSTALLED CAPACITY AND GENERATION OF ELECTRICITY 2009-10 (Contd.)

<i>Power Station</i>	<i>Year of Operati on</i>	<i>Installed capacity (M.W) *</i>	<i>Gross Generation M.U **</i>	<i>Net Generation M.U **</i>
CENTRAL SECTOR – PURCHASES				
49. Neyveli TPS 1	1962	475	3269.155	3269.155
50. Neyveli TPS 1-Expansion	2003	226	1486.267	1486.267
51. Neyveli TPS 2	1986	466	3000.659	3000.659
52. MAPS Nuclear	1983	330	1259.166	1259.166
53. Kaiga Nuclear (Karnataka)	2000	171	720.439	720.439
54. Ramagundam STPS (A.P)	1984	527	4090.638	4090.638
55. Ramagundam STPS (A.P) U7	2005	132	1100.936	1100.936
56. ER Power	-	125	496.788	496.788
57. Talcher St-2	-	498	3802.122	3802.122
58. NTPC Kayamkulam (TNEB)	-	180	1229.400	1229.400
59. NVVN (KSEB's share)**	-	-	-	-
60. UI Energy	-	-	888.922	888.922
Sub Total	-	3130.00	21344.492	21344.492
PRIVATE SECTOR : PURCHASES				
61. GMR	-	196	1144.672	1144.672
62. Samalpatty	-	105.66	480.581	480.581
63. Pillai Perumal Nallur	-	330.50	2258.335	2258.335
64. Madurai Power Corpn. Ltd	-	106	467.202	467.202
65. STCMS	-	250	1654.050	1654.050
66. Aban	-	120	676.971	676.971
67. ARKAY (Penna)	-	71.6	338.727	338.727

10.1 INSTALLED CAPACITY AND GENERATION OF ELECTRICITY 2009-10 (Concl.)

<i>Power Station</i>	<i>Year of Operation</i>	<i>Installed capacity (M.W) *</i>	<i>Gross Generation M.U **</i>	<i>Auxiliaries Consumption M.U **</i>	<i>Net Generation M.U **</i>
CPP					
68. TCPL	-	63.80	655.260	-	655.260
69. Hi-tec	-	10.50		-	-
70. CPCL (Manali)	-	65.00		-	-
71. Other CPPS	-	75.40		-	-
72. Co-Generation	-	559.90	782.856	-	782.856
73. Wind Mill + Solar (Pvt.)	-	4889.80	8134.415	-	8134.415
74. Bio-mass	-	137.10	103.848	-	103.848
75. Power returned under swap	-	-	-634.441	-	-634.441
76. CPP Purchase thro Traders	-	-	2507.561	-	2507.561
77. Purchase from the power market Sale	-	-	4445.191	-	4445.191
Purchases	-	-	-574.80	-	-574.80
			1864.00	-	1864.00
Power Demand					
(i) Instantaneous Demand					10180 MW /
(ii) Sustained Demand					10046 MW /

*** Not included in installed capacity

Source : The Chief Engineer Planning, Tamil Nadu Electricity Board, Chennai-2

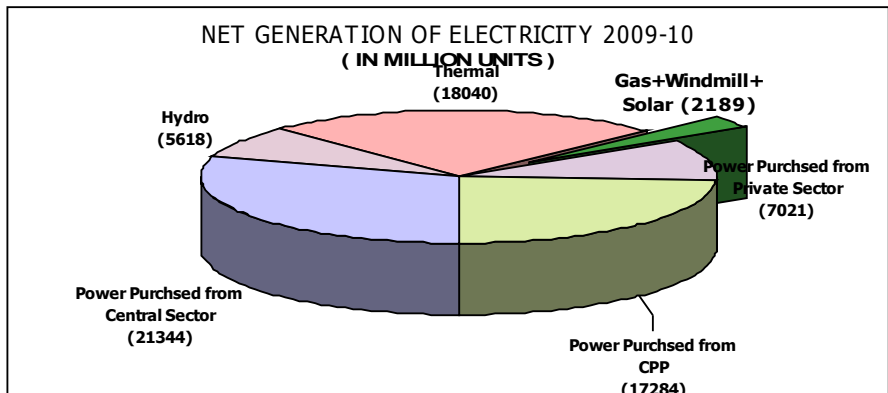


Table 10.1

10.2 LENGTH OF EHT/HT LINES, DISTRIBUTION TRANSFORMERS AND EHT/HT SUB STATIONS 2009-10

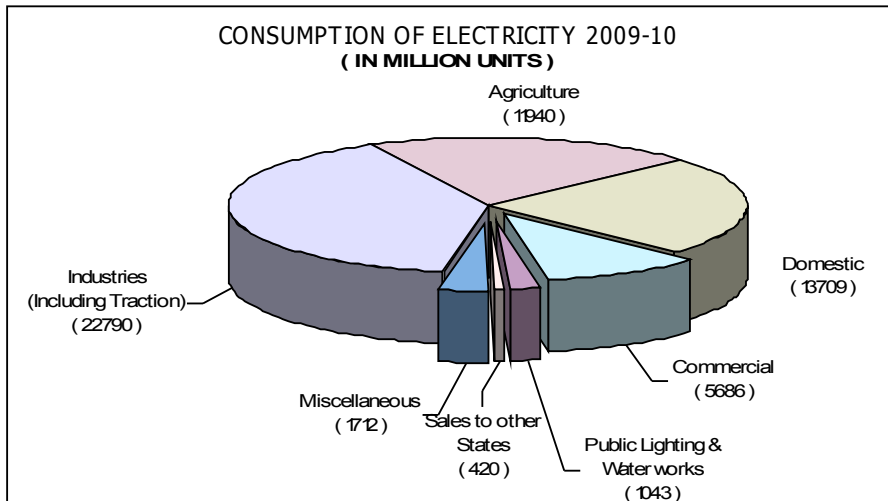
<i>Item</i>	<i>Units</i>	<i>Achievement</i>
Length of E.H.T. & HT Lines existing	CKT.Kms	1.69 lakh Ckt. Kms.
Length of L.T.Lines existing	Kms	5.39 Lakh Kms.
Distribution Transformers existing	Nos.	1,92,632
E.H.T. Sub-stations(existing)	Nos.	86
H.T. Sub-stations (existing)	Nos.	1223

Source: Chief Engineer Planning, Tamil Nadu Electricity Board, Chennai-2

10.3 CONSUMPTION OF ELECTRICITY 2009-10

<i>Category</i>	<i>Consumption (M.U.)</i>	<i>Percentage of Consumption</i>
Industries (including Traction)	22,790	39.77
Agriculture	11,940	20.84
Domestic	13,709	23.92
Commercial	5,686	9.92
Public Lighting & Water works	1,043	1.82
Sales of Licensees Sales to other States	420	0.73
Miscellaneous	1,712	3.00
TOTAL	57,300	100.00

Source: The Chief Engineer Planning, Tamil Nadu Electricity Board, Chennai-2



10.4 CONSUMERS AND CONNECTED LOAD

Category	As on 31-03-2010	
	Consumer (Nos.)	Connected Load (MW)
I H.T. Supply	7,336	6,356
II L.T. Supply		
1. Domestic	1,41,94,757	16,461
2. a) Public Lighting	2,83,207	236
b) Water Supply	1,67,398	602
3. Industry	5,02,511	8,080
4. Agriculture	19,13,697	7,727
5. Huts	13,70,290	65,407
6. Education etc.,	1,14,625	270
7. Commercial	26,36,821	4,740
8. Others	85,622	104
a) Places of Worship	72,645	68,390
b) Temp	12,340	33,589
c) Bulk Supply	637	2,177
TOTAL	2,12,76,264	1,09,983

Source: Chief Engineer Planning, TNEB, Chennai-2

10.5 RURAL ELECTRIFICATION BY DISTRICTS 2009-10

(in Nos.)

<i>District</i>	<i>Hamlets</i>		<i>Adi Dravidar Colonies Electrified</i>
	<i>Existing</i>	<i>Electrified</i>	
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
1. Chennai	0	0	0
2. Kancheepuram+ Chengalpattu	} 4262	} 4178	} 2201
3. Thiruvallur			
4. Cuddalore	} 4304	} 4112	} 1019
5. Villupuram			
6. Vellore+ Thirupathur	} 4268	} 4089	} 3135
7. Thiruvannamalai			
8. Salem	} 5670	} 5560	} -
9. Namakkal			
10. Dharmapuri	} 4740	} 4655	} 1049
11. Krishnagiri			
12. Erode	} 7040	} 6931	} 4775
13. Coimbatore			
14. The Nilgiris	942	910	-
15. Tiruchirappalli	} 5311	} 5232	} 3075
16. Karur			
17. Perambalur			
18. Ariyalur	-	-	-
19. Thanjavur	} 5759	} 5710	} 6664
20. Nagapattinam			
21. Thiruvarur			
22. Pudukottai	3177	3158	-
23. Madurai	} 5860	} 5750	} 1562
24. Theni			
25. Dindigul			
26. Ramanathapuram	} 6577	} 6465	} 1518
27. Virudhunagar			
28. Sivagangai			
29. Tirunelveli	} 4685	} 4642	} 1766
30. Thoothukudi			
31. Kanyakumari	2613	2564	-
STATE	65208	63956	26764

10.5 RURAL ELECTRIFICATION BY DISTRICTS 2009-10 (Concl'd.)

(In Nos)

<i>ELECTRICITY DISTRIBUTION CIRCLE</i>	<i>No. of pumpsets energised during the year 2009-10</i>	<i>Pumpsets Energised As on 31.3.2010</i>	<i>Huts Electrified as on 31.3.2009</i>
<i>1</i>	<i>5</i>	<i>6</i>	<i>7</i>
1. Coimbatore	3125	124348	50860
2. Chennai	0	1	0
3. Cuddalore	1035	67602	72973
4. Dharmapuri	1753	105313	40215
5. Kancheepuram	1676	71557	29643
6. Dindigul	1666	89296	36161
7. Erode	1039	131007	41908
8. Kanyakumari	180	7177	7368
9. Karur	569	43067	21725
10. Krishnagiri	0	6859	28151
11. Madurai	682	49316	61043
12. Nagapattinam	399	25507	55131
13. Namakkal	790	78007	25134
14. Nilgiris	24	1245	14285
15. Pudukkottai	1021	52110	53595
16. Perambalur	0	50410	50112
17. Ramanathapuram	99	8288	16541
18. Salem	1775	119531	57317
19. Sivagangai	600	22279	38527
20. Thanjavur	641	58069	62341
21. Theni	589	35169	15431
22. Tirunelveli	1615	76869	25249
23. Tiruvarur	0	20622	35326
24. Tiruvannamalai	2292	166472	74908
25. Tiruvallur	0	45989	48717
26. Trichy	2032	82657	73565
27. Tuticorin	299	29372	20118
28. Vellore	1797	131585	37047
29. Villupuram	2526	164490	129351
30. Virudhunagar	416	36630	30266
31. Ariyalur	0	530	283
TOTAL	28640	1901374	1253291

Source: The Chief Engineer Planning, T.N.E.B, Chennai-2

10.6 TAMIL NADU ELECTRICITY BOARD - CAPITAL BUDGET AT A GLANCE

(Rs. in Crores)

<i>Details</i>	<i>Tenth Five Year Plan (2002-07) Outlay</i>	<i>Actual Expenditure during 2009-10</i>	<i>Approved Outlay for 2010-11</i>
1. Generation (Including investment in Joint Venture)	12497.67	1892.70	} 1004.65
2. Renovation & modernisation	551.47	45.09	
3. Transmission & Distribution	7000.00	1183.61	
4. Rural Electrification	500.00	260.68	
5. Survey & Investigation	110.00	1.45	
6. Interest during Construction	500.00	292.59	
TOTAL	21159.14	3676.12	1004.65

Source: The Chief Engineer (Planning), Tamil Nadu Electricity Board, Chennai-2

10.7 APPROVED AND ON GOING SCHEMES AS ON 1-4-2010

(Rs. in Crores)

<i>Name of the Scheme</i>	<i>Original Sanction / Proposed cost</i>	<i>Revised Project cost</i>	<i>Expenditure (Upto 31.3.2010)</i>
1. North Chennai Thermal Power Project Unit-I (Thermal)	3095.00	3552.00	Nil
2. North Chennai Thermal Power Project Unit-II (Thermal)	2718.00	2718.00	420.65
3. Mettur Thermal Power Project (Thermal)	3550.00	3550.00	567.71
4. Bhavani Kattalai Barrage-2 (Hydro)	400.59	400.59	253.93
5. Bhavani Kattalai Barrage-3 (Hydro)	396.59	396.59	151.86
6. ETPS Annexure	3136.00	Not yet awarded	0.03
7. Ennore SEZ Project in the ash dyke of the North Chennai Thermal Power Station (Katupalli)	9600.00 (Proposed Project Cost)	Not yet awarded	Not incurred
8. Bhavani Barrage 1 HEP	64.30	170.78	43.88
9. Bhavani Barrage 2 HEP.	54.23	177.86	53.11

10.7 APPROVED AND ON GOING SCHEMES AS ON 1-4-2010 (Concl'd)

Name of the Scheme	Original Sanction / Proposed cost	Revised Project cost	(Rs. in Crores)
			Expenditure (Upto 31.3.2010)
10. Periyar Vaigai 1 Small HEP	18.83	49.19	38.54
11. Periyar Vaigai 2 Small HEP	14.25	40.07 (2x1.25 MW)	17.19
12. Periyar Vaigai 3 Small HEP	18.63	58.84	19.19
13. Periyar Vaigai 4 Small HEP	15.00	46.66	19.88
14. NTPC-TNEB Joint Venture Project at Vallur (Thermal) Unit-I	5423.00	5423.00	-
Name of Company : M/s. NLC Tamil Nadu Energy Company Ltd Unit-II	2577.00	2577.00	521.00 as equity
15. NTPC-TNEB Joint Venture Project at Tuticorin (Thermal)	4909.54	4909.00	49.00 as equity
Name of Company : M/s. NLC Tamil Nadu Energy Company Ltd			
16. Udangudi Super Critical Power Project – 2x800 MW (Joint Venture Project with BHEL)	9083.10	9083.10	Rs. 25.00 as equity
Name of Company : Udangudi Power Corporation Limited			

Source : The Chief Engineer Planning, T.N.E.B. Chennai-2

10.8 TIME SERIES DATA – DEVELOPMENT OF ENERGY IN TAMIL NADU

Year	Installed capacity (MW)	Annual Gross Generation (MU)	Purchases (MU)	Percapita Consumption (KWH)
2000-01	7513	25147	16617	510
2001-02	7924	25562	18358	708
2002-03	8268	24929	21263	740
2003-04	9319	24114	25384	780
2004-05	9531	26450	25895	815
2005-06	10031	26915	29091	860
2006-07	10098	29481	33357	960
2007-08	10122	66848	37607	1000
2008-09	10214	66966	37984	1000
2009-10	10214	72591	45629	-

Source : The Chief Engineer Planning, Tamil Nadu Electricity Board, Chennai-2