

Tamil Nadu Electricity Regulatory Commission

LIST OF IMPORTANT DIRECTIONS / INSTRUCTIONS ISSUED BY TNERC AND THE STATUS OF COMPLIANCE BY TANGEDCO

Sl. No.	Directions/Instructions/Suggestions issued by the Commission	Status of Compliance / action taken by TANGEDCO
A. Directions/Instructions/Suggestions issued by the Commission in the retail tariff order No. 3 dated 31-07-2010.		
I	General Issues	
1	2.30.1(1). As and when the TNEB is unbundled such a Regulatory Cell may have to be created in both the TANGEDCO and TANTRANSCO. The TNEB and their successor entities are advised to take appropriate action to create such a Regulatory Cell. The Commission may be informed of action taken within a period of six months.	<p>1.0 At present 'tariff cell' is working under the Accounts Branch with the following staff:</p> <p>a. Executive Engineer; b. Assistant Executive Engineer; and c. Assistant Engineer;</p> <p>2.0. The above tariff cell is now looking after the Regulatory works pertaining to Hon'ble Tamil Nadu Electricity Regulatory Commission.</p> <p>3.0. As per G.O (MS) No.100 dated 19.10.2010, the personnel of the Board shall stand assigned to the services of the relevant Transferee, on deputation basis.</p> <p>4.0. Thus until finalisation of staff's transfer, the above cell will look after works of both TANGEDCO and TANTRANSCO.</p>
2	2.30.2(4). The Commission directs that the TNEB (Now TANGEDCO) shall carry out an exercise to arrive at proper estimate of AT & C and T & D losses within a period of six months	<p><u>Commercial losses:</u> Enforcement wing is effectively undertaking remedial measures for reduction of commercial losses. Details enclosed vide Annexure-I.</p> <p>Regarding collection efficiency which is also a major deciding factor for the Commercial losses, it is submitted that collection in TANGEDCO is fairly high due to the effective billing, collection and disconnection mechanism and will be ensured in future.</p> <p><u>T&D Losses:</u> To reduce the T&D loss the following measures are under taken.</p> <p><u>Erection of new Substations:</u> So far during the year 2010- 2011 around 60 Substations were programmed, in which 40 Substations were taken up for execution out of which 20 Substations were commissioned and 20 Substations</p>

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		<p>are under construction and expected to be commissioned before 31st March 2011. However, besides the above, in RAPDRP schemes 61 Substations have been programmed to be executed in the next 3 years in the 110 Project Area Towns.</p> <p>Improvement of Lines: A route length of 3000 Kilometres has been planned for the year, which will help in reducing the line losses. It is further submitted that proper estimate of AT & C loss could not be arrived due to the non availability of 100 % metering in Agriculture & Hut service connections.</p>
3	6.1.13. Taking into account information in this Order, TNEB (Now TANGEDCO) shall file a petition for determination of wheeling charges, surcharge / additional surcharge.	The petition on determination of wheeling charges, surcharge and additional surcharge has been filed before the Hon'ble commission on 16.12.2010. Additional details as directed by the Hon'ble commission are to be submitted shortly.
II	Generation	
4	4.1.7. The TNEB (Now TANGEDCO) is directed to file a separate petition for ETPS in accordance with the Regulation within 2 months of issue of this order and the tariff of ETPS will be decided on that basis.	A separate petition for ETPS has been filed before Hon'ble TNERC on 29.09.2010.
5	4.1.9. The Commission suggest that the TNEB (Now TANGEDCO) may take up the issue with the Government of India for allocation of additional gas so that the assets which are created already are put to optimum use. The TNEB (Now TANGEDCO) shall plan to maximize the output of Gas based Stations and at the same time the heat rate is also maintained at an optimal level.	<p>(i) The Ministry of Petroleum and Natural Gas (MOPNG)/GOI has been addressed to enhance the gas supply to all existing gas stations vide letter dt: 07.05.2009 & 28.08.2009.</p> <p>(ii) MOPNG / GOI has informed vide their lr dt 11.8.10 & 10.8.10 that 3,00,000 SCMD(Standard Cubic Meter per Day) gas is available at Ramnad Zone for 8 years and 25,000 SCMD at Nannilam respectively. Concurrence to avail the additional gas at Non-APM (Administrative Price mechanism) price of 4.75 USD/MMBTU(Million Metric British Thermal Unit) has been given vide lr dt 24.8.10.</p> <p>(iii) M/s GAIL has been addressed vide lr. dt: 05.11.09 to interlink the Narimanam Gas field to Kovilkalapal gas field so as to meet out the short fall in Thirumakottai Gas Power Station. Subject to availability of gas M/s. GAIL will examine the proposal and the outcome of the proposal will be expected shortly.</p>

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		<p>(iv) The present supply position and the reason for unplanned & prolonged shutdown of Valuthur-Phase-II & Kuttalam gas stations have been apprised to Member Secretary/CEA, Southern Regional Power Committee, Bangalore vide Ir dt 20.11.10.</p> <p><u>Heat Rate</u></p> <p>(i) The average heat rate for the period from April to Nov.'2010 is given below:</p> <p style="padding-left: 40px;">T(K)GTPS-1854 Kcal/Kwhr KGTPS -1923 Kcal/ Kwhr VGTPS -1805 Kcal/ Kwhr</p> <p>From the above it is seen that the heat rate in KGTPS is more than the TNERC Norms of 1850 Kcal/Kwhr as the unit is under shut down from 17.05.2010 due to release of Generator stator for replacement at VGTPS.</p> <p>(ii) Further at KGTPS, only 70% of the agreed quantity of gas was supplied by M/s. GAIL during the above period.</p> <p>(iii) T(K)GTPS is also running on part load due to inadequate gas supply. VGTPS – I is running with all available gas (100%) as the Unit –II is under shut down from 09.01.2010. Hence the station heat rate at VGTPS is lesser than the norms.</p>
6	<p>4.1.10. TNEB (Now TANGEDCO) may also take up this matter with GAIL for use of allocated gas in various power stations and in case the TNEB (Now TANGEDCO) cannot utilise the entire gas allocated to them, the issue of using this surplus gas by other generators in the State may also be considered. This needs to be done in consultation with GAIL. Yet another issue involved in use of gas is “take or pay” contract for gas supply. TNEB (Now TANGEDCO) may ensure that at all times the allocated gas is fully utilised so that “take or pay” conditions may not be attracted.</p>	<p>(i) M/s GAIL India Ltd, Chennai have been insisted many times to take necessary arrangement to supply the agreed quantity of natural gas to Thirumakottai, Kuttalam and Valuthur Gas Turbine Power Stations.</p> <p>(ii) M/s. ONGC is Supplying through M/s GAIL, the additional gas explored to Thirumakkottai (K) Gas Turbine Power Station from September 2010 onwards. At Present Thirumakkottai (K) Gas Turbine Power Station is getting 3,50,000m³ / day of natural gas as against 4,50,000M³ / day and they have accepted to supply more quantum of gas to T(K)GTPS as and when additional gas is explored from the existing wells.</p>

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		<p>(iii) They have also agreed to supply the additional quantity of gas to the VGTPS in Ramnad Zone from April 2011 onwards at Non APM price of 4.75 USD per MMBTU.</p> <p>(iv) In VGTPS, Only 70% of the agreed quantity of 8.8 lakh SCMD is being supplied. Since Unit-II is under shut down from 09.01.2010, Unit –I is availing gas at its maximum capacity. However during the breakdown period of Unit-I from 17.05.2010 to 22.08.2010, MDP (Market Driven Price) MGO (Minimum Guaranteed Off Take) charges was paid to M/s. GAIL as both the units were under shut down. To avoid further MGO Charges, the stator from KGTPS was released and put into service at VGTPS-I and the unit is running from 23.08.2010 at its full capacity. The balance available gas is being diverted to the nearby Power Generating Plants at Ramnad Zone till Unit-II is brought back into service which is expected by 11.04.2011.</p> <p>(v) GAIL has diverted the gas to the other Private Power projects in Kuttalam Zone as KGTPS is under Shutdown from 18.7.10 and no MGO claim has been made by M/s.GAIL. M/s. GAIL has also been requested vide letter dt: 07.07.2010 not to claim MGO Charges in respect of KGTPS & VGTPS-II.</p>
7	4.1.13. The TNEB (Now TANGEDCO) shall study the causes for the low performance of ETPS in spite of R&M works and take appropriate action to improve the performance.	Details enclosed vide Annexure II
8	7.14.6 (5). The Oil Consumption in TTPS is much higher than the normative specific consumption from 2006-07. The TNEB (Now TANGEDCO) shall study the reasons and take corrective action to reduce the consumption to the normative level.	A report in this regard shall be furnished shortly.
9	7.14.8.5. The tariff now considered for new stations are only estimates and shall be provisional. The TNEB (Now TANGEDCO) shall file a separate petition in each of the above case at an appropriate time in accordance with the Commission's tariff regulation in force.	The TANGEDCO will file a separate petition for new generating stations as directed
III	Quality of Supply	
10	2.29.2(4). Adequate transformation will have to be created depending on the requirement. HT / LT ratio needs to be	Implementation of HVDS (High Voltage Distribution System) is under Trial basis and two feeders (one 11 KV and one 22

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	improved.	KV) have been programmed for improving the HT: LT ratio which in turn will help in reducing the technical losses. Further, under R-APDRP Part B schemes, about 24822 small capacity Distribution Transformers under HVDS are proposed to be installed over a period of 3 years.
11	2.29.2(5). The distribution transformers are to be metered to get the profile of the voltage, down time as well as the energy.	Under Part-A of R-APDRP, it is proposed to install Remote AMR based Data Logging system in all the DTs (29994 Nos.) of the 110 project Areas using IEC 62056 open protocol compliant AMR meters. On completion, metering in further DTs will be taken up in Phased manner.
IV	Metering and Energy Audit	
12	2.29.3(1). A time bound programme for 100% metering needs to be worked out by TNEB (Now TANGEDCO) and submitted to the Commission. This shall be done within six months of the issue of this Order.	<p>As on date 2,12,76,264 Nos. of consumers are available in Tamil Nadu.</p> <p>HT Consumers: 7336 Nos. are already provided with TOD Meters.</p> <p>LT Consumers: Out of the total 2,12,68,928 Nos. of LT consumers, Agriculture and Hut service consumers are numbering to 32,83,987 Nos. who are un-metered consumers. The Hon'ble commission has given a time limit of up to 30-09-2012 for fixing the meters in the above said Agriculture and Hut services. All the balance LT services are having mostly electro mechanical meters except LT Services with 25 HP and above which have Static meters.</p> <p>Under R-APDRP schemes in 87 Towns, about 43.24 lakhs of electronic Tamper Proof LT meters are proposed to be installed. The released electro mechanical meters from the existing LT services under R-APDRP Schemes shall be arranged to be installed in Agriculture and Hut service connections. The balance services will be done in Phased manner.</p>
13	2.29.3(2). To meter all the feeders and the distribution transformers and the meters shall have the facility for remote reading.	Under R-APDRP Part- A, it is proposed deploy GPRS based Remote AMR using Data Concentrator Unit (DCU) for each ss (329 DCUs are capable of controlling 8 feeders on an average) covering all the feeder meters. Similarly, the DT meter data will also be transferred to Data Centre over GPRS. On completion, metering in further DTs will be taken up in a phased manner.

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	TNEB (Now TANGEDCO) is directed to submit the programme for carrying out the Study for Assessment of Transmission and Distribution (T&D) losses.	Reply as in serial No 2.
14	2.29.3(4). To install Availability Based Tariff (ABT) compliant meters for the purpose of measurement of real power and reactive power at interface points in intervals of 15 minutes. The ABT compliant meters are essential for the purpose of proper grid management, sending commercial signals for ramping up / backing down of generations and increase / decrease of load.	128 Nos. ABT meters have been provided in all the IPPs and CPPs, Co-Gen and Bio-Mass Generation Plants who have been permitted for Short Term Open Access. The balance Generation-Transmission-Distribution interfaces is being assessed for provision of ABT meters. Assessment of feeders, specification of ABT meters and actual installation of meters will be completed within a period of six months.
V	Demand Side Management	
15	2.29.7(6). TNEB (Now TANGEDCO) to create awareness among the consumers about Energy Conservation – Use of Star Labelled appliances, CFL etc.	Energy conservation day is celebrated every year on 14 th December and energy conservation week from 14 th December to 20 th December every year to create awareness programme. TANGEDCO is emphasizing the need for use of the star labelled appliances in all its seminars / training programmes. TANGEDCO has awarded the work of implementing lighting energy efficiency program under Bachat Lamp Yojana scheme in the domestic sector comprising approximately 82 Lakhs domestic consumers in the state of Tamil Nadu. The pilot project is being implemented in Cuddalore Electricity Distribution Circle. On completion of this, this scheme will be enhanced to the remaining areas.
16	2.29.7(15). Minimising energy spent in piping and pump sets in agricultural sector.	It is proposed to replace around 15 lakhs existing pump sets in to energy efficient pump sets in a span of 5 years in a phased manner.
17	2.29.7(17). To conduct Energy Audit in industrial sector.	As per the Energy Conservation Act, 2001, the Tamil Nadu Electrical Inspectorate has been designated as State Designated Agency (SDA). The SDA is monitoring the energy auditing in industrial sector.
VI	Employees Cost – Terminal Benefits	
18	2.30.3(1). TNEB (Now TANGEDCO) to conduct an actuarial study, assess the probable amount of pension liability and submit a report at an early date.	1.0 The transfer scheme transferring the properties and personnel of the erstwhile TNEB was notified by the Government of Tamil Nadu vide G.O (Ms) No.100 dated 19.10.2010.
19	2.30.3 (3)(b). In most cases, a Corpus is created for meeting the terminal benefits of employees. For this purpose, an actuarial	2.0 As per the G.O., All personnel of the Board (excluding Chairman and Director

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	<p>study may have to be carried out to decide the amount to be credited in the corpus. The TNEB (Now TANGEDCO) is directed to examine this issue and submit a proposal for the same to the Commission. This exercise should be carried out within a period of six months.</p>	<p>of the Board) shall stand transferred to and absorbed in TANGEDCO on a provisional basis, subject to finalization of Employee Transfer scheme by the State Government in consultation with the Chairman of TNEB Limited (Clause No. 6 (2)).</p> <p>3.0 The personnel of the Board shall stand assigned to the services of the relevant Transferee, on deputation basis, on "as-is-where-is" basis, namely, that they will continue to serve in the place where they are posted on the date of transfer (Clause No. 6(5)).</p> <p>4.0. As per clause 6 (17) of the Government Order, till finalization of transfer of personnel to TANTRANSCO, the payment of terminal benefits to existing pensioners will be continued to be met from the cash flow of the operations of the TANGEDCO and TANTRANSCO would reimburse its proportionate share.</p> <p>5.0 The more accurate and realistic assessment of the probable amount of pension liability could be made, only when employee transfer is finalized. Hence the process of assessment of liability and creation of corpus fund could be started, by the successor entities once the employee transfer is finalized with in the due date mentioned in clause 9(1) of the Government order.</p>
B. Actions To Be Taken for the Implementation of National Electricity Policy		
20	<p>5.4.6. (i) Declaring the results of Energy Accounting for every defined unit.</p>	<p>1.0. Under R-APDRP Part- A, it is proposed deploy GPRS based Remote AMR using Data Concentrator Unit for each ss (329 DCU's capable of controlling 8 feeders on an average) covering all the feeder meters.</p> <p>2.0. Under Part –A of R-APDRP it is proposed to install Remote AMR based Data Logging system in all the DT's (29994 Nos.) of the 110 project Areas using IEC 62056 open protocol complaint AMR meters.</p> <p>3.0. Under R-APDRP schemes in 87 Towns, about 43.24 lakhs of electronic Tamper Proof LT meters are proposed to be installed. On completion of the above works, defined units will be identified for declaring energy audit results of the energy accounting.</p>

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	(ii) Drawing up a time-bound programme for segregation of technical and commercial losses .	100% metering including Agriculture and Hut is planned for arriving at the more accurate & actual T&D losses. After that Commercial losses can be derived by subtracting T&D loss from the AT & C losses.
21	5.4.9. (i) Submission of metering plans. (ii) Introduction of pre-paid meters. (ii) Introduction of TOD meters for bulk/HT consumers	Pre-paid metering system will be implemented in a phased manner. TOD meters are provided for bulk/HT consumers
22	5.4.11. Implementation of HVDS, SCADA and Data-Base Management	1.0 Two pilot projects for implementation of HVDS under Turnkey were considered in two feeders viz: (i) 11 KV Thondamanur feeder off Kottaiyur 33/11 KV SS in Thiruvannamalai Electricity Distribution Circle of Villupuram Region at an estimated cost of Rs. 1.64 Crs (G) and Rs. 1.33 Crs (N). (ii) 22 KV Chemical feeder fed of Sankari 110/22 KV SS in Mettur Electricity Distribution Circle of Erode Region at an estimated cost of Rs. 1.62 Crs (G) and Rs. 1.38 Crs (N). The tender for implementation of these projects have been floated and are under process. Further, under R-APDRP Part B schemes, about 24822 small capacity Distribution Transformers under HVDS are proposed to be installed over a period of 3 years.
C. Actions To Be Taken for the Implementation of National Tariff Policy		
23	6.4 Renewable Purchase obligation achieved during the current financial year	Total generation injected to the grid - (From April 2010 to November 2010) 49831 MU. Total renewable generation as on 30.11.2010: Wind : 6523 MU Co-generation : 891 MU Bio-Mass : 265 MU Total : 7679 MU Renewable Purchase Obligation achieved (From April 2010 to November 2010) - 15.41%.
D. General		
24	Conversion of over head lines to UG Cables – Provision of aerial bunched cables – Avoidance of accidents – Status Report called	The instructions issued for conversion of OH to UG cable conversion in five Municipalities Viz., Trichy, Madurai, Tirunelveli, Salem and Coimbatore have been revoked vide B.P.19 dt.13.12.2010. Aerial bunched cables are

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		<p>not procured at present. However under R-APDRP Part B about 463 Kms of HT OH Line and 800 Kms of LT OH line are proposed to be converted into UG Cable in Chennai, Coimbatore and Salem Project Areas.</p> <p>To avoid accidents, instructions are issued to replace the AAC, and copper conductors and reviewed periodically for implementation of TNERC Standards of Performance. Further a special committee has been formed under the head of AEE/Safety/NCTPS for study and recommend to avoid/reduce accidents.</p>
25	<p>Establishment of Computer Based Power Failure Redressal System in respect of the Corporations, townships and Municipalities</p>	<p>Call Centers are already available in the major towns / Cities. However these are all not 100% computerized without the base line data. Now in R-APDRP for 110 towns the base line data is collected through DGPS Survey and will be uploaded to the data centre proposed to be situated at Chennai which will have all the details of particulars of feeding from LT consumer level up to SS along with Network analysis. By this consumer can have the first hand information about the general outages, the possible restoration time etc. Besides the above, the Consumer Care Centre which is proposed to be located at Chennai under Part-A of R-APDRP will have the additional facilities of services in respect of LT billing for the entire Tamil Nadu.</p>
26	<p>TANGEDCO shall furnish half yearly status on Generation Planning.</p>	<p>Separate sheet is enclosed in Annexure III.</p>
27	<p>TANGEDCO shall furnish the status on improvements made in billing and collection system.</p>	<p>Report furnished in Annexure IV.</p>
28	<p>TANGEDCO shall furnish quarterly report on Performance Assessment of Distribution Circles</p>	<p>Quarterly report on performance Assessment of Distribution circles is being sent to Hon'ble Tamil Nadu Electricity Regulatory Commission.</p>
29	<p>TNEB (Now TANGEDCO) shall maintain consumption and revenue data strictly as per the slab-wise tariff categories.</p>	<p>Consumption and Revenue details on slab-wise Tariff wise is maintained in LT Billing Package.</p>

Information on Level of Distribution Performance achieved by TANGEDCO

Sl. No.	Service area covered under this standard	Targeted performance	Performance achieved by TANGEDCO during the quarters	Aggregate Compensation paid & number of consumers
1	Restoration of supply during interruption due to HT break down, fault in pillar box or transformer structure and fault in individual service connections	Licensee shall achieve 75% of the standards specified. Out of the balance, 20% shall be achieved within 24 hours from the time of complaint.	99.89	Rs.1250 for 2 consumers
2	Replacement of failed distribution transformer	95%	99.72	
3	Giving supply / additional load	95%	97.06	
4	Refund of balance deposit in temporary supply	90%	97.72	
5	Shifting of service	90%	99.53	
6	Change of Tariff	95%	99.69	
7	Transfer of service connection	95%	99.60	
8	Complaints in billing	95%	99.60	
9	Replacement of meters	95%	96.55	
10	Voltage fluctuation and voltage complaints	90%	99.24	
11	Responding to consumer complaints	90%	98.76	
12	Making and keeping appointments	95%	99.41	
13	Grievances handling	100%	100	

(By order of the Commission)

**(R.V.RAJAH)
SECRETARY**

Annexure-I

Remedial measures to curb theft of energy

In Tamil Nadu Generation and Distribution Corporation Ltd., 17 enforcement squads under the control of Additional Director General of Police / Vigilance Cell and one flying squad under the control of Chairman are functioning to curtail theft of energy.

Activities carried out to curb misuse and theft of electricity:

1. Frequent inspections are being carried out in HT industries
2. Surprise inspections on suspected industries are being carried out during night hours and holidays.
3. If the consumption pattern suddenly drops or boosts by 20%, then the respective service connections are being inspected.
4. Routine inspections are being carried out in HT and LT service connections.
5. Inspections, based on petitions and secret information received
6. Wide publicity on theft of energy is being carried out to create awareness on theft/misuse of electricity among the public through the respective Superintending Engineers/Electricity Distribution Circles.
7. To detect un-accounted energy, the studies are being carried out on the feeders.

Further, all the Superintending Engineers / Electricity Distribution Circles have been instructed to inspect the HT service connections whose current consumption charges exceed Rs.50 Lakhs per month, based on their production capacity, connected load and consumption. The Chairman/Flying squad has also been instructed to inspect the HT service connections whose monthly current consumption charges exceed Rs.1 Crore.

A target of Rs.160 Crores has been fixed for the year 2010-11. To achieve this target, intensive inspections have been carried out and 7 nos. of power thefts in HT service connections and 4944 nos. of power thefts in LT service connections have been detected as on 18-12-2010. So far, a sum of Rs.26.05 Crores has been levied as provisional assessment and Rs.2.34 Crores has been collected as compounding.

Annexure-II

Reasons for low performance of ETPS

- ❖ All the Units at Ennore Thermal Power Station are operated under lesser load due to Chloride ingress owing to usage of contaminated cooling water, Low condenser vacuum, Condenser tube failure, Boiler tube punctures, Turbine vibration, Rotor blade failure, etc. Being an old station, outages occur in various equipments due to various reasons which have decreased the power generation. However rectification works are being taken up then and there to reduce the forced outages in order to improve the generation and PLF.
- ❖ The Ennore T.P.S has not achieved the full load capacity since inception and average PLF is also less than 60% due to design deficiency in 110 MW Units.
- ❖ The major constraint in achieving higher and sustained generation with reduced outages of the Units at ETPS is the highly contaminated cooling water (i.e.) the sea water available at Ennore creek.
- ❖ Since contaminated cooling water is being used for the condenser cooling, the cooling water corrodes the condenser tubes resulting in abnormal condenser tube failures. Once the tube fails, the chloride in the cooling water mixes up with the DM water resulting in scale formation in Boiler tubes and salt deposits on Turbine blades.
- ❖ This results in frequent failures of Boiler tubes, high axial shift in turbine and high vibration of turbine rotors resulting in frequent blade failures. As the quality of cooling water available is very poor, the condenser tubes are renewed periodically besides carrying out repair in turbine rotors.
- ❖ In **Units-I & II (60 MW Boiler)**, the Boiler tube leakages were analyzed and observed that the tube leakages were mainly due to flue gas erosion on account of high ash content in the coal. In order to prevent tubes from erosion, shrouds and griddling bands were provided. Subsequently the tube leakages have reduced.
- ❖ **Units III & IV (110 MW Boilers)** have served for more than 9 years after R&M works. Due to ageing and flue gas ducts erosion, punctures occurred in the R.H. bends. R.H. bends were renewed partially during AOH period in 2008-09 & 2009-10. Balance RH bends have been programmed to be renewed during the forthcoming AOH periods.
- ❖ In **Unit-V (110 MW)** during R&M period, only partial pressure parts were renewed (platen S.H. and Cold Reheater tubes). Other areas i.e. Waterwalls, Economiser, Ceiling Superheater, Hot Reheater & Exit Superheater are not renewed. Boiler has served more than 1,50,000 hrs. of service and entire boiler replacement was not done during R&M as carried out in other units 1 to 4. Hence Boiler tube leakages occur frequently. Subsequently RLA study was carried out during 2009. Based on the RLA study reports, repair works are proposed to be carried out during forthcoming capital overhaul in 2011-2012. However the weak boiler tubes are being replaced during every overhaul.

- ❖ Since ETPS is having low capacity Units which have already served their life and having perennial cooling water problem, frequent forced outages occur resulting in low generation.

Benefits of R & M works carried out at ETPS:

All the Units had served their life time (more than 25 years) while they were released for R & M works. R&M works were carried out only on Boiler and partially on Turbine side. Instead of decommissioning the Units, the Units were given a new lease of life after R & M at a minimum cost when compared to the cost of setting up a new plant even considering the lesser generation achieved after R&M works.

Action plan to improve the generation:

- 1. In Unit-I**, the load is restricted due to salt deposits on the Turbine blades, high Curtis pressure, Chloride problem. **Now a load of around 35 MW is being maintained.** To improve the performance of the Unit, drum internal repair works have been carried out and condenser tubes were plugged and replaced partially. Further, during the Annual Overhaul works carried out in 2009, HP Rotor sand blasting had been carried out to overcome the High Curtis Pressure problem. Complete replacement of around 9200 Nos. of Condenser tubes with the Aluminium Brass material is proposed for execution during the ensuing overhaul.
- 2. In Unit-II**, the load is restricted due to high Turbine vibration and chloride ingress. Due to chloride ingress, the Unit II was operating with low PLF from Jan' 09. Hence shut down was availed and condenser tubes renewed, LP Rotor replacement works, HP Rotor sand blasting, etc. were carried out. along with Annual Overhaul works. **Now the Unit can be loaded above 50 MW.**
- 3. In Unit-III**, the load is restricted due to chloride and severe O2 crash problem. During 2008-09, a portion of APH tube along with fixing of sleeves were replaced to overcome O2 crash problem. Complete replacement of 13600 Nos. of Condenser tubes with the same Aluminum Brass material and replacement of APH tubes in 1A, 1B & 2A, 2B passes are proposed for execution during the AOH in 2011-12. **At present a load of around 55 MW is being maintained.**
- 4. In Unit-IV**, the load is restricted due to O2 crash, Low vacuum, Turbine Vibration due to aged Rotors, etc.
During the overhaul period in 2009, the following works were carried out:
 - To overcome O2 crash problem partial replacement of Air preheater tubes have been carried out.
 - To improve the vacuum, leakage in the vacuum circuit had been arrested.

At present a load of around 70 MW is being maintained.

- 5. In Unit-V**, only partial R & M works had been carried out and the load is restricted due to partial shaving of LP rotor blades, Reheater pressure limitation, Boiler tube Leak, etc.

At present the load cannot be raised beyond 82 MW due to high HRH pressure. RLA study of Boiler has been carried out during the shutdown during Sep '09. Order has been placed on M/s BHEL to procure LP Rotor and the supply is expected during the year 2011. On receipt of Rotor and based on the recommendation in the RLA study, improvement works are to be carried out during the forthcoming Capital Overhaul. **Now a load of around 60 MW is being maintained.**

Annexure-III

Current status and progress of Generation projects

I. (1x600 MW) UNIT -I NORTH CHENNAI THERMAL POWER STATION STAGE-II

TNEB proposed to establish a 1x500MW(Stage-II) Thermal Power Project in the vacant land available inside NCTPS Complex under State sector and Board accorded approval for the same vide B.P. NO.298 dt. 12.12.2005. The establishment of this project has been announced in the address of His Excellency the Governor of Tamil Nadu in the Assembly during May 2006. The estimated cost for NCTPS, Unit-I including IDC is Rs.3552 crores.

EPC cum Finance Contract was awarded to M/s.BHEL on 19.01.2008 for 600MW at a cost of Rs 2475 crores and M/s.BHEL have declared the zero date as 18.02.2008.

M/s.BHEL has started the site activities on 10.09.08. Civil Foundation works for main plant has been completed and balance of plant is in progress. Superstructure works are in progress in DG Building, Air Compressor Building and service building. RCC shell concreting has been completed for chimney, common for both the units and flue can erection for Unit-I is in progress. Boiler column erection work was commenced by M/s. BHEL on 01.06.09. Boiler drum was lifted on 12.4.10. BHEL has programmed to conduct the Hydraulic test during Feb.'10. Erection works are also in progress in ESP, power house and common control room, compressor, coal handling plant etc.,

The scheduled date of commissioning of the project is 17.02.2011(36 months from zero date) with commercial operation on 17.05.2011(39 months from Zero date. However, as per present position in progress of works, the project is expected to be commissioned by Nov.'11 (with a time delay of about 6 months).

Financial Progress: Financial tie up is made with Rural Electrification Corporation (REC) Ltd/New Delhi by BHEL. Payment of Rs.1068.27 crores has been made by REC to BHEL so far.

II. (1x600 MW) UNIT-II NORTH CHENNAI THERMAL POWER STATION STAGE-II

TNEB has awarded contract to M/s.BHEL for establishing 1X600MW NCTPS Stage-II Unit-II Project in the vacant land available inside NCTPS Complex and adjacent to already awarded 1X600MW unit-I of NCTPS Stage-II under negotiation route at a cost of Rs.2175/- Crores vide

B.P.No.105 (Tech branch) dt.25.06.08. The total estimated cost including IDC is Rs. 2718.75 Crores. The zero date is 16.08.08 (the date of release of 5% EPC price as initial advance).

The project shall be synchronized within 36 months (i.e.15.08.2011) and COD shall be achieved within 39 months (ie., 15.11.2011) from zero date.

M/s.BHEL has started the site activities on 01.11.2008. Boiler drum lifting was conducted on 25.03.2010. Turbo-Generator (TG) deck concreting was completed on 24.09.2010. Power House column & TG floor erection are in progress. Erection of TG & Auxiliaries will be commenced from January 2011.

Civil works are in progress in Balance of Plant area. This unit will be expected to be commissioned as scheduled in November 2011.

Financial progress:

Rural Electrification Corporation (REC) Ltd/New Delhi has sanctioned an amount of Rs.2175 Crores towards Loan for the above project. Out of Rs.2175 crores, Rs.874.02 crores including 10% advance (2 installments) payment has been made so far.

III. (1X600 MW) METTUR THERMAL POWER PROJECT - STAGE III

As suitable land of sufficient extent and all other infrastructure facilities are available in the existing Mettur Thermal Power Station Complex itself, the proposal for setting up 1x600 MW, Coal based Thermal Power plant in MTPS Complex has been approved by the Board vide B.P. (FB) No.113 dt 14.06.2006. The estimated cost of the project including IDC is Rs 3550 crores.

The tender for establishing the 1 x 600 MW Mettur Thermal Power Project (Stage-III) was awarded to M/s BGRESL, Chennai on 25-06-2008 at a cost of Rs 3100 crores. The EPC contractor has established their site office, civil laboratory, batching plant etc. 1.4 Kms length of compound wall completed out of 2.412 kms. Boiler foundation completed. 1st milestone activity of Boiler Structural Column Erection started on 29.09.09. Second Mile stone activity of Boiler Drum lifting completed on 25.02.2010. Boiler Pressure Parts erection works nearing completion. It is proposed to conduct Boiler Hydraulic test (3rd milestone activity) during the end of January 11.

STG Foundation works completed. TG deck concreting completed. HIP Turbine, LP Rotor, Generator Stator and Rotor, ESP were received from China. Condenser fabrication in progress. TG Erection to be started soon.

Foundation for ESP completed. ESP control room works under progress. 230 KV GIS Building alongwith equipments installation completed. 400 KV GIS Building works completed. Equipment Installation works under progress. 230 KV & 400 KV GIS Control Room Building plastering under progress.

Shell construction of Chimney completed upto the full height of 275 meters on 01.03.10, Inner Corbel concreting work under progress. Ring beam and upto 50th lift completed in Natural Draft Cooling Tower and concreting of 63st lift out of 91 completed.

BGRESL, Chennai has accepted to bring the unit 2 months ahead of Schedule, for Synchronization and Commercial Operation Date (i.e) Synchronization by 16.04.2011 and commence the commercial operation by 21.07.2011. However, as per the present pace of progress carried out by BGRESL, the Unit will be brought into service as per the schedule date,(i.e) synchronization by June 2011 and Commercial Operation Date by September 2011.

Financial progress:

Financial tie up is made with Power Finance Corporation. So far expenditure incurred is Rs.1598 crores.

IV. (1 X 600 MW) ENNORE THERMAL POWER STATION (ANNEX)

TNEB has proposed the setting up of a coal based thermal power station of capacity 1x600 MW in the vacant land available within the existing Ennore Thermal Power station under state sector. About 84 acres of barren land is available on the southern side of the existing plant within the ETPS station is proposed to be developed for the upcoming 600 MW project.

Besides the land, coal movement through the Ennore port, Existing Ash pond and Railway siding in ETPS, Road and rail facility available for transport of men and materials, sea water for condenser cooling etc., can be best utilized for the new project so that there will be enormous savings in the capital cost of the project. Besides, it is proposed to get coal through pipe conveyors from Ennore port/NCTPS yard to ETPS directly. It is also proposed to draw water from the deep sea for condenser cooling purposes and to produce DM water using RO plant for this project.

Taking advantage of the above facilities, Board has accorded approval for establishing the project vide Per B.P(FB) No. 163 (Technical Branch) dt. 5.9.2006. The GOTN approval has also been received vide Energy Dept. Lr. No. 129/B2/06 dt. 8.12.2006.

All the statutory clearances required for the project have been received. M/s Desein Private Limited , New Delhi has been appointed as consultants for the project. Open Tender under International competitive bidding for establishing the 1x600 MW plant has been opened on 20.12.10. Tender evaluation is in progress. The award of EPC contract for this project is expected during February 2011.

The estimated cost of the project is about Rs.3136 Crores and the project is scheduled to be completed by 2014-15.

V. ESTABLISHMENT OF ENNORE SEZ PROJECT OF 2X800MW COAL BASED SUPERCRITICAL THERMAL POWER PLANT IN THE ASH DYKE OF NORTH CHENNAI (KATTUPALLI)

TNEB has accorded approval vide Per.B.P(FB) No.88 dated 12.08.2009 to change the project site location for the establishment of Ennore SEZ Project of 2x600MW or 2x800MW capacity from the proposed land in the Ennore Multi Special Economic zone of TIDCO to the nearby Primary Ash Pond-I of NCTPS Ash Dyke in Thiruvallur District under State Sector, depending upon the feasibility. The present status of the project is furnished below:-

- ❖ Govt. of TamilNadu has already been approached for the issue of G.O. and the same is awaited.
- ❖ Application fee of Rs. 5 Lakhs paid to Ministry of Coal on 25.2.2010 for getting long term coal linkage and the same is being closely followed up.
- ❖ M/s. Ramky Enviro Engineers Ltd, Hyderabad -82 have been appointed as consultants for conducting EIA study. Pre-feasibility report for this project was prepared on 11.01.2010 by TNEB itself.
- ❖ MOEF clearance is yet to be received. Aviation Clearances required for the project has already been obtained from Airport Authority of India during May '2010.
- ❖ Consultancy contract has been awarded on 20.11.2010 to M/s.Cethar Consulting Engineers (Pvt.) Ltd for the preparation of DPR.

The estimated cost of the project is about Rs.9600 Crores and the project is scheduled to be completed by 2015-16.

VI. ESTABLISHMENT OF CO-GENERATION PLANTS WITH SUGAR FACTORY MODERNIZATION IN CO-OPERATIVE AND PUBLIC SECTOR SUGAR MILLS IN TAMIL NADU.

Government of Tamil Nadu vide G.O.No.24 dated 26.02.2008 has directed TNEB to establish Co-generation facilities in Twelve Co-operative and Public Sector Sugar Mills by obtaining debt loans from Financial Institutions like Power Finance Corporation, IREDA and Sugar Development Fund . Equity contribution for 10% is being arranged by individual Sugar Mills through farmers and balance Equity fund if required shall be through participation of TN Government.

Capital Grant on exportable power is available for all 12 Projects from MNRE, Govt of India. The Projects are also eligible for CDM Benefits.

Concurrently Modernization of Sugar Mill is also being taken up in all the 12 Sugar Mills to reduce steam consumption in the Sugar Mill and optimize the Power Generation and Export.

TNEB has executed the EPC Contract in February 2010 with Walchandnagar Industries Ltd, Pune to Design, Implement and Commission at a total EPC cost of Rs.1125.63 crores for all the 12 Cogen Projects in 18 Months (October 2011) for a total generation capacity of 183 MW. All projects are expected to be completed before October 2011. As per Schedule civil works are under progress for all the 12 projects.

VII BHAVANI KATTALAI BARRAGE HEPs:

1. BHAVANI KATTALAI BARRAGE 2 HEP (2 x 15 MW)

Type	:	Hydel
Capacity	:	2 x 15 MW
Project Cost	:	Rs.497.46 Crores.
Date of Commissioning	:	Unit I : 06/2011 Unit II: 08/2011

Present Status:

- a. Weir/Apron concreting for all the vents completed.
- b. Pier concreting for all the vents completed.
- c. Launching of road girders/gantry girders and casting of deck slab completed for all the vents.
- d. Power House Sub Structure and Super Structure works completed.
- e. Erection of Intake gate, D.T. Gate and Trash rack completed.

- f. Erection of Stay ring of Units I & II completed.
- g. E & M equipments supply completed and erection 43% completed.

Overall Progress: 90 %

Financial progress: So far expenditure incurred: Rs.334.97 Crores.

2. BHAVANI KATTALAI BARRAGE 3 HEP (2 X 15 MW)

Type	:	Hydel
Capacity	:	2 x 15 MW
Project Cost	:	Rs.396.59 Crores.
Date of Commissioning	:	Unit I : 11/2011 Unit II: 12/2011

Present Status:

- a. Weir/Apron concreting for all the vents completed.
- b. Pier concreting for all the vents completed.
- c. Casting of Road Girders completed and erection 80% completed. Gantry Girder casting 80% completed and erection 70% completed. Deck slab completed for 9 spans.
- d. Power House Sub Structure and Super Structure works 98 % completed.
- e. Erection of Intake Gate, Draft Tube Gate and Trash rack completed.
- f. Erection of E & M equipment 8% completed.
- g. Erection of Stay Rings of Units I & II completed.

Overall progress: 74 %

Financial progress: So far expenditure incurred: Rs 304.16 Crores.

VIII. PERIYAR VAIGAI SMALL HEPs

1. PERIYAR VAIGAI 1 SMALL HEP (2 x 2 MW)

Type	:	Hydel
Capacity	:	2 x 2 MW
Project Cost	:	Rs. 55.45 Crores
Date of Commissioning	:	Unit I : 02.11.2010 Unit II: 10.01.2011

Present Status:

- a. Weir Portion completed.

- b. Power House Sub Structure works completed.
- c. Power House Super Structure works completed.
- d. Erection of Penstock Pipe Completed.
- e. Supply of Turbine & Generator Equipments 100% completed.
- f. Erection of Turbine & Generator equipments 99% completed.

Overall project progress: 99%

Financial progress: So far expenditure incurred: Rs 40.32 Crores.

2. PERIYAR VAIGAI 2 SMALL HEP (2 x1.25 MW)

Type	:	Hydel
Capacity	:	2 x 1.25 MW
Project Cost	:	Rs.45.11 Crores
Date of Commissioning	:	March 2011

Present Status:

- a. Weir Portion, Radial gate and Intake Structure works 98 % completed.
- b. Power House Sub Structure works completed.
- c. Power House Super Structure works 95% completed.
- d. Erection of Penstock Pipe Completed.
- e. Supply of Turbine & Generator Equipments 60 % completed.
- f. Erection of EOT crane and DT liner has been completed.

Overall progress: 80%

Financial progress: So far expenditure incurred: Rs.24.37 Crores

3. PERIYAR VAIGAI 3 SMALL HEP (2 x2 MW)

Type	:	Hydel
Capacity	:	2 x 2 MW
Project Cost	:	Rs.66.42 Crores
Date of Commissioning	:	July 2011

Present Status:

- a. Balance Weir Portion completed.
- b. Power House Sub Structure and Super Structure works 14% completed.
- c. Tail Race Excavation completed.
- d. Fabrication of Penstock completed.
- e. Supply of Turbine & Generator Equipments 80 % completed.

Overall progress : 48%

Financial progress : So far expenditure incurred: Rs 34.00 Crores.

4. PERIYAR VAIGAI 4 SMALL HEP (2 x1.25 MW)

Type : Hydel
Capacity : 2 x 1.25 MW
Project Cost : Rs.52.83 Crores
Date of Commissioning : May 2011

Present Status:

- a. Weir Portion, Radial Gate & Intake Gate Works 99% completed.
- b. Power House Sub Structure works completed.
- c. Power House Super Structure works 85% completed.
- d. Erection of Penstock Pipe Completed.
- e. Supply of Turbine & Generator Equipments 60 % completed.

Overall progress : 80%

Financial progress : So far expenditure incurred: Rs.29.55 Crores.

IX. 1. (2 X 5)MW BHAVANI BARRAGE – 1 HYDRO ELECTRIC POWER PROJECT

Type : Hydel
Capacity : 2 x 5 MW
Project Cost : Rs.141.38 Crores
Date of commissioning : November 2011

Present Status:

- a. Weir, pier, apron concrete 70% completed.
- b. Casting of road girders/gantry girders 50% completed.
- c. Fabrication of Intake gates, barrage gates and EOT crane completed. Erection to be started.
- d. Stay ring fabrication completed and erection to be started.
- e. Power House Sub Structure 84% completed.
- f. Power House Super Structure 25% completed.
- g. Supply of Generating Equipments 66% completed.

Overall progress : 70%

Financial progress : So far expenditure incurred: Rs 96.08 Crores.

IX. 2. (2 X 5)MW BHAVANI BARRAGE – 2 HYDRO ELECTRIC POWER PROJECT

Type	:	Hydel
Capacity	:	2 x 5 MW
Project Cost	:	Rs.151.73 Crores
Date of commissioning	:	6/2011

Present Status:

- a. Barrage Weir, pier and apron concrete completed.
- b. Casting of road girders/gantry girders completed.
- c. Intake gates, Draft tube gates, Barrage gates, EOT crane all fabrication completed. Out of 6 Nos Barrage gates 2 Nos completed.
- d. Power House Sub Structure 98% completed.
- e. Power House Super Structure 75% completed.
- f. Supply of Generating Equipments 78 % completed.

Overall progress : 78%

Financial progress : So far expenditure incurred: Rs 112.34 Crores.

JOINT VENTURE PROJECT

X. VALLUR THERMAL POWER PROJECT (3 x 500 MW) (JOINT VENTURE PROJECT WITH NTPC)

TNEB and National Thermal Power Corporation (NTPC) a Govt. of India undertaking signed Memorandum Of Understanding (MOU) on 12.07.2002 for establishing a 2X500 MW coal based thermal power plant at Vallur, Thiruvallur District, North Chennai. In this connection, a joint venture company namely NTPC – Tamil Nadu Energy Company Ltd (NTECL), was registered on 23.05.2003

It was proposed to add one more 500 MW unit in the project and this project have two units of 500 MW in Stage I and another one unit of 500 MW in stage II. The total project cost for Stage I and Stage II is Rs.8000 Crores. The identified site for the project is 1000 acres of saltpan land in the Vallur Village and Ministry of Commerce and Industry; Government of India has allotted the land.

All the clearances required for the project including Ministry of Environment and Forest (MOEF) has been obtained for the project. Main plant package has been awarded to M/s. BHEL on 13.08.2007 for Stage I and for Stage II on 28.07.09. The contract for other major packages have also been awarded. The construction activities of the Project are in full swing. The lifting of Boiler Drum for unit I & II has been completed by M/s. BHEL. Turbine Generator erection for

unit I is in progress. Boiler Hydro Test was completed on 14.06.2010. The Boiler Light Up is expected in March 2011.

Ministry of Power/ GOI has allocated 1040.6 MW Power from this Project. We requested the GOI to allocate a minimum of 75 % (i.e.) 1125 MW. The commissioning of the Project is scheduled in October 2011 for Unit – I, December 2011 for Unit II and November 2012 for Unit- III.

XI. NTPL - TUTICORIN THERMAL POWER PROJECT (2 x 500 MW)

(JOINT VENTURE PROJECT WITH NLC)

TNEB and Neyveli Lignite Corporation (NLC) a Government of India undertaking signed Memorandum Of Understanding (MOU) on 19.06.2003 for setting up 2 x 500 MW coal based thermal power plant at Tuticorin. The project cost is about Rs.4900 Crore. A joint venture company namely NLC – Tamil Nadu Power Ltd (NTPL), has been registered and the project development activities are in progress. About 108 hectares of Tuticorin Port Trust (TPT) land adjacent to existing TTPS has been identified for the project and NLC have signed MOU with TPT for allotment of above land. Ministry of Environment & Forest/ GOI (MOEF) has accorded environmental clearance to the project on 13.06.07.

The Cabinet Committee on Economic Affairs has approved the project on 12.05.2008 and the project activities at site have commenced. M/s MECON has been appointed as consultant for this project. The tender for Main Plant has been awarded to M/s.BHEL on 28.01.2009. All other major packages have also been awarded and the works have been commenced for all packages at site. GOI has fixed target for commissioning the unit I in March 2012 and unit II in August 2012.

Government of Tamilnadu is demanding 750 M.W (75%) Power allocation from this Project. But Ministry of Power/ GOI has allocated 387 MW Power from this Project. Hon'ble Chief minister of Tamil Nadu has already taken up this issue with Hon'ble Prime Minister of India to allocate minimum 75% Power to Tamil Nadu.

XII.UDANGUDI SUPER CRITICAL THERMAL POWER PROJECT(2x800MW) (JOINT VENTURE PROJECT WITH BHEL)

TNEB and Bharath Heavy Electricals Limited (BHEL) a Govt. of India undertaking signed Memorandum Of Understanding (MOU) on 26.10.2007 for establishing a 2X800 MW coal based Super critical thermal power plant at Udangudi, Tuticorin District. This project is intended to have Clean Development Mechanism benefits. The estimated project cost is about Rs.9,083 Crore

As per the MOU the equity share pattern is TNEB: 26 % ; BHEL : 26 % ; Financial institutions : 48 %. BHEL will supply the Main plant equipment for the project and TNEB will depute personnel for the execution of the project and also Operation and Maintenance of the plant. The company has been formed and registered as 'Udangudi Power Corporation Ltd.' The JV Agreement has been signed on 26.11.2008, subsequently the JV company has been incorporated on 26.12.2008. The first Board meeting of the JV Company was held on 07.01.2009.

The identified site for the project is 307.72.0 hectares (760 acres) of Govt. poramboke land in the Udangudi Village and GOTN has accorded enter upon permission on 29.02.2008 to carry out the preliminary project activities. GOTN has issued order for alienation of 305.31.0 hectares of poramboke land to TNEB on 23.02.2010.

GOTN has also issued administrative sanction for the alienation of 116.18.5 hectares of patta land on 22.03.2010 for formation of pathway to take water to Industries and for the construction of quarters to the employees. The issue of notification is in progress. The site studies have been completed. Topography survey and Marine bore hole studies have been completed. Bathymetric study for construction coal jetty is completed.

MOEF expert committee for Environmental Impact Assessment has recommended clearance for this Project. But MOEF has de-listed and kept the project in abeyance for want of firm coal linkage. The above coal linkage is perused at Ministry of Coal. Long-term coal linkage is yet to be obtained. M/s IIT, Madras has given feasibility report for establishing separate coal jetty near the site. M/s. National Institute of Oceanography is conducting model studies for finalizing the location of coal jetty for the project.

The work of Site leveling & Compound wall are in progress. The Tender for Consultancy & Owners Engineering Services are under progress. After receipt of MOEF clearance, BHEL will be awarded for Main plant Works. The Unit I of the Plant is expected to be commissioned by March 2013 and Unit II by September 2013.

Annexure-IV

Status of billing and collection in TANGEDCO:

1. HT Billing (Consumer Base : 7150)

Billing: The HT Billing Software has been developed in Client – Server Technology with Oracle as Backend and Developer 2000 as front end and loaded in all the 39 Distribution Circles from 2001 onwards. As and when the instructions are received from the Accounts wing regarding the modifications in Procedure, necessary modifications are carried out in all the 39 circles.

Collection: The HT Collections are being done in all the 39 Distribution Circles through the HT Collection module. The facility of ECS Payment for HT Consumers of Chennai Regions was introduced from February 2009 onwards. The same has been extended throughout the State from 01.12.2010.

2. LT Billing: (Consumer Base : 2.1 Crores)

Billing:

1. 30 Days Assessment and Collection:

The Assessment system in force is that the Assessment being done during the second half of the month and the Collection done during the first half of the succeeding month with a fixed due date of 15th.

The 30 days assessment and collection facility has been introduced in Chennai-North Region to facilitate the consumers by giving 20 days time period for making their payments so as to reduce the peak days crowd at the collection counters by evenly distributing due dates for making payment throughout the month.

This scheme has been extended to 3 more regions (Chennai South, Coimbatore and Erode) and will be extended to other remaining 5 regions shortly.

2. All Account Head Collection: Presently consumers can make their current consumption charges only at the Assessor counter and if any other payment is due (for eg. either ACCD or miscellaneous arrears), he has to pay at the IA/RS Counters. The consumer has to stand in one queue for paying the regular CC Charges and then on to the next queue for paying other charges.

With a view to mitigate this problem, the consumers can now make any payment (Current Consumption Charges or arrears or miscellaneous payment) at any counter (Assessor/IA/RS). This facility has been implemented in Erode Region from 08.11.2010 as a trial measure and will be extended to all other regions in a phased manner.

3. HHD: The firmware in the Hand Held Devices has been modified to suit the 30 days assessment and Collection methodology. This facility is under testing in selected section

offices and will be expanded shortly to other areas. Provision has been made in the software to facilitate the cheque collection during the assessment process itself.

Collection:

1. Collection through ATP: Collection through Any Time Payment Machines are available at 4 locations in Chennai. (TANGEDCO HQ, TNagar, Wallajah Road and Sowcarpet). Through this facility consumers can pay their Current Consumption charges 24 hrs a day.

2. Collection through Internet: The consumer can make their payments (Current Consumption Charges or arrears or miscellaneous payment or advance amount) through internet by using the Payment Gateway (M/s. Axis, M/s. ICICI), through Net banking (M/s. Axis, M/s. ICICI, M/s. Indian Bank, M/s. Indian Overseas Bank, M/s. City Union Bank) and through Debit card (M/s. Indian Bank, M/s. Indian Overseas Bank, M/s. Canara Bank). This facility has been extended throughout the state since 1.12.2010.

3. Collection through Post Offices: The LT electricity bill collection (Current Consumption Charges or arrears or miscellaneous payment) was introduced through 2 Nos Post Offices in Chennai from 01.03.2010 and was later expanded to 50 post offices in Chennai from 01.06.2010. This facility has been expanded to selected post offices across the State from January 2011.

4. Collection through HHD's with Printers: Camp Collection was hitherto done using manual Pre-receipts. This will henceforth be done through HHD's with printers and printed receipts will be issued to consumers when the collection is done at Camp Collection Centers. The system is under test in few sections and will be implemented throughout the State.

5. Under Progress:

- i) LT Bill collection through Bank ATMs.
- ii) Collection through Common Service Centre.
- iii) Tamil Nadu Government Department's electricity bill Collection through Treasuries via ECS mode.
- iv) Interfacing Software development work for the internet payment for Bank of Baroda (*Credit card Payment Gateway, Net Banking, Debit card, ATM*), State Bank of India (*credit card Payment Gateway, Net Banking, Debit card, ATM*), Karur Vysya Bank (*Net Banking, Indian Overseas Bank (credit card Payment Gateway)*) are under progress.
