

NATIONAL ENERGY CONSERVATION AWARD-2004

COMPANY PROFILE

SUBMITTED BY

**M/S ITI LIMITED,
ESS UNIT, MANKAPUR
GONDA (UP)**

ITI LIMITED
MANKAPUR, GONDA (U.P.)

COMPANY PROFILE:

ITI Limited is the first Public Sector Undertaking established in the year 1948 at Bangalore. The company was set up with a motto to meet the total telecom requirement of country. The former Hon'ble Prime Minister late Smt.Indira Gandhi set up Mankapur Unit in the year 1982 in the eastern part of U.P., which is known as "Digital City of India". The Unit is accredited ISO: 9001:2000 and ISO: 14001 for reliable quality and environment. The unit is one of the largest unit of ITI Limited in terms of capital employed .It is having a dedicated workforce of 2141 technical experts for rendering their services to the 'Telecom and IT sector'.

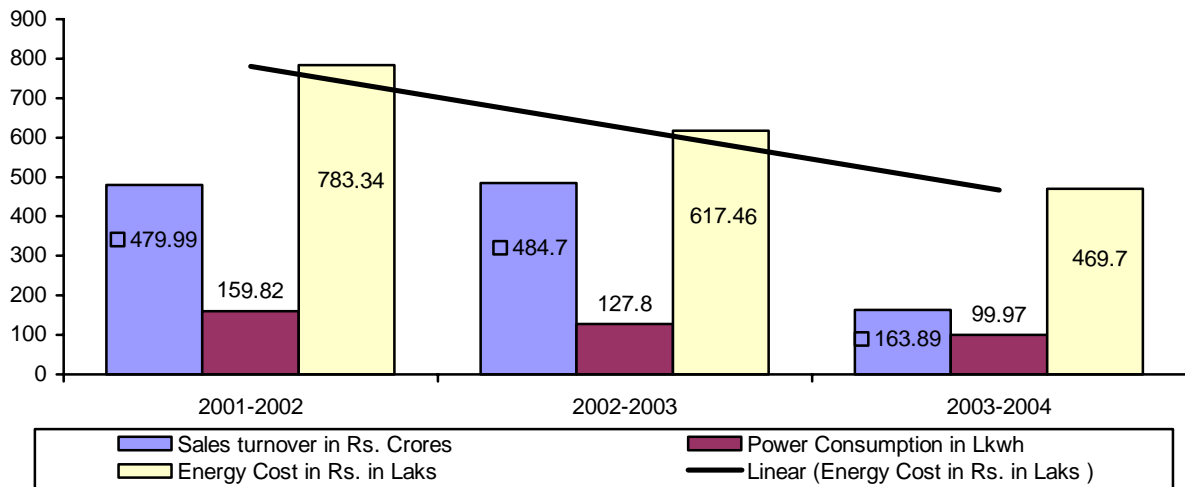
- The unit was established to manufacture 500 Kilo Line of Digital Switching Equipments (E10-B) under the technical collaboration with M/s ALCATEL, France.
- Capacity extended to manufacture 500 Kilo Line of CSN (OCB 283 technology) during 1993-94 in collaboration with M/s ALCATEL, France.
- The unit started MAX-L/XL production also during the year 1998-99, and established all necessary infrastructure/facility by the end of year 1999.
- A part from manufacturing the unit entered into services also in GSM technology based mobile telephone in collaboration with M/s Lucent Technologies, USA. in 2000 and now engaged in installation & commissioning of 04 million lines in western zone of BSNL in collaboration with M/S Alcatel , France.
- "IT Center" has been setup to start the business in the field of Information Technology.
- The unit has diversified their focus in non- telecom products especially for power solution equipments i.e. Invertors/UPS& banking solutions i.e. NCM, NBM.CDS and FNS machines with technical collaboration with M/s Albertsons, Bangalore 2003-04.
- Mankapur unit has planed to start GSM – BTS manufacturing in 2004-05 under the technical collaboration with M/s ALCATEL, France.

(II) Energy consumption:

The unit is well aware about energy efficiency, which not only provides a highly cost effective and environmentally benign solution to meet energy demand, but also help in reduction of power cost. The Unit has accorded priority for reduction in energy consumption by putting consistent efforts towards monitoring of production / non production operations / activities as well as company assets management. The details of energy consumption & saving achieved during last three years are as below:

DESCRIPTION	2000-01	2001-02	2002-03	2003-04
Power Purchased in L.KWH	163.16	154.39	124.94	98.36
In-House generation in L. KWH	07.50	05.43	02.86	01.61
Total Power consumption in L. kwh	170.66	159.82	127.80	99.97
Total energy cost in Rs. Lakhs	854.04	783.33	617.45	469.70
% Reduction in energy over 2000-01	-	06.35	25.11	41.42
% Reduction in amount over 2000-01	-	08.30	27.70	45.00
Sales Amount in Rs. Lakhs	38186.23	47999.07	48470.57	16389.07
Specific energy cost in % over sales	02.23	01.63	01.27	02.86
* The thermal energy is utilized for Captive Power Plant operation not for production				

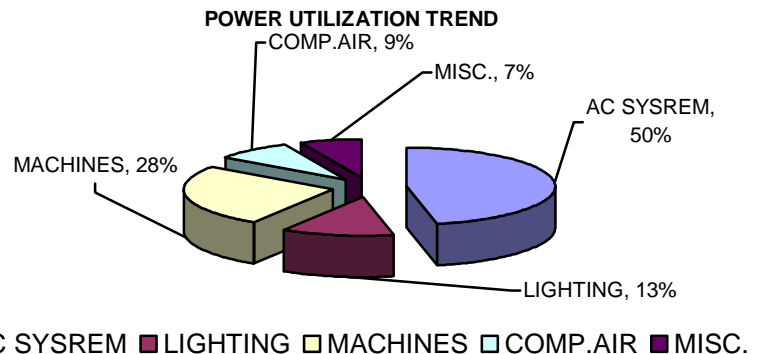
Comparative sales and Energy cost



Reduction of Electrical Energy Consumption

The entire Plant load is categorized as follows:

- ❖ Air Conditioning
- ❖ Lighting
- ❖ Compressed Air
- ❖ Machine Load
- ❖ Misc



The Plant has 44,300 Square Meter air-conditioning area, 2000 Square Meter FDV area having a total of 77,500 Square Meter covered area. Being the electronic industry, the machine load is not much and depend on production.. As such special effort was made to reduce the energy consumption by re scheduling the operation in air conditioning plant, compressed air plant by providing WA/C & smaller compressors. It is further to mention that since inception of mobile communication, production of landline exchange equipment has been considerably affected . Due to this reason production of any major products has not lasted for more than a year.

Energy Conservation Commitment, Policy and Set Up

Commitment:

- ☞ The Unit is committed to promotion of energy efficiency and to reduce the need to create new capacities, which requires mobilization of huge resources.
- ☞ To intensify the in-house efforts for improving energy efficiency, Energy Conservation Cell and Core Committee has been set up by the management.

ENERGY CONSERVATION POLICY

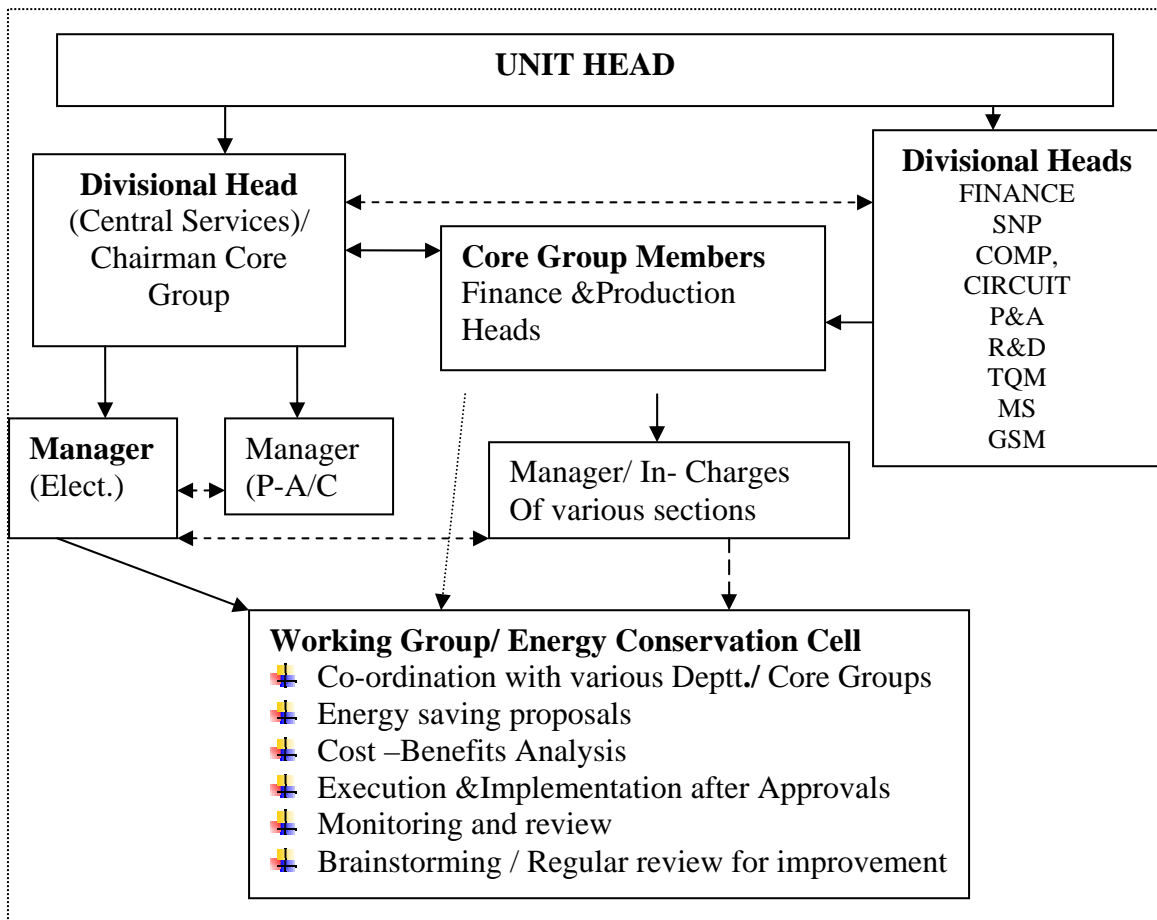
ENERGY CONSERVATION POLICY

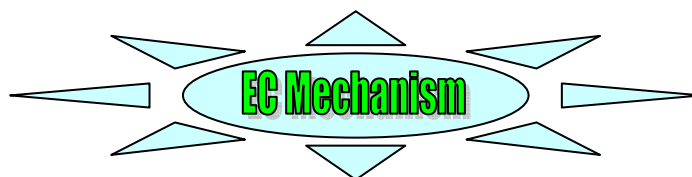
We, at ITI Limited Mankapur Unit are committed to adopt energy conservation measures in all our activities, products and services across the unit.

Our Mission is:

- ❑ To control energy consumption by adopting best practices and energy efficient processes.
- ❑ To control energy consumption by producing energy efficient products.
- ❑ To conduct regular management reviews to ensure continual improvement.
- ❑ To conduct energy conservation awareness programs throughout the unit.
- ❑ To recognize efforts of our employees and their families in energy conservation initiatives.
- ❑ To ensure energy consumption reduction by 05% each year.

ENERGY CONSERVATION STRUCTURE:





* **Monitoring and targeting** is the key to energy conservation on daily basis.

* **Norms** are set up on the best performance and practices in past three years.

* **Process Modifications** are focused to conserve the environment, economy and energy & use of non- hazardous chemical.

* **Small Group Activities** are conducted in –house for CAPA (corrective and preventive action) on the basis of planned and actual performance.

* **Brainstorming** – To promote the innovative ideas from brainstorming sessions of various groups.

* **Volunteers participation schemes** from all individuals, suggestions are invited for improvement in a constructive structured manner.

* **Six –Sigma Approach** is adopted to maintain the improvement techniques.

* **Create awareness** among employees and their families by conducting programs on the eve of National Energy Conservation Day.

ENERGY CONSERVATION ACHIEVEMENTS:

Major energy conservation achievements in the Unit during FY: 2003-2004 are as follows:

1	<p>Installation of valves to control flow rate and mixing:</p> <p>Background: Due to malfunctioning of NRV’S at pumps& chillers, chilled water & condenser water flow has no control. Three or four condenser pumps are in operation even when one compressor is in operation More over due to above, hot water (in let to chiller) is passing through chillers, which are not in operation and mixing with cold chilled waters (out let to chillers) which leads to energy loss.</p> <p>Observation; For one operating chiller, one condenser & one chilled water pump is sufficient to run.</p> <p>Action Taken: NRV’S & Valves were replaced, which has avoided mixing of hot & cold water.</p> <p>Savings: Rs.40.80 Lakhs/annum</p> <p>Investment: Rs.17.50 Lakhs</p>
----------	---

2	<p>Installation of APFC relays to PF management: Background: Higher P.F. reduces KVA Demand, IR losses, increase over all efficiency & reduces energy cost due to introduction of KVAH billing. 6X200KVAR & 5X100 KVAR capacitors were installed which are being operated manually. Observation: The average monthly power factor was varying from 0.89 to 0.92. By installation of EMS (Energy Management System), it has been observed that PF is on leading side during off load periods Action Taken: Intelligent automatic power factor controller (11 Nos.) was installed. Saving: 12.8 Lakh per annum Investment: Rs.01.50 Lakhs</p>
3	<p>Installation Of Decentralized Chilled Water Plant for CSN: Background: In CSN –MM technology has been upgraded for manufacturing, which Chilled needs water for Re-flow machine in SMD line. Observation: The existing chilled water line laying and operating are costlier to run for this section. Action Taken: A separate ‘Voltas ‘make chilled water plant has been installed to meet out the requirement. Savings : 03.80 Lakhs per annum Investment: Rs.04.10 Lakhs</p>
4	<p>Running of Central A/C plant in ‘G’ shift by providing WAC at vital area: Background: The running of Central a/c is too much costlier after G shift due to peak load hours to provide air- conditioning for SITC testing work that is carried out up to extra time due to work order schedule delivery. Observation: The central a/c plant to be run in G shift only & The 4x1.5 ton Window Air-conditioners provision has been made to avoid running central air-conditioning plant in extra shift working. Action Taken: 04 nos. of window air-conditioners has been installed in SITC area of SEA plant. Savings: 10.22 Lakhs per annum Investment: 00.60lakhs</p>
5	<p>Replacement 750 nos. by E + Energy Efficient Tube Light: Background: 500 No65 W FTL in Metal Part Plant (16 hrs working) & 250 Nos 65 W. in passage/security lighting (24 hrs working) were installed. These tubes were consuming more power than E⁺ tube- light which works without starter and choke was with same illumination & being manufactured by M/S Asian Electronics, New Delhi Observation: 65 W, FTL with copper ballast consume 75 W power, whereas E⁺ tubes consume only 30 W Power, which is 60 % lower. Action Taken: M/S Asian Electronics, New Delhi agreed for installation of above on 12 bi-monthly payments against saving achieved. The 750 numbers of E⁺ tube- lights had been installed in factory area in Security lighting / passage lighting & Metal Part. Savings: Rs.16.55 Lakhs /annum. Investment: Rs.6.825 Lakhs(Payment in installment spread over two years)</p>
6	<p>Electronic Choke and regulators replacement in PCB: Background: The plant has used copper chokes and resistance type fan regulators.</p>

	<p>The use of electronics chokes and regulators results in energy savings up to 70%. Observation: In PCB the total conventional copper choke and resistance type fan regulators has been replaced with e-choke and regulators. Action Taken: The e- chokes and regulators in all FTL and fans of PCB have been replaced. Savings: Rs.04.02 Lakhs. Investment: Rs.0.38 Lakhs.</p>
7	<p>Thermal insulation of chilled water & condenser water line of CMB area is replaced: Background: The plant has installed chilled water lines to provide chilled water for various shops for utilization of different types of process. The pipelines were laid underground. The temp. drop is directly loss of energy. Observation: In CMB the chilled water line temperature drop observed too high due damaged of insulation and rusted pipelines. Action taken: The thermal insulation of the pipelines has been replaced including replacement of damaged pipelines. The new pipeline has been laid on the ground surface: Savings: Rs.02.00 Lakhs Investment: Rs.09.70 Lakhs.</p>

ENERGY CONSERVATION PLANS AND TARGETS

Energy conservation is an ongoing process at ITI Limited, Mankapur and Plant is committed for it and always looking for new avenues on continuous basis. Following major proposals are in hand as a part of its future plans for energy conservation:

- ❖ Installation of Computerized Energy Monitoring Energy Management System for all production & non-production activities.
- ❖ Replacement of 2X25 KVA, 2X120 KVA UPS which is consuming much power by energy efficient UPS
- ❖ Replacement of 5 Nos. cooling tower of DG Set with FRP blades
- ❖ Replacement of V-Belts with synthetic belts
- ❖ Replacement of secondary chilled water pumps
- ❖ Replacement of HPMV lamp by Metal Halide lamp
- ❖ Further review of decentralized small capacity air compressors
- ❖ Use Exhaust fan controllers
- ❖ Installing VSD (variable speed drives)
- ❖ Retrofit in electric drives by star mode /Use of Energy Efficient Motors
- ❖ Retrofit in Air – conditioning cooling tower by using FRP blades.

ENVIRONMENT AND SAFETY

Environment:

- ✓ The Unit has been accredited ISO: 14001 certificate in 2003-04 for its PCB Plant.
- ✓ The Unit has installed ultramodern Effluent Treatment Plant.
- ✓ The Unit is dedicated for safe environment and has an “Environment Policy”.
- ✓ The Unit has been getting NOC from U.P. Pollution Control Board regularly.
- ✓ The Unit is continuously managing itself ‘ ECO- Friendly ‘ and is committed for decrease in utilization of hazardous chemicals and consistent efforts are being made to replace these by Non – hazardous chemicals in planned phased manner.

Safety:

The ITI Limited Mankapur believes that the Safety of the employees is of the greatest interest to the Organization and ranks in importance with production, quality of products and cost. The Unit has its Safety Policy

- The Unit has meritorious record of Safety Awards, which are detailed below for reference:
 1. National Safety awards presented by Govt. of India regarding longest accident free period for the years of 2000, 2001, 2002.
 2. Minimum accident frequency rate for the years – 2000, 2001, 2002 declared winner the last three consecutive years.
- Plant safety index is calculated at every quarter for assessing the Safety performance of different divisions.
- Joint fire safety inspection is conducted to assess the potential hazards on monthly basis.
- Safety training is conducted regularly and many awareness programmes are conducted regularly to create awareness among employees and their families.
- Personal protective equipments are provided to the employees and their use is 100% in the Unit.

AWARDS: The unit has a glorious track record of awards from national level as given below:

Year	Nature of Award	Award given by
1990	First Prize for Best Productivity	National Productivity Council
1990	First Prize for Excellence in Electronics	Deptt. of Electronics Govt. of India.
1990	Shram Devi Award for Excellent Performance to one of our Lady Employees.	Prime Minister of India
1991	First Prize for Best Productivity	National Productivity Council
1991	Shram Devi Award for Excellent Performance to one of our Lady Employees.	Prime Minister of India.
1991	Out standing performance in Industrial Safety	Central Labour institute Bombay, Ministry of Labour
1992	Highly commended National Quality Award for out standing achievement in pursuit of Total Quality.	Institute of Directors, New Delhi.
1992	Out standing performance in Industrial Safety	Central Labour Institute Bombay Ministry of Labour
1993	Shram Devi Award for Excellent Performance to one of our lady Employee	Prime Minister of India.
1994	Special certificate of merit in recognition of out standing performance in Research & Development	ELCINA New Delhi
1994	Outstanding performance in industrial Safety	Central Labour Institute Bombay (Ministry of Labour)
1995	Bapu Sita Ram Award to unit Chief for Excellent performance	IETE, New Delhi
1995	Six Star Category for years	Directorate of Industries Govt. of U.P
1995	" Udyog Excellence Award & Gold Metal" for the performance of the unit	Industrial Economic Forum New Delhi.

1995	"Shram Devi" Award for Excellent performance to one of our lady employee of SEA Plant	Prime Minister of India.
1996	"ISO 9002-94 Award" to Hybrid Division	IRQS Bombay
1996	"WISITEX 96 A International Award for best Technology (System) in Telecommunication for the product MPABX-1000	Hon'ble Lok Sabha Speaker Sri. P.A.Sangama
1996	Shram Devi Award for Excellent performance to one of our Lady Employee of SEA Plant	Prime Minister of India.
1998	Bharat Udhog Ratana Award	Industrial Green Land Society Hyderabad
1998	ISO-9001 certification for Mankapur Plant	IQNET
1999	Shram Devi Award for Excellent performance to one of our Lady Employee of Component division	Prime Minister of India.
2000	Shram Devi Award for Excellent performance to one of our Lady Employee of SEA Plant	Prime Minister of India.
2000	Outstanding performance on Industrial safety	Central Labour Institute, Mumbai (Ministry of Labour)
2001	Outstanding performance on Industrial safety	Minister of Labour
2002	Outstanding performance on Industrial safety	Minister of Labour
2003	Shram Shree Award for Excellent performance to one of our Employee of PCB Plant	Prime Minister of India.
2003	ISO:140001-1996 accreditation for Circuit Division	STQC, New Delhi