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PROJECT REPORT

**A STUDY ON RATIO ANALYSIS
WITH REFERENCE TO
GENTING LANCO POWER INDIA PRIVATE LIMITED.**

CERTIFICATE

This is to certify that Mr. J . RAMAKRISHNA YADAV of INTEGRAL INSTITUTE OF ADVANCED MANAGEMENT has successfully completed the project work titled “**RATIO ANALYSIS**” in partial fulfillment of requirement for the award of POST GRADUATION DIPLOMA IN BUSINESS MANAGEMENT prescribed by the INTEGRAL INSTITUTE OF ADVANCED MANAGEMENT..

This project is the record of authentic work carried out during the academic year (2006 – 2008).

DECLARATION

I Mr. J. RAMAKRISHNA YADAV_ hereby declare that this project is the record of authentic work carried out by me during the academic year 2006 – 2008 and has not been submitted to any other University or Institute towards the award of any degree.

Signature of the student

(J. Ramakrishna yadav)

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Chapter - 1

INTRODUCTION

Introduction

Financial Management is the specific area of finance dealing with the financial decision corporations make, and the tools and analysis used to make the decisions. The discipline as a whole may be divided between long-term and short-term decisions and techniques. Both share the same goal of enhancing firm value by ensuring that return on capital exceeds cost of capital, without taking excessive financial risks.

Capital investment decisions comprise the long-term choices about which projects receive investment, whether to finance that investment with equity or debt, and when or whether to pay dividends to shareholders. Short-term corporate finance decisions are called *working capital management* and deal with balance of current assets and current liabilities by managing cash, inventories, and short-term borrowings and lending (e.g., the credit terms extended to customers).

Corporate finance is closely related to managerial finance, which is slightly broader in scope, describing the financial techniques available to all forms of business enterprise, corporate or not.

Role of Financial Managers:

The role of a financial manager can be discussed under the following heads:

1. Nature of work
2. Working conditions
3. Employment
4. Training, Other qualifications and Advancement
5. Job outlook
6. Earnings
7. Related occupations

Let us discuss each of these in a detailed manner.

1. Nature of work

Almost every firm, government agency and organization has one or more financial managers who oversee the preparation of financial reports, direct investment activities, and implement cash management strategies. As computers are increasingly used to record and organize data, many financial managers are spending more time developing strategies and implementing the long-term goals of their organization.

The duties of financial managers vary with their specific titles, which include controller, treasurer or finance officer, credit manager, cash manager, and risk and insurance manager. **Controllers** direct the preparation of financial reports that summarize and forecast the organization's financial position, such as income statements, balance sheets, and analyses of future earnings or expenses. Regulatory authorities also in charge of preparing special reports require controllers. Often, controllers oversee the accounting, audit, and budget departments. **Treasurers and finance officers** direct the organization's financial goals, objectives, and budgets. They oversee the investment of funds and manage associated risks, supervise cash management activities, execute capital-raising strategies to support a firm's expansion, and deal with mergers and acquisitions. **Credit managers** oversee the firm's issuance of credit. They establish credit-rating criteria, determine credit ceilings, and monitor the collections of past-due accounts. Managers specializing in international finance develop financial and accounting systems for the banking transactions of multinational organizations.

Cash managers monitor and control the flow of cash receipts and disbursements to meet the business and investment needs of the firm. For example, cash flow projections are needed to determine whether loans must be obtained to meet cash requirements or whether surplus cash should be invested in interest-bearing instruments. **Risk and insurance managers** oversee programs to minimize risks and losses that might arise from financial transactions and business operations undertaken by the institution. They also manage the organization's insurance budget.

Financial institutions, such as commercial banks, savings and loan associations, credit unions, and mortgage and finance companies,

employ additional financial managers who oversee various functions, such as lending, trusts, mortgages, and investments, or programs, including sales, operations, or electronic financial services. These managers may be required to solicit business, authorize loans, and direct the investment of funds, always adhering to State laws and regulations.

Branch managers of financial institutions administer and manage all of the functions of a branch office, which may include hiring personnel, approving loans and lines of credit, establishing a rapport with the community to attract business, and assisting customers with account problems. Financial managers who work for financial institutions must keep abreast of the rapidly growing array of financial services and products.

In addition to the general duties described above, all financial managers perform tasks unique to their organization or industry. For example, government financial managers must be experts on the government appropriations and budgeting processes, whereas healthcare financial managers must be knowledgeable about issues surrounding healthcare financing. Moreover, financial managers must be aware of special tax laws and regulations that affect their industry.

Financial managers play an increasingly important role in mergers and consolidations and in global expansion and related financing. These areas require extensive, specialized knowledge on the part of the financial manager to reduce risks and maximize profit. Financial managers increasingly are hired on a temporary basis to advise senior managers on these and other matters. In fact, some small firms contract out all accounting and financial functions to companies that provide these services.

The role of the financial manager, particularly in business, is changing in response to technological advances that have significantly reduced the amount of time it takes to produce financial reports. Financial managers now perform more data analysis and use it to offer senior managers ideas on how to maximize profits. They often work on teams, acting as business advisors to top management. Financial managers need to keep abreast of the latest computer technology in order to increase the efficiency of their firm's financial operations.

2. Working conditions

Financial managers work in comfortable offices, often close to top managers and to departments that develop the financial data these managers need. They typically have direct access to state-of-the-art computer systems and information services. Financial managers commonly work long hours, often up to 50 or 60 per week. They generally are required to attend meetings of financial and economic associations and may travel to visit subsidiary firms or to meet customers.

3. Employment

While the vast majority is employed in private industry, nearly 1 in 10 works for the different branches of government. In addition, although they can be found in every industry, approximately 1 out of 4 are employed by insurance and finance establishments, such as banks, savings institutions, finance companies, credit unions, and securities dealers.

4. Training, Other qualifications and Advancement

A bachelor's degree in finance, accounting, economics, or business administration is the minimum academic preparation for financial managers. However, many employers now seek graduates with a master's degree, preferably in business administration, economics, finance, or risk management. These academic programs develop analytical skills and provide knowledge of the latest financial analysis methods and technology.

Experience may be more important than formal education for some financial manager positions—notably, branch managers in banks. Banks typically fill branch manager positions by promoting experienced loan officers and other professionals who excel at their jobs. Other financial managers may enter the profession through formal management training programs offered by the company.

Continuing education is vital for financial managers, who must cope with the growing complexity of global trade, changes in State laws and regulations, and the proliferation of new and complex financial instruments. Firms often provide opportunities for workers to broaden their knowledge and skills by encouraging employees to take graduate courses at colleges and universities or attend conferences related to their specialty. Financial management, banking, and credit union associations, often in cooperation with colleges and universities, sponsor numerous national and local training programs. Persons enrolled prepare extensively at home and then attend sessions on subjects such as accounting management, budget management, corporate cash management, financial analysis, international banking, and information systems. Many firms pay all or part of the costs for employees

who successfully complete courses. Although experience, ability, and leadership are emphasized for promotion, this type of special study may accelerate advancement.

In some cases, financial managers also may broaden their skills and exhibit their competency by attaining professional certification. There are many different associations that offer professional certification programs. For example, the Association for Investment Management and Research confers the Chartered Financial Analyst designation on investment professionals who have a bachelor's degree, pass three sequential examinations, and meet work experience requirements. The Association for Financial Professionals (AFP) confers the Certified Cash Manager credential to those who pass a computer-based exam and have a minimum of 2 years of relevant experience. The Institute of Management Accountants offers a Certified in Financial Management designation to members with a BA and at least 2 years of work experience who pass the institute's four-part examination and fulfill continuing education requirements. Also, financial managers who specialize in accounting may earn the Certified Public Accountant (CPA) or Certified Management Accountant (CMA) designations.

Candidates for financial management positions need a broad range of skills. Interpersonal skills are important because these jobs involve managing people and working as part of a team to solve problems. Financial managers must have excellent communication skills to explain complex financial data. Because financial managers work extensively with various departments in their firm, a broad overview of the business is essential.

Financial managers should be creative thinkers and problem-solvers, applying their analytical skills to business. They must be comfortable with the latest computer technology. As financial operations increasingly are affected by the global economy, financial managers must have knowledge of international finance. Proficiency in a foreign language also may be important.

Because financial management is critical for efficient business operations, well-trained, experienced financial managers who display a strong grasp of the operations of various departments within their organization are prime candidates for promotion to top management positions. Some financial managers transfer to closely related positions in other industries. Those with extensive experience and access to sufficient capital may start their own consulting firms.

5. Job outlook

Some companies may hire financial managers on a temporary basis, to see the organization through a short-term crisis or to offer suggestions for boosting profits. Other companies may contract out all accounting and financial operations. Even in these cases, however, financial managers may be needed to oversee the contracts.

Computer technology has reduced the time and staff required to produce financial reports. As a result, forecasting earnings, profits, and costs, and generating ideas and creative ways to increase profitability will become a major role of corporate financial managers over the next decade.

Financial managers who are familiar with computer software that can assist them in this role will be needed.

6. Earnings

The Association for Financial Professionals' 16th annual compensation survey showed that financial officers' average total compensation in 2006, including bonuses and deferred compensation, was \$261,800. Selected financial manager positions had average total compensation as follows:

	<u>US\$</u>
Vice president of finance	367,000
Treasurer	301,200
Assistant vice president-finance	282,600
Controller/comptroller	268,600
Director	227,200
Assistant treasurer	223,800
Assistant controller/comptroller	231,000
Manager	167,000
Cash manager	129,400

Large organizations often pay more than small ones, and salary levels also can depend on the type of industry and location. Many financial

managers in both public and private industry receive additional compensation in the form of bonuses, which also vary substantially by size of firm. Deferred compensation in the form of stock options is becoming more common, especially for senior level executives.

7. Related occupations

Financial managers combine formal education with experience in one or more areas of finance, such as asset management, lending, credit operations, securities investment, or insurance risk and loss control. Workers in other occupations requiring similar training and skills include accountants and auditors; budget analysts; financial analysts and personal financial advisors; insurance underwriters; loan counselors and officers; securities, commodities, and financial services sales agents; and real estate brokers and sales agents.

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NEED FOR THE STUDY

1. The study has great significance and provides benefits to various parties whom directly or indirectly interact with the company.
2. It is beneficial to management of the company by providing crystal clear picture regarding important aspects like liquidity, leverage, activity and profitability.
3. The study is also beneficial to employees and offers motivation by showing how actively they are contributing for company's growth.
4. The investors who are interested in investing in the company's shares will also get benefited by going through the study and can easily take a decision whether to invest or not to invest in the company's shares.

OBJECTIVES

The major objectives of the resent study are to know about financial strengths and weakness of LANCO through **FINANCIAL RATIO ANALYSIS**.

The main objectives of resent study aimed as:

To evaluate the performance of the company by using ratios as a yardstick to measure the efficiency of the company. To understand the liquidity, profitability and efficiency positions of the company during the study period. To evaluate and analyze various facts of the financial performance of the company. To make comparisons between the ratios during different periods.

OBJECTIVES

1. To study the present financial system at Genting Lanco.
2. To determine the Profitability, Liquidity Ratios.
3. To analyze the capital structure of the company with the help of Leverage ratio.

4. To offer appropriate suggestions for the better performance of the organization

METHODOLOGY

The information is collected through secondary sources during the project. That information was utilized for calculating performance evaluation and based on that, interpretations were made.

Sources of secondary data:

1. Most of the calculations are made on the financial statements of the company provided statements.
2. Referring standard texts and referred books collected some of the information regarding theoretical aspects.
3. Method- to assess the performance of the company method of observation of the work in finance department is followed.

LIMITATIONS

1. The study provides an insight into the financial, personnel, marketing and other aspects of LANCO. Every study will be bound with certain limitations.
2. The below mentioned are the constraints under which the study is carried out.
3. One of the factors of the study was lack of availability of ample information. Most of the information has been kept confidential and as such as not assed as art of policy of company.

Time is an important limitation. The whole study was conducted in a period of 60 days, which is not sufficient to carry out proper interpretation and analysis.

Chapter - 2

**THE ELECTRICITY REGULATORY
COMMISSION ANALYSIS
(SUBSTANTIVE ISSUES RAISED BY
THE PUBLIC)**

Andhra Pradesh Electricity Regulatory Commission was constituted on 31.03.1999 under the A.P. Electricity Reform Act, 1998. Since its inception, the APERC has taken several initiatives to improve the functionality of the Power Sector in the state of AP to make it viable and more importantly to protect the interests of the consumers. The commission issued Licenses to the APTRANSCO, the four Distribution Companies and the nine Rural Electric Cooperatives in the state. Six Tariff Orders have been issued. Several path breaking documents have been formulated and released relating to the performance of the Licensees and protection of the interests of the consumer's viz., Customer's right to information, Licensee's complaint handling procedure, the grid code, Guidelines for Investment proposals, Load Forecasting and Power Procurement procedure, Merit Order Dispatch and Long Term tariff Principles (LTTP) etc.

Consequent to the enactment of the Electricity Act 2003, the Commission formulated and notified a number of Regulations on important aspects of Supply of Electricity to the consumers.

Commission has facilitated competition in Power sector by notifying regulations on Terms and Conditions of Open Access (u/s 42) and is in the process of notifying regulations for Trading in Electricity (u/s 52).

Commission is also contemplating to introduce Availability Based Tariff (ABT) at the state level from 2006-07 onwards as required in the National Electricity Policy notified by Government of India.

The Commission is also set to introduce Multiyear tariff regime from 2006-07 onwards so as to ensure Regulatory Certainty and to improve the financial and operational efficiency of the Distribution Licensees.

The Website is part of the endeavors of the Commission to usher in and function in an environment of transparency in its operations. Suggestions for improvement of the website are welcome.

Regulation No. 1 of 2007

TRANSMISSION LICENSEE STANDARDS OF PERFORMANCE

In exercise of the powers conferred by sections 181 read with section 57 (1), 57 (2) and 86 (1) (i) of the Electricity Act, 2003 (36 of 2003), the Andhra Pradesh Electricity Regulatory Commission makes the following Regulation, namely:

1. SHORT TITLE AND COMMENCEMENT

1.1 This Regulation may be called the “Andhra Pradesh Electricity Regulatory Commission (Transmission Standards of Performance) Regulation, 2007”.

1.2 This Regulation shall be applicable to the State Transmission Utility/ Transmission Licensee in the State of Andhra Pradesh.

1.3 This Regulation extends to the whole of the State of Andhra Pradesh.

1.4 This Regulation shall come into force on the date of its publication in the official Gazette of Andhra Pradesh.

2. DEFINITIONS

2.1 In this Regulation, unless the context otherwise requires:

(a) “Act” means the Electricity Act, 2003 (Central Act No. 36 of 2003);

(b) “APTRANSCO” means Transmission Corporation of Andhra Pradesh Limited registered under the Companies Act, 1956;

(c) “CEA” means the Central Electricity Authority;

(d) “Commission” means Andhra Pradesh Electricity Regulatory Commission;

(e) “Consumer” in the context of this Regulation means any person who is provided with the transmission services by the transmission licensee and includes any person whose premises are for the time being connected for the purpose of providing transmission services from the licensee, and persons who have applied for availing transmission services from a transmission licensee.

(f) “EHV/EHT” means Extra High Voltage/Extra High Tension (voltage level above 33,000 volts);

(g) “Grid Code” means the set of principles and guidelines prepared in accordance with the terms of Section 86 (1) (h) of the Electricity Act 2003;

(h) “IEGC” means the Indian Electricity Grid Code approved by Central Electricity Regulatory Commission (CERC) and shall include any

Grid Code specified by Central Commission under clause (h) of sub-section (1) of section 79 of the Act;

(i) “PGCIL” means Power Grid Corporation of India Limited, a Central Transmission Utility notified under sub-section (1) of section 38 of the Act;

(j) “Rules” means the Indian Electricity Rules, 1956 and/or any other rules made under Act;

(k) “State” means the State of Andhra Pradesh

(l) “State Transmission System” means the system of EHV electric lines and electrical equipment operated and/or maintained by State Transmission Utility and/or any Transmission Licensee for the purpose of the transmission of electricity among generating stations, external interconnections, distribution systems and any other user connected to it with in the state of Andhra Pradesh;

(m) “User” means a person, including Generating Stations within the State, Transmission Licensees or Distribution Licensees within the State and open access customer who use the State Transmission System and who must comply with the provisions of the Grid Code;

2.2 Words and expressions used but not defined herein shall have the meaning assigned to them in Electricity Act 2003, Indian Electricity Grid Code, Andhra Pradesh Electricity Grid Code and Indian Electricity Rules, 1956.

3. OBJECTIVE

This Regulation lays down the performance standards to maintain certain critical grid parameters within the permissible limits. These standards shall serve as guidelines for State Transmission Utility (STU)/Transmission Licensee to operate the Intra-State Transmission System for providing an efficient, reliable, coordinated and economical system of electricity supply and transmission. The main objectives of these performance standards are:

(a). To ensure that the grid performance meets minimum standards essential for the Users' system demand and proper functioning of equipment;

(b). To enable the Users to design their systems and equipment to suit the electrical environment that they operate in; and

(c). To enhance the quality standards of the State Transmission System in order to move towards standards stipulated in or established under the authority of National and State Acts and Rules in the short term and gradually towards the international standards in the long term.

4. STANDARDS OF PERFORMANCE

4.1 The Transmission performance standards are classified under the following two categories:

(a) **Mandatory Standards** - Those performance standards, the failure to maintain which attracts the provisions of sub-section (2) of the section 57.

(b) **Desirable Standards** - Those performance standards, which are desirable for providing quality, continuity and reliability of services by the Licensees, and though also specified by the Commission do not, unless provided otherwise by the Commission from time to time, attract the provisions of sub-section (2) of the section 57.

4.2 The following standards are the mandatory standards:

(a) **Voltage Variation**

(b) **Safety Standards**

These are statutory standards to be complied with by the Licensee as per Electricity Rules 1956 wherever not inconsistent with the Act. The new Rules under section 53 of Act are yet to be issued by the CEA in consultation with the State Government. The standards specified in this Regulation shall therefore be revised after new Rules under the Act come into effect.

4.3 Desirable standards too have been specified herein under section 86 (1) (i) of the Act, with the main objective of providing quality, continuity and reliability of services to the consumers. The Commission shall fix the time-bound schedule for implementation/compliance of/with each parameter of these standards. The following standards are specified herein as desirable of achievement:

- (a) Feeder Availability
- (b) Sub-station Availability
- (c) Voltage Unbalance
- (d) Neutral Voltage Displacement (NVD)
- (e) Voltage Variation Index (VVI)
- (f) System Adequacy
- (g) System Security

5. PHASING OF IMPLEMENTATION

5.1 The performance standards excepting the Mandatory Standards, specified herein shall be implemented in a phased manner in three stages as follows:

(a) Preliminary Stage (Level-1): The time period of two (2) years immediately after these standards come into force shall be considered as Preliminary Stage. During this preliminary stage, Standards marked as Level 1 shall be achieved, unless specified otherwise.

(b) Transition Stage (Level-2): Time period spreading up to three (3) years after the Preliminary Stage shall be considered as Transition Stage. During this period, the licensee is expected to upgrade its systems. Standards marked as Level 2 shall be achieved during Transition Stage, unless specified otherwise.

(c) Final Stage (Level-3): Two years after expiry of the Transition Stage when substantial improvements should have been carried out and the system considered to be in satisfactory condition with necessary capability improvement. Standards marked as Level 3 shall be achieved during this Final Stage.

5.2 In all cases, where standards are specified by appropriate authorities, for example Electricity Rules 1956, such standards shall be required to be complied with as specified by that authority, may be from the preliminary stage itself.

Standards to be complied with:

5.3 The Commission specifies the following standards for STU/Transmission Licensees:

(a) Voltage Variation:

(i) Voltage Variation is defined as the deviation of the root-mean-square (RMS) value of the voltage from its nominal RMS value, expressed in terms of percentage. Voltage Variation may be either of short duration not exceeding one minute or of long duration for a time greater than one minute.

(ii) For the purpose of these standards, the sustained variation in steady state voltage exceeding one minute duration shall be considered. The specified permissible limits of sustained voltage variation shall not apply in the cases where the circumstances are reasonably beyond the control of State Transmission Utility /Transmission Licensee e.g. major break-downs, grid failures, accidents, system distress conditions, etc.

(iii) State Transmission Utility /Transmission Licensee shall make all possible efforts to ensure that the grid voltages remain within the following voltage levels at all points of its Transmission System:

Nominal Voltage (kV)	Maximum Value (kV)	Minimum Value (kV)
400	420	360
220	245	200
132	145	120
33	35	30
11*	11.67	10

** 11kV voltages to be maintained by the transmission licensee only in those cases where 11kV supply is extended from the EHT substation.*

(b) Safety Standards:

(i) State Transmission Utility /Transmission Licensee shall observe the general safety requirements as laid down in IE Rules, 1956, for construction, installation, protection, operation and maintenance of electric supply lines and apparatus.

(ii) Relevant rules under IE Rules, 1956 pertaining to safety standards and practices shall be followed.

(iii) State Transmission Utility / Transmission Licensee shall develop its own Operation and Maintenance Manual (including Safety Regulations)

taking into consideration the safety requirements for the construction, operation and maintenance of electrical plants and electric lines as may be specified by the Central Electricity Authority under Clause (c) of section 73 read with Section 53 of the Act.

(c) Feeder Availability:

(i) The feeder availability gives the percentage of time during which the feeder remained available for transmission. Feeder Availability shall be calculated based on following formula

$$\% \text{ Availability of } = \frac{(\text{No of feeders} \times 8760 - \text{Annual outages in feeder-hours}) \times 100}{\text{Feeder Total availability in feeder-hours}}$$

Here, total availability in hours is equal to the number. of hours in a year i.e. 8760 (non-leap year)

(ii) The Transmission Licensee shall achieve 99% feeder availability from the preliminary stage itself.

(d) Sub-station Availability:

(i) The sub-station availability expressed in percentage is the measure of the extent the power transmission capacity remained available from a sub-station. Sub-station availability shall be calculated based on following formula:

$$\% \text{ Availability of SS} = \frac{(\text{Installed capacity in MVA} \times 8760 - \text{Outage in MVA} \times \text{Hours})}{\text{Installed capacity in MVA} \times 8760}$$

(ii) The Transmission Licensee shall achieve 97% Substation availability from the preliminary stage itself.

(e) Voltage Unbalance:

(i) The phase voltages of a 3-phase supply should be equal in magnitude and phase angle. The loads on each phase should be balanced. Deviations will result in decreased efficiency, negative torque, vibrations and overheating. Severe unbalance could lead to malfunctioning of some equipment. The unbalance is computed as follows:

$$\% \text{ Voltage Unbalance} = \frac{\text{Max Deviation from Mean of } \{V_{RY}, V_{YB}, V_{BR}\} \times 100}{\text{Mean of } \{V_{RY}, V_{YB}, V_{BR}\}}$$

Where, V_{RY} is Voltage between R & Y phases, V_{YB} is Voltage between Y & B phases and V_{BR} is voltage between B & R phases.

(ii) Subject to Distribution Licensee(s) observing the Grid Code Connection Conditions in this regard, the voltage unbalance shall not exceed the values given below:

Implementation Stage	Voltage Level	Limit of voltage unbalance
Preliminary Stage - Level 1	220kV and Above	2 %
Transition Stage - Level 2	132kV	3 %
Transition Stage - Level 2	33kV and 11kV buses in EHV Substation	3 %

Provided that the above limit for Voltage unbalance at the interconnection point with Distribution System are subject to Distribution Licensee maintaining current unbalance between phases within limit of 3% applied for all feeders of one voltage class emanating from a sub-station including railway traction etc. measured at 3 sub-stations in a row. The Voltage unbalance shall be measured at sub-stations provided with measuring instruments having accuracy class within 1% limit.

(f) Neutral Voltage Displacement (NVD):

(i) Unbalance in loads on three phases cause shifting of neutral from earth potential. Neutral displacement is applicable for transformers with ‘Star Point’ solidly grounded. Under “solidly” grounded conditions, the potential of neutral should be equal to earth i.e. zero. But in actual conditions, the earthing of the star point is imperfect and so the star to ground offers small resistance. This results in flow of negative sequence currents (because $I_R + I_Y + I_B$ is not equal to zero, where, I_R is the current in the R-Phase, I_Y is the current in the Y-Phase and I_B is the current in the B-Phase) through neutral to ground. The neutral therefore shifts from earth potential. This performance standard shall be achieved for star point of all EHT transformers having 33kV or 11kV on the low voltage side.

(ii) Unbalance voltages and displacement of neutral result in decreased efficiency, negative torque, leakage currents, vibrations and overheating. Severe unbalance and neutral displacement could lead to malfunctioning of some equipment.

(iii) The State Transmission Utility /Transmission Licensee shall ensure that the neutral point voltage of the transformers with respect to earth will not have potential greater than 2% of the no load phase to phase voltage of the transformer.

(iv) This standard shall be implemented in the Preliminary Stage (Level 1) itself.

(g) Voltage Variation Index (VVI):

Voltage Variation Index representing the degree of voltage variation from nominal value (in %) over a specified period of time shall be computed separately by the State Transmission Utility /Transmission Licensee for higher than nominal system voltage and lower than nominal system voltage as per the following formula:

$$\text{VVI} = \text{Square Root of } \left\{ \frac{\sum (V_i - V_s)^2}{N} \right\} \times \left(\frac{100}{V_s} \right) \%$$

I = 1

Where,

V_i = RMS value of measured voltage (in kV) at i^{th} hour in the period for which VVI is computed

V_s = RMS value of the nominal system voltage i.e. 400kV, 220kV and 132kV etc. as may be applicable at the interconnection point

N = Number of hourly measurements over the specified period of time

The data from defective metering or any abnormal data shall be discarded from calculations. The VVI shall be computed on monthly basis:

Preliminary Stage – Level 1 ≤ 10 To be achieved for more than 90% of buses

Transition Stage – Level 2 ≤ 6 To be achieved for more than 90% of buses

Final Stage – Level 3 ≤ 4 To be achieved for more than 90% of buses

(h) System Adequacy:

System adequacy is the ability of the electric system to receive the generated power or supply the aggregate electrical demand and energy requirements of its consumers at all times, taking into account scheduled and reasonably expected unscheduled outage of system elements. Adequacy of the power system is usually measured in terms of Loss of Load Probability (LOLP). LOLP is the probability of transmission system capacity not being able to meet system load. LOLP can also be expressed as Loss of Load Expectation (LOLE) in hours per year. This measure does not consider the amount or duration of the generation capacity shortfall. State Transmission Utility /Transmission Licensee are expected to achieve LOLE hours in percentage as under:

Implementation Stage	Nos. of hours in year when system demand		Loss Of Load Expectation (LOLE) in % of hours (C=B X100/8760)
	can be fully met subject to generation availability (A)	can not fully met even with generation availability (B = 8760 - A)	
Preliminary Stage – Level 1	7446	1314	15%
Transition Stage – Level 2	7884	876	10%
Final Stage – Level 3	8672.4	87.60	1%

(i) System Security:

Security is the ability of the electric system to withstand sudden disturbance such as electric short circuit or unanticipated loss of system element, detailed in Clause 6 of “Manual on Transmission Planning Criteria” issued by CEA. The State Transmission System shall be designed for a security level of “n-1” i.e. to withstand a single contingency with little negative effect. This means the most severe fault or tripping of a critical generator, transformer or line should not result in instability of the system, overloading lines and/or transformers for more than 15 minutes, voltage drop of more than 10% when the system import is increased by 20%. State Transmission Utility /Transmission Licensee shall maintain the system

security level of "n-1" (single contingency) plus spinning reserve margin for Steady State Operation.

Implementation Stage	System Security Level of “n-1” (Single Contingency) plus spinning reserve margin of:
Preliminary Stage – Level 1	No mandatory requirement
Transition Stage – Level 2	0.5% of system peak load
Final Stage – Level 3	1% of system peak load

6. REPORTING REQUIREMENT AND COMPLIANCE

6.1 State Transmission Utility /Transmission Licensee shall furnish to the Commission an half yearly report in the format prescribed at ANNEXURE-A, by October 31st and April 30th of each year on actual performance vis-à-vis the performance standards laid down in these standards as modified from time to time. The report shall contain all parameters irrespective of whether such parameters are applicable during the current reporting period. The State Transmission Utility /Transmission Licensee shall maintain the base data like Log Sheet, Complaint Registers and Interruption Register and relevant load flow studies in respect of system security etc. at sub-station level for compilation of monthly report at circle level. The consolidated report shall be based on circle-wise compilation for whole State Transmission Utility

/Transmission Licensee. The circle-wise compilation and base data at sub-station level shall be subject to its scrutiny as considered necessary by the Commission.

6.2 The State Transmission Utility /Transmission Licensee shall display on their website the actual performance against the required standards on a monthly basis.

6.3 For the purpose of this Regulation, the half-year periods would be as follows:

- (a) 1st Half year: 1st April to 30th September
- (b) 2nd Half year: 1st October to March 31st.

6.4 The Commission may, from time to time, modify the contents of the regulation/formats or add new regulation/formats for additional information.

6.5 In addition to the hard copies, the information shall necessarily be submitted in such electronic form or through compact disks or e-mail as the Commission may direct.

6.6 Effect of default in compliance with the Standards

(a) Consequent to failure of State Transmission Utility /Transmission Licensee to meet performance standards specified herein, the affected Utility/Consumers shall be entitled to seek relief/compensation from State Transmission Utility /Transmission Licensee, as may be determined by the Commission:

Provided that the STU/Transmission Licensee shall be given an opportunity of being heard before such compensation is determined by the Commission:

Provided further that the compensation so determined shall be payable within 90 days of its determination by the Commission:

Provided also that the payment of compensation by the State Transmission Utility /Transmission Licensee shall be without prejudice to any penalty, which may be imposed or prosecution initiated by the Commission as provided in the Act.

(b) The Commission at its own discretion may require the State Transmission Utility /Transmission Licensee to furnish a report on actual performance levels maintained against the standards specified by the Commission with its Petitions for Annual Revenue Requirement (ARR) and Tariff Determination, which shall be subject to public hearing for tariff setting by the Commission.

7. MISCELLANEOUS

Annual Review of Performance Standards

7.1 The Commission in consultation with State Transmission Utility /Transmission Licensee shall review the performance standards for Transmission System as specified above once in every 5 years or more frequently as may be required.

Use of the Information

7.2 The Commission shall have the right to use the information submitted by State Transmission Utility /Transmission Licensee as it deems fit including publishing it or placing it on the Commission's website and/ or directing the State Transmission Utility /Transmission Licensee to display the information in the licensee's website.

Power to Amend

7.3 The Commission may, at any time add, vary, alter, modify or amend any provisions of this Regulations.

Savings

7.4 Nothing in this Regulation shall be deemed to limit or otherwise affect the inherent power of the Commission to make such orders as may be necessary to meet the ends of justice or to prevent abuses of the process of the Commission.

7.5 Nothing in this Regulation shall bar the Commission from adopting in conformity with the provisions of the Act, a procedure, which is at variance with any of the provisions of this Regulation, if the Commission, in view of the special circumstances of a matter or class of matters and for reasons to be recorded in writing, deems it necessary or expedient for dealing with such a matter or class of matters.

7.6 Nothing stated in this Regulation shall, expressly or implicitly, bar the Commission from dealing with any matter or exercising any power under

the Act for which no Regulation has been framed, and the Commission may deal with such matters, powers and functions in a manner it thinks fit.

Exemption

7.7 The Commission may relax adherence to specific performance standard during Force Majeure conditions such as war, mutiny, civil commotion, riot, flood, cyclone, storm, lightening, earthquake, grid failure, and strike/curfew, lockout, fire affecting the State Transmission Utility's/ Transmission Licensee's installations and operation activities.

7.8 The Commission under specific circumstances may also relax any provisions of Regulation in general or in specific cases for the period(s) specified in its order(s).

Chapter – 3

POWER INDUSTRY

INDUSTRY PROFILE

ELECTRICITY is one of the vital requirements in the over all development of the economy and is therefore, appropriately called the **‘Wheel of Development’**. In fact, the power sector has played a dominant role in the socio-economic development of the county. As a convenient versatile and relatively cheap form of energy it plays a crucial role in agriculture, transport, industry and domestic sector. Hence power has all along remained in the priority list of Indian planners and plan outlays have reflected this aspect. The outlays for power sector have been around 19% of the total outlays for the public sector in various plan periods.

There has been a spectacular increase in the installed generating capacity of electricity in the country. Starting with a capacity of about 1360MW at the time of independence,

Despite tremendous increase in the availability of power since independence there is acute power shortage gap between demand and supply. The per capita consumption of power in the country is very low as compared to the position in the developed countries. Power is a key input for economic growth has as direct relationship with the national productivity as also the overall economy of the country.

There has been diversification of the sources of generation in terms of hydel, thermal and nuclear sources. The share of hydel in the total generating capacity had drastically come down and that of thermal had shown noticeable increase. Another significant change is the increasing share of Central sectors in recent years.

The share of the thermal element in the installed generating capacity, which is also predominantly coal-based, shows a steady increase. Thus, the relatively cheaper and a more desirable change in terms of a higher share of hydel source, which is renewable, have not materialized.

POWER SCENARIO

The power sector is at cross roads today. There is a chronic power shortage in the country mainly attributable to demand of power continuously outstripping the supply.

HYDEL POWER

In the present global energy context, there are certain aspects, which have acquired a new significance. The development of hydropower has to be given a major thrust in the current decade. We still have large untapped hydro power potential, but its development has slowed down on account of lack of financial resources, interstate rivalry, inefficiency of certain state electricity boards, variations in the course of the monsoons etc. a concerted effort is imperative to overcome the hurdles and enlarge the share of the hydro power generation in the country. This will help not only in tapping a renewable resource of energy, but will provide essentially needed peaking support to thermal power generation with the pattern of demand for electricity. Since the planners' initial enthusiasm about the large hydel projects has waned somewhat, India will do well to take recourse to

the Chinese pattern of micro and mini hydel projects wherever the terrain is suitable.

The National Hydroelectric Power Corporation has been assigned a dominant role in accelerating the development of the large hydel potential in India, particularly in the Himalayan region.

A top level official committee has recommended a Rs. 300 Crore renovation and modernization (R &M) programmed that will seek to cover 93 hydel power plants in India and result in additional capacity of 527.81 MW.

The growth of the power sector was marked by adequate share of hydro capacity up to the end of Third five-year Plan (1961-66). However, thereafter there has been a continued decline and the proportion of hydropower has dropped from 45.86% in 1966 to about 28% by March 1992. Many of the problems in the power supply and power system in the country can be attributed inter alia to the declining hydro share in the power system and consequent growth of thermal development in the sub-optimal manner.

Government of India has recently constituted a group to identify new hydel projects on which advance action can be taken. In order to give a boost to the development of hydro power more and more hydro electric projects are being planned or being implemented in the central sector. In order to achieve this four Corporations have already been set up under Central or in joint sectors.

They are

1. National Hydroelectric Power Corporation (NHPC).
2. Northeastern Electric Power Corporation (NEEPCO).
3. Tathpa Jhohri Power Corporation (NJPC).

MINI HYDEL PLANTS:

There are a number of states in the Country where mini hydel projects can be set up at comparatively lower investments to supplement other sources of energy. According to reliable estimates the total potential of mini-hydel plants all over the country is around 5000MW. This includes 2,000MW in hilly areas at “high heads and low discharge” points and 300MW at “low heads and low Discharge” points. Particular drops and irrigation systems.

Many of the States have surveyed potential mini-hydel schemes and identified several sites for instance, Punjab has identified 130 falls. With a combined capacity of 100 MW. Andhra Pradesh has identified projects that could yield a total of 50MW while Karnataka has estimated that some 175 mini- hydel projects in the state could yield 200 MW. Jammu&Kashmir have identified 54 mini-hydel project sites while TamilNadu has carried out feasibility studies on 72 sites with a total potential of 150MW.

The World Bank has estimates, the cost of generation from mini-hydel turbines to be only 60 paise per kWh at 60 per cent plant load factor.

MINI-HYDEL SCHEMES HAVE SEVERAL ADVANTAGES.

1. They do not require larger capital investment and their gestation period is only 12 to 18 months.
2. They are ideal for decentralized energy generating sources.
3. These projectors cause very little environmental disturbances, and also do not have to depend on any of the already depleting sources of energy.
4. A large number of sites for mini-hydel projects are easily accessible, as they are located on existing canals and irrigation systems.

THERMAL POWER:

Thermal units have emerged as the largest source of power in India. But unfortunately, the progress of power generation in this sector has not been marked by any new breakthrough. At present stress continues to be laid on thermal power station because of shorter construction time. Using better project management techniques is shortening the construction period for these plants. It has been possible to improve overall efficiency of thermal plant by using gas turbines in conjunction with conventional steam turbines.

The union government has, in order to step up central generation in the country, established super thermal power Station in different regions. The National Thermal power Corporation (NTPC) was established in 1975 with the object of planning, promoting and organizing integrated development of thermal power in the country.

HIGHLIGHTS:

1. Two part system for thermal tariffs and single tariff for hydel projects.
2. Exchange fluctuations to be compensated
3. Operating and Maintenance expenses at 2.5 per cent respectively for thermal and hydel units in the base year.
4. Optimal capacity utilization norm for thermal units: 6000kwh/kw/year:
90 per cent dependable hydrology for stations exceeding 15ME capacity.
5. Tariff to be computed for a period of five years.
6. Rate of return on equity will be 16 per cent.

THE STATE ELECTRICITY BOARDS:

The State electricity boards (SEBs) are autonomous bodies created under the Electricity (supply) act, 1948 and have the statutory responsibility of generating and supplying power in the most economical manner to the consumers. The underlying idea behind the central enactment was to confer autonomy on the SEBs so as to enable them to function strictly on Commercial principles.

ROLE OF NATIONAL THERMAL POWER CORPORATION (NTPC)

In just 17 years National Thermal Power Corporation (NTPC) has grown to be the largest producer of electric power in the Country. With over 13,000MW commissioned capacity and approved capacity of 16,835MW at an estimate of Rs. 23,218 Crore. This installed capacity of the company accounts for about 26% of the thermal capacity and 18% of the total capacity of the country. The company has also played the lead role in the augmentation of transmission network by setting up of around 17,000 circuit kilometers of high voltage transmission network across the country. These transmission systems now stand transferred to the newly formed Power grid Corporation of India. NTPC has been playing a significant role in meeting the Country's power demand.

GEO POWER SYSTEM

Geo Power System is a natural air-conditioning system for residential and commercial premises, using geothermal energy available beneath the ground surface at a depth of 5 meters. It is intelligently designed to ventilate the interiors to all corners and to effectively enhance the internal conditions by removal of formaldehyde which is harmful to ones health. This system provides natural environment-like conditions to oneself, increases house life and protects the environment.

Geo Thermal Energy

Geo Thermal energy can be explained in simple terms as the thermal energy available at a depth of 5 meters below the ground where the temperature remains stable all round the year between 15-18 degrees Centigrade i.e. 59-65 degrees Fahrenheit. This thermal energy does not change with respect to the outside temperature considerably. The only change visible is very small which also has a time lag with respect to outside temperature. The temperatures beneath the ground are rather cool (15 degrees C) when in summer and warm enough (18 degrees C) during winter. This provides the feed for the natural air conditioning system.

Geo Power System Operation

GEO Power System is a three in one system combining the effectiveness of three factors namely, Geothermal Energy + Air Circulation + Ventilation. This system is one of a kind system which ensures high quality of life with high performance at a relatively low cost

During Summer

Cool Air Inside/Hot Air Outside

Ventilation

Ground Air is pumped into the house after being cooled by the GEO PIPE. The hot air is being ventilated out of the house through the attic ventilation

Circulation

Ground Air is pumped into the house after being cooled by the GEO PIPE

During Winter

Maximum Use of Warm and Generated Heat Keep away from Cold Air.

Ventilation

Ground air is pumped into the house after being heated up by the GEO Pipe. Current Air Mass is discharged from the attic ventilation.

Circulation

By Using the Geo Thermal Heat, the heat generated in the house and the available hot mass, the house is kept away from the cold. The special system namely Solar Bless introduces the heat from the sun to the cobble stone layer for recycling it to the interiors.

The effect of Geo Power System

Salient Features of Geo Power System

[For Human Race]

1. Recovering Self Resistance

Human body is empowered by nature to regulate self temperature. Although this power has been declining due to the increasing usage of air conditioning systems in all seasons, the usage of this natural air conditioning system helps in the revival of this power.

2. Healthy and Comfortable Living Space

The systems usage of natural resources to effectively control the temperature and ventilate at all hours, successfully creating a better, healthier and comfortable living space.

3. Protects the Young and the Old

In this age where child care and better health services for all especially of the old have taken primary significance, the power of this system which minimizes temperature differences between interior rooms helps better health keeping for the young and the old.

4. Natural Purification

The system includes natural purification of minute impurities in the air which are cleaned before being pumped into the house. This is done with the help of condensed moisture which accumulates at the surface of the cobblestones and the pipes.

5. Humidity control and Germ Prevention

Using Natural Dehumidifiers and health care material like tourmaline, charcoal and copper the humidity is controlled and also help in germ prevention.

[Ecosystem and Environment]

1. Energy Saving

The most scarce resource in the world is the forms of energy available to mankind. With ever increasing dependence on electricity as a medium of energy, the invention of alternative energy resources is a tough ask. The usage of alternative energy form by this system greatly helps in reducing the usage of conventional electricity for air conditioning and also helps in reducing the emission of harmful CO₂ into the environment.

2. Heat Island Phenomenon Reduced

Reduction in the usage of electric air conditioning systems helps in the reduction of the heat island phenomenon.

[Building Structure]

1. Increased Durability

The durability of the building both exteriors and interiors is increased by the prevention of mould and dewfall. The corrosion of the building mostly due to water reasons and humidity is avoided by using dehumidifier's namely ceramic charcoal and others. This helps to maintain the good condition of the building.

2. Low Cost and Maintenance Friendly

Since the system is made up of several small independent units, the maintenance is simple and the costs for the same are low.

NUCLEAR ENERGY:

The planners, right from the beginning understood the importance of nuclear energy in meeting the country's long-term energy needs. Recognizing that nuclear technology would be subject to a progressively restrictive technology central regime and also that the long term strategies for exploitation of the country's vast thorium resources are bound to be some what different from those of most other countries engaged in nuclear power development, tremendous emphasis was placed on achieving self reliance in technology development. This policy has yielded rich dividends and today one can proudly use the realization of indigenous capability in all aspects of the nuclear fuel cycle.

1. Tarapur Atomic Power Station (TAPS)-It provides electricity to Maharashtra and Gujarat.
2. Rajasthan Atomic Power Station (RATS)-It provides electricity to Rajasthan.
3. Madras Atomic Power Station (MAPS)-It provides electricity to Madras.
4. Narora Atomic Power Station (NAPS)-It provides electricity to up and Delhi.

ADVANTAGES:

1. Nuclear source is clean, compact and concentrated.
2. Nuclear is economical.
3. A unit of electricity from the nuclear power stations at Tarapur and Kalpakkam cost 40 to 58 paise per kWh compared with 60 to 90 paise per kWh from thermal Station in the respective regions.
4. The greatest advantage of nuclear power is that it can be installed in location even remote from hydel and coal resources.

OCEAN ENERGY:

The long standing proposal to tap non-conventional source of ocean energy for power generation is expected to get a fillip with a joint team of the Tamilnadu electricity Board and the Ocean Energy Cell of

Indian Institute of Technology, Madras commending the offer of the U.S. based firm sea solar power (SSP) to set up 6 Ocean Thermal Energy Conversion (OTEC) plants of 100 MW capacities each along the Tamilnadu Coast for serious consideration and recommending the setting up of one plant to begin with at Kulasekarpatnam area.

The Capital cost per K.W. of power production is estimated at US \$1000 for OTEC plant compared to US\$1100 for oil based US\$2200 for coal based, US\$2340 for hydro, and US\$2450 for nuclear power. The fuel cost in the case of OTEC is practically nil. Moreover valuable Bi products are obtained from OTEC plants. These include fresh water for irrigation and drinking, hydrogen and oxygen which can be used as feedstock in manufacture of other products, ammonia that can be used as fertilizers and methanol that can be mixed with gasoline. If the value of the power and by-products are added together, the annual income of the typical 100MW plant can amount to more than US \$100 million.

WIND ENERGY:

Wind energy is fast emerging as the most cost-effective source of power as it combines the abundance of a natural element with modern technology. The growing interest in wind power technology can be attributed not only to its cost effectiveness but also to other attractive features like modularity, short project gestation and the non-polluting nature of the technology. In India, the exercise to harness wind energy includes wind pumps, wind battery chargers, stand alone wind electric generators and grid connected wind farms. The department of non-conventional energy

sources (DNES) in association with state agencies has been responsible for creating and sustaining interest in the field.

SOLAR ENERGY:

It is believed that with just 0.1 per cent of the 75,000 trillion kWh of solar energy that reaches the earth, planet's energy requirement can be satisfied. Electricity can be generated with the help of solar energy through the solar thermal route, as well as directly from sunlight with the help of Solar PhotoVoltaic (SPV) technology. SPV Systems are being used for lighting, water pumping, and telecommunications and also for village size power plants in rural areas. SPV systems are being used to provide lighting under the National Literacy mission, refrigeration for vaccine storage and transport under the National immunization programme, drinking water and power for telecommunications. Indian railways have been using this technology for signaling.

PRICING:

Electricity by no means is a cheap form of energy. If its efficient use is to be encouraged, the price of electricity should reflect its true economic value. There could be cross subsidization within the tariff structure to a limited extent, but this cannot be extended to a level where the viability of the industry is jeopardized.

PROBLEMS:

The power sector in India is beset with a number of problems. They relate to delays in the formulation and implementation of various projects, poor utilization of capacity, bottlenecks in the supply of coal to thermal station, and its poor quality, faulty distribution and transmission arrangements and bad planning leading to an injudicious hydel thermal mix. Ecological problems are also vexing this sector.

Hurdles in environmental clearances tend to slow down completion of power projects. Compensatory afforestation and land acquisition have proved to be major bottlenecks in the clearance of power projects. The main problem faced in the case of environmental clearances is the shortage of land for compensatory afforestation. While project authorities are prepared to invest funds in afforestation land, the state governments are not able to provide the required land. The Government has proposed to set up a task force to look into clearances for power projects and speed up the clearances.

SHORT AND LONG TERM MEASURES TO COPE WITH THE ENERGY SHORTAGES:

Short term Strategy:

1. The increased number of short gestation gas based projects to add capacity and stabilize power supply.

2. Permitting the use of gas and oil fuels at selected power plants either to supplement or to substitute coal with a view to increase power production.
3. Undertaking renovation and modernization programs at the various thermal and hydro power plants to improve availability and performance and maximize power generation. It is hoped that Power Finance Corporation would play a significant role in this regard.
4. Improving the quality and ensuring consistency of coal supplies to power plants.
5. Reduction in Transmission & Distribution losses.
6. Effective interconnected operation of power systems in the various regions to enable transfer of power from surplus to deficit systems and also ensuring delivery of power from Central sector power plants to beneficiary states.

Long term strategy:

1. Acceleration of hydro development by focusing on removing the various inadequacies in organization. Management funding etc. it would be desirable and necessary to make provision of adequate funds especially earmarks for hydro development.
2. To launch a larger T & D Programmed to remove the present inadequacies, strengthening of the regional grids and bringing about an overall improvement in the T & D losses.

3. Coal benefaction by adopting more sophisticated techniques to ensure better and consistent quality of coal to the power plants.
4. Diversification of fuels and modes of transportation of coal to thermal power plants to ensure adequate supply of fuel of appropriate quality.
5. Strengthening the organization responsible for erection and commissioning of power plants.

PRIVATE SECTOR PARTICIPATION IN POWER GENERATION

The central Government has formulated a scheme to encourage greater participation by private enterprises in electricity generation, supply and distribution. Private enterprises can set up units either as licensees, distributing power in a licensed area from own generation or purchased power or as generating companies, generating power for supply to the grid. The break up of the capital investment is:

1. 20% equity out of which at least 11% to be raised as promoter's contribution
2. 80% of the capital investment to be raised through loans and only 50% of this amount could be raised from public FIs.
3. Debt equity ratio has been raised up to 4:1
4. Increase in the prescribed rate of return for the license has been approved from the existing 12% to 15%.

5. Capitalization of interest during construction has been permitted at the actual cost (instead of the present 1% above the Reserve Bank rate) for the initial project as well as for the subsequent expansions.
6. Period of initial validity of the license has been increased to 30 years from the existing 20 years and subsequent extension for 20 years on each occasion.
7. Private licenses have been exempted from obtaining clearance under the MRPT act.
8. To ensure additional resources mobilization it has been proposed that at least 60% of the outlays come from sources other than public financial institutions and at least 11% through promoter's contribution.
9. A special cell to be created in department of power to deal with proposals expeditiously for private sector participation.

THE FUTURE:

Government's decision to invite the private sector to participate in the power generation sector is most opportune and constructive approach Par excellence.

The positive and encouraging initiatives from the government are bound to find favourable responses from the private sector. The solution to our perennial power crunch seems to lie in private participation.

Chapter – 4

OVERVIEW OF
LANCO GROUP

PROFILE OF GENTING LANCO POWER (INDIA) PRIVATE LIMITED
(OPERATIONS & MAINTENANCE COMPANY FOR LANCO
KONDAPALLI POWER PRIVATE LIMITED)

Genting Lanco Power (India) Private Limited is a subsidiary of Genting group of companies based at Kuala Lumpur, Malaysia. Genting group has its presence in diversified fields like Power, Plantations, Paper & Packaging, Entertainment, Resorts & Hotels, Property development, Cruise liners, e Commerce, Oil and Gas.

Genting group is Malaysia's leading multinational corporation and one of Asia's best-managed companies with over 36,000 employees globally. The group is renowned for its strong management leadership, financial prudence and sound investment discipline.

The combined market capitalization of the group is about US \$9 billion. The operating revenue for the group for the year 2007 is US \$1.53 billion.

Genting Lanco Power (India) Private Limited has entered in to a 15 years Operations and Maintenance Agreement with Lanco Kondapalli Power Private Limited, who are the owners of the 368 MW gas fired combined cycle power plant at kondapalli.

Genting Lanco Power (India) Private Limited has its registered office at Lanco Kondapalli Power Plant, Kondapalli IDA, and Krishna District.

LANCO GROUP PROFILE

LANCO Group, headquartered in Hyderabad, India is one of the leading business houses in South India. It has an asset base of US \$ 450 million and a turnover of more than US \$ 300 million. With operational experience in power plants based on Gas, Biomass and Wind and an operating capacity of 509 MW, LANCO is heading for a capacity of 2500 MW and an asset base of US \$ 2.5 billion by the year 2010.

Lanco is a well-diversified group with activities like power generation, engineering and construction, manufacturing, Information technology (IT), and property development. Lanco group is striving to Empower, Enable and Enrich partner, business associates and to be the chosen vehicle for growth for stakeholders and source of inspiration to the society. The group is recognized as a leading player in the Indian economic scenario with operation in USA and UK. LANCO also has presence in Civil Construction, Property Development, Manufacturing of Pig Iron & Ductile Iron Spun Pipes and Information Technology. LANCO's overall growth is attributed to its technical, Commercial and managerial skills, which is appreciated by its International partners – Commonwealth Development Corporation (ACTIS/Globules) of the United Kingdom, Genting Group of Malaysia and Doosan of Korea.

HISTORY AND EVOLUTION

The Lanco group of companies was established nurtured and developed by a team of dedicated young technocrats. The burning desire to achieve versatility in engineering spawned the magnificent decade –old growth of the present day multifaceted conglomerate that touches the nerve center of the country.

L. Rajagopal, a technocrat-turned industrialist, is the Founder Chairman of LANCO Group. Established in 1989, the Group's activities range from Power Generation, Engineering and Construction, Manufacturing to Information Technology. Under his dynamic leadership, the Group's capital outlay has touched a whopping US \$ 450 million and is recognized as one of the leading players in the infrastructure sector in India.

MEMBER OF PARLIAMENT

After one-and-a-half decades of outstanding contribution to the industry, Rajagopal chose to enter public life in 2003. He contested the recent elections to the Lower House of Parliament for Vijayawada constituency and won a landslide victory. As a Member of Parliament, his avowed mission is to make a difference in public life.

OBJECTIVES

1. To provide basic amenities for the rural poor.

2. To save arts of historical relevance which are on the verge of extinction.
3. To develop integrated programmes for the differently abled.
4. To encourage fresh talent in the area of sports.
5. To take up other humanitarian activities.

LANCO INDUSTRIES LIMITED: AN ISO 9001 CERTIFIED CO.

Lanco industries Ltd. is established in the year 1993 had setup a state-of-the-art integrated Pig Iron and Cement Plants, which had in fact set the countries modern day technological innovations. The complex has a captive power plant generating 2.5 MW of electricity from waste that meets the substantial part of the power requirement.

LANCO CONSTRUCTION LTD.

This was established in the year 1993 and has executed most demanding and difficult projects in the field of civil and construction engineering. Lanco constructions ltd. today stand tall and proud as one the leading civil engineering companies by building competencies, developing modern construction management methods and by adopting the highest standards of quality.

At Lanco diverse dimension of growth is achieved through converging rays of vision creating dimensions.

KALAHASTI CASTINGS limited an example of the forward integration of the company established in 1997 located strategically beside the Pig Iron Plant avoiding re-melting and transportation it employs delved process that ensures the highest quality and durability.

LANCO PROJECT LTD

Focuses on the immense opportunities in the area of Real Estates, Construction and Property Development, International shopping malls, Food counters etc are a few projects on the anvil.

LANCO's venture into power is a natural extension of its core mission. Lanco Kondapalli Power Pvt. Ltd. is a short gestation Poly fuel based combined cycle power plant. The 368.144 mw (ISO) power plant has a build- operate -own agreement with the state government. It is Lanco's timely answer to the nations increasing power needs. Lanco Kondapalli Power Ltd. is a joint venture involving Lanco group, Genting Group of Malaysia, Hanjung (the Korean heavy industries and Construction Company) and the Common Wealth Development Corporation Ltd. The project reflects Lanco's ability to partner with the global players and achieve inter organization synergies that give its vision great scope and reach.

LANCO KONDAPALLI POWER PRIVATE LTD

Vision:

1. To empower, enable and enrich partners, business and associates.

2. To be the chosen vehicle of growth for the Stakeholders and a source of inspiration for the society.

Mission

1. To be a leader in all areas key to the development of a nation and progress of the world.
2. To be a leader in the field of Infrastructure, Manufacturing and Information Technology.
3. To become learning organization and enable people to think like geniuses.
 - Where every associate achieves outstanding results.
 - Where capabilities are nurtured and stretched beyond boundaries for new understandings, high performance, quality relations and attainment of peace and happiness.
 - Where an employee makes transition from an old world to a new world, from an old understanding to a desired understanding and from a subordinate to an associate.
4. To constantly evolve and seek synergies between the interests of employers and those of employees and to work intelligently towards empowerment of associates.
5. In view of global competition and knowledge explosion infusion in the market place with complex, cognitive work, we seek to build

efficiencies in such an uncertain environment through empowerment of employees.

- Where decision-making is at frontline levels
 - Where decision-making responsibility vests with self-directing teams close to internal and external customers and associates take charge of their own jobs.
 - Where the organization is built, sleek, for speed, flexibility, quality and service that are essential for global competition.
6. To make association with us an enriching experience to our partners, businesses and associates.
 7. To work with honest purpose, strategic planning and enduring perseverance to achieve customer satisfaction, stakeholder benefits and measurable economic growth for the organization.

Philosophy

1. Assemble best people, delegate authority and don't interfere "people make the difference"
2. Business heads are entrepreneurs
3. Mistakes are facts of life. Its is response to the error that counts.

Success

1. Create your luck by hard work
2. Trust + delegation = growth.

Work culture

1. Commitment, creativity, efficiency, team spirit.

PROMOTERS AND EQUITY PARTNERS

The power project is promoted by Lanco group of India and is co-promoted by

1. Genting Group of Malaysia
2. (CDC) common wealth development corporation UK
3. (Doosan) Doosan heavy industries and construction co.ltd in Korea.

LOCATION

The plant is located at Kondapalli industrial development area in Krishna (Dist.) of Andhra Pradesh. The plant is connected by road (national high way no. 9), broad gauge railway line and is approximately 25 km from Vijayawada .The registered office is at Lanco house, No - 565,

phase - III, Jubilee Hills, Road no – 92, Hyderabad, Andhra Pradesh 500033, India.

Nearest railway station	-	Kondapalli railway station
Nearest airport	-	Gannavaram
Access road	-	National highway No –9
Source of water	-	Krishna river 9-km from the site
Climatic condition	-	Tropical hot, Humid.

LANCO POWER PLANT /OPERATION AND MAINTENANCE

The project comprise of a combined cycle power plant consisting of two (2) gas turbine generating units, two heat recovery steam generator and one steam turbine generation unit along with all electrical system, Controls and instrumentation, Civil, Structural and architectural works.

Lanco Kondapalli Power Private Limited (LKPPPL) is an Independent Power Project (IPP) located at Kondapalli Industrial Developmental Area near Vijayawada in India, set up at a cost of around Rs.11,000 million (US \$275 million), the Plant is a 368.144 MW Combined Cycle Power Project operating on Natural Gas as Primary fuel.

The plant operates on natural gas as the main fuel and Naphtha; HSD as the alternative fuels Natural gas fuel is being received at site from Tatipaka near Rajahmundry through a pipeline laid down by GAIL

Fuel

Received

Naphtha fuel	-	Through dedicated pipeline from HPCL Kondapalli depot.
HSD	-	Road tankers

The Operations & Maintenance of the plant is done by GLPIPL (Genting Lanco Power (India) Private Limited) which is a joint venture of Lanco group Hyderabad and Genting Group of Malaysia.

AWARDS AND CERTIFICATES

1. Leadership and Excellence Award in Safety, Health & Environment 2002 by Co-federation of Indian Industries.
2. Best Environmental Improvement award 2003 FAPCCI.
3. Certificate of Environmental management system with ISO 14001 (1996) from LRQA April 2003.
4. Environmental Excellence Award 2004 by Green-tech Foundation, New Delhi.
5. Certificate of Quality Management System with ISO 9001 LRQM; April 2004.

6. 25% Cess Rebate on Water uses by APPCB.

7. OSHAS 18001 Certified – June 2005.

ENVIRONMENT POLICY

We are committed to achieve satisfaction of interested parties and protect environment by

1. Generation of power by implementation of prudent Eco friendly methods.
2. Conservation of natural resources like natural gas and water.
3. Complying to all the legal requirements.
4. Continual improvement in the environmental performance by minimizing the emission and discharges & prevention of pollution.
5. Enhancing environmental awareness among employee's contractors and surrounding society.

QUALITY POLICY

We are committed to continually improve the quality of our performance through the application of our Quality policy.

1. Utilizing Commercial, Engineering and Human Resources, to Minimize Risks to Personnel, Plant & Equipment and Maximize plant Availability for Generation of Power.
2. Providing the best policies level of commercial performance for the benefit of all Stake Holders.
3. Implementing prudent utility practices and providing Healthy and Excellent Working Environment in all Disciplines of Engineering and Business as documented in the Quality System.
4. Treating all staff & families fairly and with respect while encouraging personnel growth.

OCCUPATIONAL HEALTH & SAFETY (OH&S) POLICY

The Management is committed to maintain high standards of health and safety in the workplace and shall consider OH&S in all its business activities.

1. Provide a safe working place to all of our direct and indirect employees by minimizing Occupational Health & Safety Risks and practicing National Standards.
2. Monitor and maintain health, safety and welfare of all employees and comply with all applicable statutes.

3. Provide appropriate and on going Information, Instruction and Training of our direct and indirect employees.

LKPPL'S COMMITMENT TO CLEAN & SAFE ENVIRONMENT

(Green belt Management)

Lanco Commitment to re vegetation is

1. Encourage native fauna to develop.
2. Contribute to a reduction in green house gases
3. Reduce noise level
4. Minimize the effect of soil erosion.
5. Help to restore the site to a sustainable system.
6. Improve as the aspects of the power plant.

On going trees planting and maintaining theme are the important aspects of environmental management program at LANCO.

NOISE MANAGEMENT

Efforts to minimize noise emission from equipment and activities.

1. Acoustic linings around gas and steam turbines and boilers.

2. Silencers have been provided.
3. Noise minimization policy for equipment.

EFFLUENT DISCHARGED FROM POWER PLANT

Well-developed chemical laboratory to cater the need for monitoring effluent quality as per APPCD Norms.

1. Gaseous emission mgt. – as issues of green house gases has become prominent in the public.
2. Water mgt. - Acknowledges importance of maintaining water quality.
3. Community participation.
4. Environmental awareness training.

COMPANY HIGH LIGHTS

1. 368.144 MW combined cycle power plant under build – operate – own arrangement with the state government.
2. The single largest investment in Andhra Pradesh, by any Andhra Pradesh based group.
3. Power purchase agreement firmed with AP TRANSCO for 15 years.

4. Eco – friendly, adhering to highest standards of safety and conservation of natural resources.
5. The first project cleared by Central Electricity Authority (CEA) under the international competitive Bidding (ICB) route for power projects in India.
6. The first of the ICB power projects in India to achieve financial closure and complete construction in shortest possible time.
7. One of the lowest evacuations costs to AP TRANSCO.
8. The first private sector power project to receive disbursement of finance from Power Finance Corporation limited, India.
9. The shortest construction time in the private sector
10. Location advantages include:
 - a) Proximity to National and state Highway
 - b) Just 1.5 km from fuel storage facility of Hindustan Petroleum Corporation limited.
 - c) Close to the river Krishna and up stream of the Prakasam Barrage ensuring perennial water supply.
 - d) Adjacent to 220 kWh Substation of AP TRANSCO.

Chapter – 5

RATIO ANALYSIS

RATIO ANALYSIS

FINANCIAL ANALYSIS

Financial analysis is the process of identifying the financial strengths and weaknesses of the firm and establishing relationship between the items of the balance sheet and profit & loss account.

Financial ratio analysis is the calculation and comparison of ratios, which are derived from the information in a company's financial statements. The level and historical trends of these ratios can be used to make inferences about a company's financial condition, its operations and attractiveness as an investment. The information in the statements is used by

- Trade creditors, to identify the firm's ability to meet their claims i.e. liquidity position of the company.
- Investors, to know about the present and future profitability of the company and its financial structure.
- Management, in every aspect of the financial analysis. It is the responsibility of the management to maintain sound financial condition in the company.

RATIO ANALYSIS

The term “Ratio” refers to the numerical and quantitative relationship between two items or variables. This relationship can be exposed as

- Percentages
- Fractions
- Proportion of numbers

Ratio analysis is defined as the systematic use of the ratio to interpret the financial statements. So that the strengths and weaknesses of a firm, as well as its historical performance and current financial condition can be determined. Ratio reflects a quantitative relationship helps to form a quantitative judgment.

STEPS IN RATIO ANALYSIS

- The first task of the financial analysis is to select the information relevant to the decision under consideration from the statements and calculates appropriate ratios.
- To compare the calculated ratios with the ratios of the same firm relating to the past or with the industry ratios. It facilitates in assessing success or failure of the firm.

- Third step is to interpretation, drawing of inferences and report writing conclusions are drawn after comparison in the shape of report or recommended courses of action.

BASIS OR STANDARDS OF COMPARISON

Ratios are relative figures reflecting the relation between variables. They enable analyst to draw conclusions regarding financial operations. They use of ratios as a tool of financial analysis involves the comparison with related facts. This is the basis of ratio analysis. The basis of ratio analysis is of four types.

- Past ratios, calculated from past financial statements of the firm.
- Competitor's ratio, of the some most progressive and successful competitor firm at the same point of time.
- Industry ratio, the industry ratios to which the firm belongs to
- Projected ratios, ratios of the future developed from the projected or pro forma financial statements

NATURE OF RATIO ANALYSIS

Ratio analysis is a technique of analysis and interpretation of financial statements. It is the process of establishing and interpreting various ratios for helping in making certain decisions. It is only a means of

understanding of financial strengths and weaknesses of a firm. There are a number of ratios which can be calculated from the information given in the financial statements, but the analyst has to select the appropriate data and calculate only a few appropriate ratios. The following are the four steps involved in the ratio analysis.

- Selection of relevant data from the financial statements depending upon the objective of the analysis.
- Calculation of appropriate ratios from the above data.
- Comparison of the calculated ratios with the ratios of the same firm in the past, or the ratios developed from projected financial statements or the ratios of some other firms or the comparison with ratios of the industry to which the firm belongs.

INTERPRETATION OF THE RATIOS

The interpretation of ratios is an important factor. The inherent limitations of ratio analysis should be kept in mind while interpreting them. The impact of factors such as price level changes, change in accounting policies, window dressing etc., should also be kept in mind when attempting to interpret ratios. The interpretation of ratios can be made in the following ways.

- Single absolute ratio
- Group of ratios

- Historical comparison
- Projected ratios
- Inter-firm comparison

GUIDELINES OR PRECAUTIONS FOR USE OF RATIOS

The calculation of ratios may not be a difficult task but their use is not easy. Following guidelines or factors may be kept in mind while interpreting various ratios are

- Accuracy of financial statements
- Objective or purpose of analysis
- Selection of ratios
- Use of standards
- Caliber of the analysis

IMPORTANCE OF RATIO ANALYSIS

- Aid to measure general efficiency
- Aid to measure financial solvency
- Aid in forecasting and planning

- Facilitate decision making
- Aid in corrective action
- Aid in intra-firm comparison
- Act as a good communication
- Evaluation of efficiency
- Effective tool

LIMITATIONS OF RATIO ANALYSIS

- Differences in definitions
- Limitations of accounting records
- Lack of proper standards
- No allowances for price level changes
- Changes in accounting procedures
- Quantitative factors are ignored
- Limited use of single ratio
- Background is over looked
- Limited use

- Personal bias

CLASSIFICATIONS OF RATIOS

The use of ratio analysis is not confined to financial manager only. There are different parties interested in the ratio analysis for knowing the financial position of a firm for different purposes. Various accounting ratios can be classified as follows:

1. Traditional Classification
2. Functional Classification
3. Significance ratios

1. Traditional Classification

It includes the following.

- Balance sheet (or) position statement ratio: They deal with the relationship between two balance sheet items, e.g. the ratio of current assets to current liabilities etc., both the items must, however, pertain to the same balance sheet.
- Profit & loss account (or) revenue statement ratios: These ratios deal with the relationship between two profit & loss account items, e.g. the ratio of gross profit to sales etc.,
- Composite (or) inter statement ratios: These ratios exhibit the relation between a profit & loss account or income statement item and a

balance sheet items, e.g. stock turnover ratio, or the ratio of total assets to sales.

2. Functional Classification

These include liquidity ratios, long term solvency and leverage ratios, activity ratios and profitability ratios.

3. Significance ratios

Some ratios are important than others and the firm may classify them as primary and secondary ratios. The primary ratio is one, which is of the prime importance to a concern. The other ratios that support the primary ratio are called secondary ratios.

IN THE VIEW OF FUNCTIONAL CLASSIFICATION THE RATIOS ARE

1. Liquidity ratio
2. Leverage ratio
3. Activity ratio
4. Profitability ratio

1. LIQUIDITY RATIOS

Liquidity refers to the ability of a concern to meet its current obligations as & when there becomes due. The short term obligations of a firm can be met only when there are sufficient liquid assets. The short term obligations are met by realizing amounts from current, floating (or) circulating assets. The current assets should either be calculated liquid (or) near liquidity. They should be convertible into cash for paying obligations of short term nature. The sufficiency (or) insufficiency of current assets should be assessed by comparing them with short-term current liabilities. If current assets can pay off current liabilities, then liquidity position will be satisfactory.

To measure the liquidity of a firm the following ratios can be calculated

- Current ratio
- Quick (or) Acid-test (or) Liquid ratio
- Absolute liquid ratio (or) Cash position ratio

(a) CURRENT RATIO:

Current ratio may be defined as the relationship between current assets and current liabilities. This ratio also known as Working capital ratio is a measure of general liquidity and is most widely used to make the analysis of a short-term financial position (or) liquidity of a firm.

Current assets

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Components of current ratio

CURRENT ASSETS	CURRENT LIABILITIES
Cash in hand	Out standing or accrued expenses
Cash at bank	Bank over draft
Bills receivable	Bills payable
Inventories	Short-term advances
Work-in-progress	Sundry creditors
Marketable securities	Dividend payable
Short-term investments	Income-tax payable
Sundry debtors	
Prepaid expenses	

(b) QUICK RATIO

Quick ratio is a test of liquidity than the current ratio. The term liquidity refers to the ability of a firm to pay its short-term obligations as & when they become due. Quick ratio may be defined as the relationship between quick or liquid assets and current liabilities. An asset is said to be liquid if it is converted into cash with in a short period without loss of value.

$$\text{Quick ratio} = \frac{\text{Quick or liquid assets}}{\text{Current liabilities}}$$

Components of quick or liquid ratio

QUICK ASSETS	CURRENT LIABILITIES
Cash in hand	Out standing or accrued expenses
Cash at bank	Bank over draft
Bills receivable	Bills payable
Sundry debtors	Short-term advances
Marketable securities	Sundry creditors
Temporary investments	Dividend payable
	Income tax payable

(c) ABSOLUTE LIQUID RATIO

Although receivable, debtors and bills receivable are generally more liquid than inventories, yet there may be doubts regarding their realization into cash immediately or in time. Hence, absolute liquid ratio should also be calculated together with current ratio and quick ratio so as to exclude even receivables from the current assets and find out the absolute liquid assets.

$$\text{Absolute liquid ratio} = \frac{\text{Absolute liquid assets}}{\text{Current liabilities}}$$

Absolute liquid assets include cash in hand etc. The acceptable forms for this ratio is 50% (or) 0.5:1 (or) 1:2 i.e., Rs.1 worth absolute liquid assets are considered to pay Rs.2 worth current liabilities in time as all the

creditors are nor accepted to demand cash at the same time and then cash may also be realized from debtors and inventories.

Components of Absolute Liquid Ratio

ABSOLUTE LIQUID ASSETS	CURRENT LIABILITIES
Cash in hand	Out standing or accrued expenses
Cash at bank	Bank over draft
Interest on Fixed Deposit	Bills payable
	Short-term advances
	Sundry creditors
	Dividend payable
	Income tax payable

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2. LEVERAGE RATIOS

The leverage or solvency ratio refers to the ability of a concern to meet its long term obligations. Accordingly, long term solvency ratios indicate firm's ability to meet the fixed interest and costs and repayment schedules associated with its long term borrowings.

The following ratio serves the purpose of determining the solvency of the concern.

- Proprietary ratio

(a) PROPRIETARY RATIO

A variant to the debt-equity ratio is the proprietary ratio which is also known as equity ratio. This ratio establishes relationship between share holders funds to total assets of the firm.

$$\text{Proprietary ratio} = \frac{\text{Shareholders funds}}{\text{Total assets}}$$

SHARE HOLDERS FUND	TOTAL ASSETS
Share Capital	Fixed Assets
Reserves & Surplus	Current Assets
	Cash in hand & at bank
	Bills receivable
	Inventories
	Marketable securities
	Short-term investments
	Sundry debtors
	Prepaid Expenses

3. ACTIVITY RATIOS

Funds are invested in various assets in business to make sales and earn profits. The efficiency with which assets are managed directly effect the volume of sales. Activity ratios measure the efficiency (or) effectiveness with which a firm manages its resources (or) assets. These ratios are also called “Turn over ratios” because they indicate the speed with which assets are converted or turned over into sales.

- Working capital turnover ratio
- Fixed assets turnover ratio
- Capital turnover ratio
- Current assets to fixed assets ratio

(a) WORKING CAPITAL TURNOVER RATIO

Working capital of a concern is directly related to sales.

$$\text{Working capital} = \text{Current assets} - \text{Current liabilities}$$

It indicates the velocity of the utilization of net working capital. This indicates the no. of times the working capital is turned over in the course of a year. A higher ratio indicates efficient utilization of working capital and a lower ratio indicates inefficient utilization.

Working capital turnover ratio = $\frac{\text{cost of goods sold}}{\text{working capital}}$

Components of Working Capital

CURRENT ASSETS	CURRENT LIABILITIES
Cash in hand	Out standing or accrued expenses
Cash at bank	Bank over draft
Bills receivable	Bills payable
Inventories	Short-term advances
Work-in-progress	Sundry creditors
Marketable securities	Dividend payable
Short-term investments	Income-tax payable
Sundry debtors	
Prepaid expenses	

(b) FIXED ASSETS TURNOVER RATIO

It is also known as sales to fixed assets ratio. This ratio measures the efficiency and profit earning capacity of the firm. Higher the ratio, greater is the intensive utilization of fixed assets. Lower ratio means under-utilization of fixed assets.

$$\text{Fixed assets turnover ratio} = \frac{\text{Cost of Sales}}{\text{Net fixed assets}}$$

$$\text{Cost of Sales} = \text{Income from Services}$$

$$\text{Net Fixed Assets} = \text{Fixed Assets} - \text{Depreciation}$$

(c) CAPITAL TURNOVER RATIOS

Sometimes the efficiency and effectiveness of the operations are judged by comparing the cost of sales or sales with amount of capital invested in the business and not with assets held in the business, though in both cases the same result is expected. Capital invested in the business may be classified as long-term and short-term capital or as fixed capital and working capital or Owned Capital and Loaned Capital. All Capital Turnovers are calculated to study the uses of various types of capital.

$$\text{Capital turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Capital employed}}$$

$$\text{Cost of Goods Sold} = \text{Income from Services}$$

$$\text{Capital Employed} = \text{Capital} + \text{Reserves \& Surplus}$$

(d) CURRENT ASSETS TO FIXED ASSETS RATIO

This ratio differs from industry to industry. The increase in the ratio means that trading is slack or mechanization has been used. A decline in the ratio means that debtors and stocks are increased too much or fixed assets are more intensively used. If current assets increase with the corresponding increase in profit, it will show that the business is expanding.

$$\text{Current Assets to Fixed Assets Ratio} = \frac{\text{Current Assets}}{\text{Fixed Assets}}$$

Component of Current Assets to Fixed Assets Ratio

CURRENT ASSETS	FIXED ASSETS
Cash in hand	Machinery
Cash at bank	Buildings
Bills receivable	Plant
Inventories	Vehicles
Work-in-progress	
Marketable securities	
Short-term investments	
Sundry debtors	
Prepaid expenses	

4. PROFITABILITY RATIOS

The primary objectives of business undertaking are to earn profits. Because profit is the engine, that drives the business enterprise.

- Net profit ratio
- Return on total assets
- Reserves and surplus to capital ratio
- Earnings per share
- Operating profit ratio
- Price – earning ratio
- Return on investments

(a) NET PROFIT RATIO

Net profit ratio establishes a relationship between net profit (after tax) and sales and indicates the efficiency of the management in manufacturing, selling administrative and other activities of the firm.

$$\text{Net profit ratio} = \frac{\text{Net profit after tax}}{\text{Net sales}}$$

$$\text{Net Profit after Tax} = \text{Net Profit} (-) \text{ Depreciation} (-) \text{ Interest} (-) \text{ Income Tax}$$

$$\text{Net Sales} = \text{Income from Services}$$

It also indicates the firm's capacity to face adverse economic conditions such as price competitors, low demand etc. Obviously higher the ratio, the better is the profitability.

(b) RETURN ON TOTAL ASSETS

Profitability can be measured in terms of relationship between net profit and assets. This ratio is also known as profit-to-assets ratio. It measures the profitability of investments. The overall profitability can be known.

$$\text{Return on assets} = \frac{\text{Net profit}}{\text{Total assets}}$$

$$\text{Net Profit} = \text{Earnings before Interest and Tax}$$

$$\text{Total Assets} = \text{Fixed Assets} + \text{Current Assets}$$

(c) RESERVES AND SURPLUS TO CAPITAL RATIO

It reveals the policy pursued by the company with regard to growth shares. A very high ratio indicates a conservative dividend policy and increased ploughing back to profit. Higher the ratio better will be the position.

$$\text{Reserves \& surplus to capital} = \frac{\text{Reserves\& surplus}}{\text{Capital}}$$

(d) EARNINGS PER SHARE

Earnings per share is a small verification of return of equity and is calculated by dividing the net profits earned by the company and those profits after taxes and preference dividend by total no. of equity shares.

$$\text{Earnings per share} = \frac{\text{Net profit after tax}}{\text{Number of Equity shares}}$$

The Earnings per share is a good measure of profitability when compared with EPS of similar other components (or) companies, it gives a view of the comparative earnings of a firm.

(e) OPERATING PROFIT RATIO

Operating ratio establishes the relationship between cost of goods sold and other operating expenses on the one hand and the sales on the other.

$$\text{Operation ratio} = \frac{\text{Operating cost}}{\text{Net sales}}$$

However 75 to 85% may be considered to be a good ratio in case of a manufacturing under taking.

Operating profit ratio is calculated by dividing operating profit by sales.

$$\text{Operating profit} = \text{Net sales} - \text{Operating cost}$$

$$\text{Operating profit ratio} = \frac{\text{Operating profit}}{\text{Sales}}$$

(f) PRICE - EARNING RATIO

Price earning ratio is the ratio between market price per equity share and earnings per share. The ratio is calculated to make an estimate of appreciation in the value of a share of a company and is widely used by investors to decide whether (or) not to buy shares in a particular company.

Generally, higher the price-earning ratio, the better it is. If the price earning ratio falls, the management should look into the causes that have resulted into the fall of the ratio.

$$\text{Price – Earning Ratio} = \frac{\text{Market Price per Share}}{\text{Earnings per Share}}$$

$$\text{Market Price per Share} = \frac{\text{Capital + Reserves \& Surplus}}{\text{Number of Equity Shares}}$$

$$\text{Earnings per Share} = \frac{\text{Earnings before Interest and Tax}}{\text{Number of Equity Shares}}$$

(g) RETURN ON INVESTMENTS

Return on share holder's investment, popularly known as Return on investments (or) return on share holders or proprietor's funds is the relationship between net profit (after interest and tax) and the proprietor's funds.

$$\text{Return on shareholder's investment} = \frac{\text{Net profit (after interest and tax)}}{\text{Shareholder's funds}}$$

The ratio is generally calculated as percentages by multiplying the above with 100.

Chapter – 6

DATA ANALYSIS

LIQUIDITY RATIO

1. CURRENT RATIO

(Amount in Rs.)

Current Ratio			
<i>Year</i>	<i>Current Assets</i>	<i>Current Liabilities</i>	<i>Ratio</i>
2003	58,574,151	7,903,952	7.41
2004	69,765,346	31,884,616	2.19
2005	72,021,081	16,065,621	4.48
2006	91,328,208	47,117,199	1.94
2007	115,642,068	30,266,661	3.82

Interpretation

As a rule, the current ratio with 2:1 (or) more is considered as satisfactory position of the firm.

When compared with 2006, there is an increase in the provision for tax, because the debtors are raised and for that the provision is created. The current liabilities majorly included Lanco Group of company for consultancy additional services.

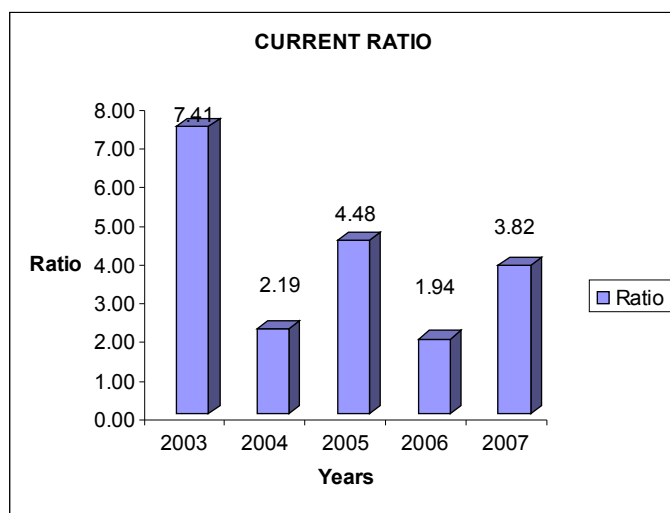
The sundry debtors have increased due to the increase to corporate taxes.

In the year 2006, the cash and bank balance is reduced because that is used for payment of dividends. In the year 2007, the loans and advances include majorly the advances to employees and deposits to

government. The loans and advances reduced because the employees set off their claims. The other current assets include the interest attained from the deposits. The deposits reduced due to the declaration of dividends. So the other current assets decreased.

The huge increase in sundry debtors resulted an increase in the ratio, which is above the benchmark level of 2:1 which shows the comfortable position of the firm.

GRAPHICAL REPRESENTATION



2. QUICK RATIO

(Amount in Rs.)

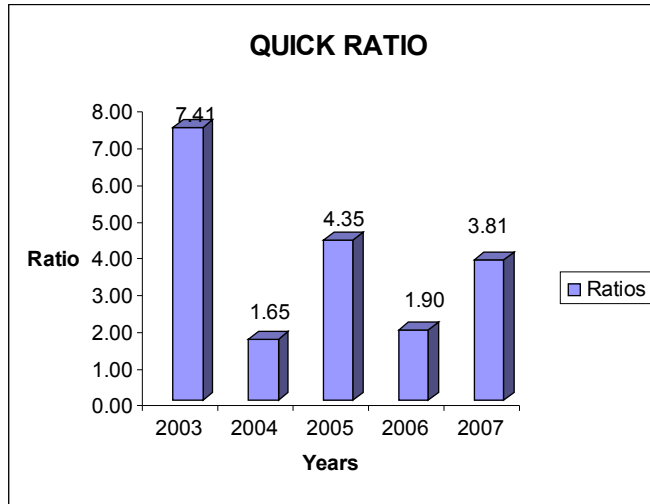
Quick Ratio			
<i>Year</i>	<i>Quick Assets</i>	<i>Current Liabilities</i>	<i>Ratio</i>
2003	58,574,151	7,903,952	7.41
2004	52,470,336	31,884,616	1.65
2005	69,883,268	16,065,620	4.35
2006	89,433,596	47,117,199	1.9
2007	115,431,868	30,266,661	3.81

Interpretation

Quick assets are those assets which can be converted into cash with in a short period of time, say to six months. So, here the sundry debtors which are with the long period does not include in the quick assets.

Compare with 2006, the Quick ratio is increased because the sundry debtors are increased due to the increase in the corporate tax and for that the provision created is also increased. So, the ratio is also increased with the 2006.

GRAPHICAL REPRESENTATION



3. ABOSULTE LIQUIDITY RATIO

(Amount in Rs.)

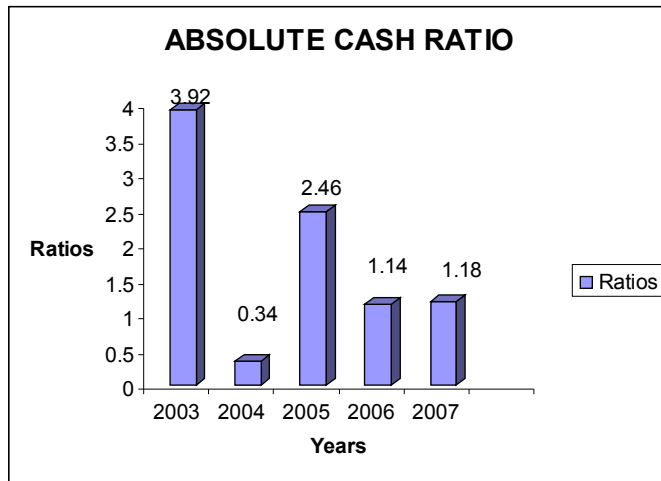
Absolute Cash Ratio			
<i>Year</i>	<i>Absolute Liquid Assets</i>	<i>Current Liabilities</i>	<i>Ratio</i>
2003	31,004,027	7,903,952	3.92
2004	10,859,778	31,884,616	0.34
2005	39,466,542	16,065,620	2.46
2006	53,850,852	47,117,199	1.14
2007	35,649,070	30,266,661	1.18

Interpretation

The current assets which are ready in the form of cash are considered as absolute liquid assets. Here, the cash and bank balance and the interest on fixed assts are absolute liquid assets.

In the year 2006, the cash and bank balance is decreased due to decrease in the deposits and the current liabilities are also reduced because of the payment of dividend. That causes a slight increase in the current year's ratio.

GRAPHICAL REPRESENTATION



LEVERAGE RATIOS

4. PROPRIETARY RATIO

(Amount in Rs.)

Proprietary Ratio			
<i>Year</i>	<i>Share Holders Funds</i>	<i>Total Assets</i>	<i>Ratio</i>
2003	67,679,219	78,572,171	0.86
2004	53,301,834	88,438,107	0.6
2005	70,231,061	89,158,391	0.79
2006	56,473,652	106,385,201	0.53
2007	97,060,013	129,805,102	0.75

Interpretation

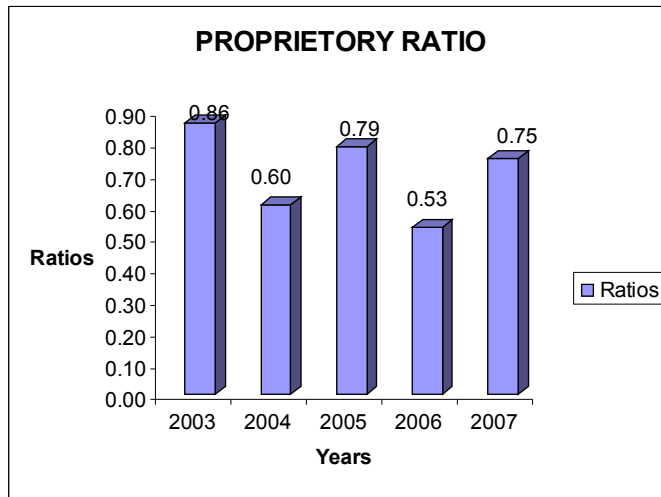
The proprietary ratio establishes the relationship between shareholders funds to total assets. It determines the long-term solvency of the firm. This ratio indicates the extent to which the assets of the company can be lost without affecting the interest of the company.

There is no increase in the capital from the year 2004. The share holder's funds include capital and reserves and surplus. The reserves and surplus is increased due to the increase in balance in profit and loss account, which is caused by the increase of income from services.

Total assets, includes fixed and current assets. The fixed assets are reduced because of the depreciation and there are no major increments in the fixed assets. The current assets are increased compared with the year

2006. Total assets are also increased than precious year, which resulted an increase in the ratio than older.

GRAPHICAL REPRESENTATION



ACTIVITY RATIOS

5. WORKING CAPITAL TURNOVER RATIO

(Amount in Rs.)

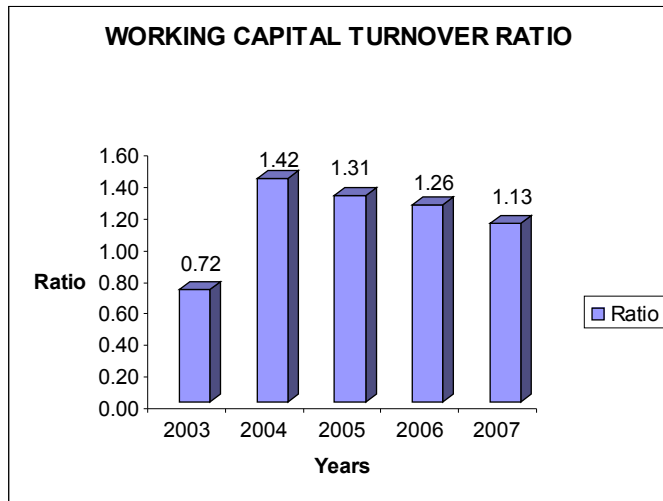
Working Capital Turnover Ratio			
<i>Year</i>	<i>Income From Services</i>	<i>Working Capital</i>	<i>Ratio</i>
2003	36,309,834	50,670,199	0.72
2004	53,899,084	37,880,730	1.42
2005	72,728,759	55,355,460	1.31
2006	55,550,649	44,211,009	1.26
2007	96,654,902	85,375,407	1.13

Interpretation

Income from services is greatly increased due to the extra invoice for Operations & Maintenance fee and the working capital is also increased greater due to the increase in from services because the huge increase in current assets.

The income from services is raised and the current assets are also raised together resulted in the decrease of the ratio of 2007 compared with 2006.

GRAPHICAL REPRESENTATION



6. FIXED ASSETS TURNOVER RATIO

(Amount in Rs.)

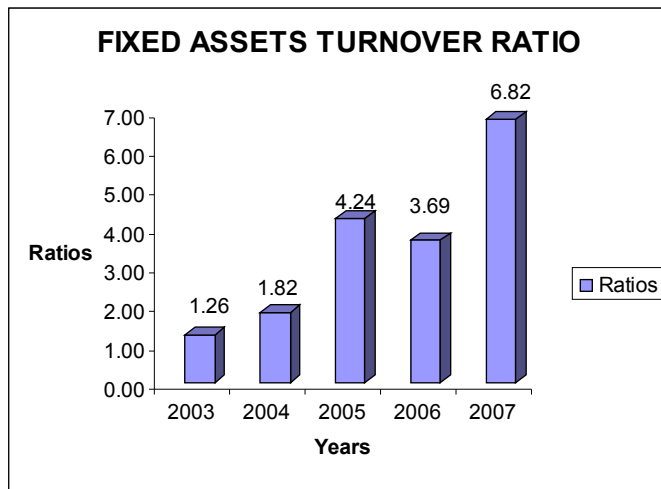
Fixed Assets Turnover Ratio			
<i>Year</i>	<i>Income From Services</i>	<i>Net Fixed Assets</i>	<i>Ratio</i>
2003	36,309,834	28,834,317	1.26
2004	53,899,084	29,568,279	1.82
2005	72,728,759	17,137,310	4.24
2006	55,550,649	15,056,993	3.69
2007	96,654,902	14,163,034	6.82

Interpretation

Fixed assets are used in the business for producing the goods to be sold. This ratio shows the firm's ability in generating sales from all financial resources committed to total assets. The ratio indicates the amount of one rupee investment in fixed assets.

The income from services is greatly increased in the current year due to the increase in the Operations & Maintenance fee due to the increase in extra invoice and the net fixed assets are reduced because of the increased charge of depreciation. Finally, that effected a huge increase in the ratio compared with the previous year's ratio.

GRAPHICAL REPRESENTATION



7. CAPITAL TURNOVER RATIO

(Amount in Rs.)

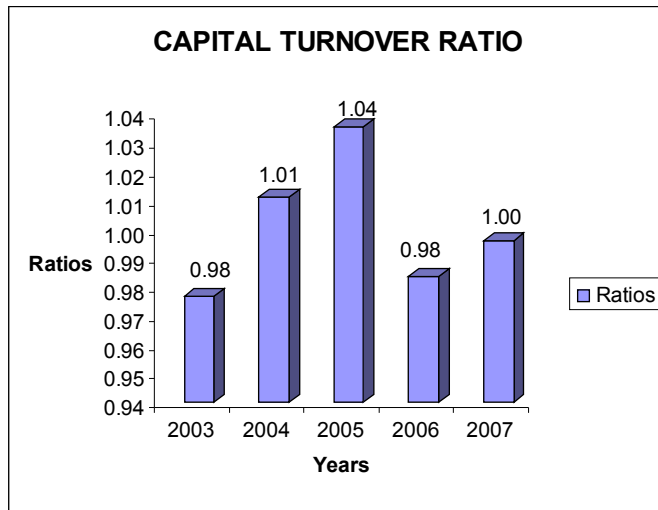
Capital Turnover Ratio			
<i>Year</i>	<i>Income From Services</i>	<i>Capital Employed</i>	<i>Ratio</i>
2003	36,309,834	37,175,892	0.98
2004	53,899,084	53,301,834	1.01
2005	72,728,759	70,231,061	1.04
2006	55,550,649	56,473,652	0.98
2007	96,654,902	97,060,013	1.00

Interpretation

This is another ratio to judge the efficiency and effectiveness of the company like profitability ratio.

The income from services is greaterly increased compared with the previous year and the total capital employed includes capital and reserves & surplus. Due to huge increase in the net profit the capital employed is also increased along with income from services. Both are effected in the increment of the ratio of current year.

GRAPHICAL REPRESENTATION



8. CURRENT ASSETS TO FIXED ASSETS RATIO

(Amount in Rs.)

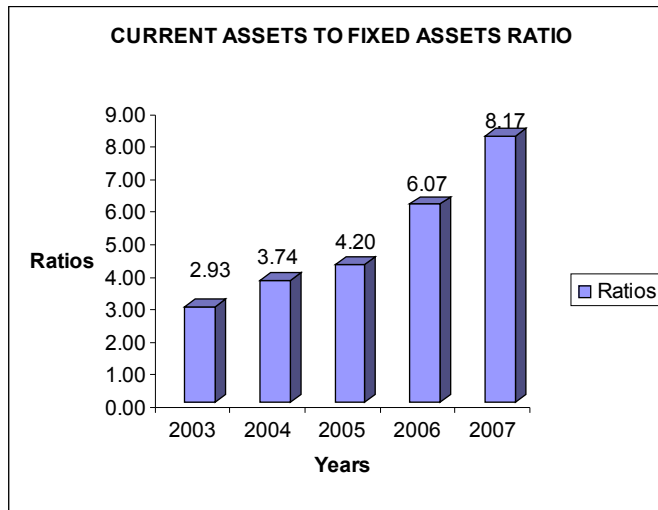
Current Assets To Fixed Assets Ratio			
<i>Year</i>	<i>Current Assets</i>	<i>Fixed Assets</i>	<i>Ratio</i>
2003	58,524,151	19,998,020	2.93
2004	69,765,346	18,672,761	3.74
2005	72,021,081	17,137,310	4.20
2006	91,328,208	15,056,993	6.07
2007	115,642,068	14,163,034	8.17

Interpretation

Current assets are increased due to the increase in the sundry debtors and the net fixed assets of the firm are decreased due to the charge of depreciation and there is no major increment in the fixed assets.

The increment in current assets and the decrease in fixed assets resulted an increase in the ratio compared with the previous year

GRAPHICAL REPRESENTATION



PROFITABILITY RATIOS

GENERAL PROFITABILITY RATIOS

9. NET PROFIT RATIO

(Amount in Rs.)

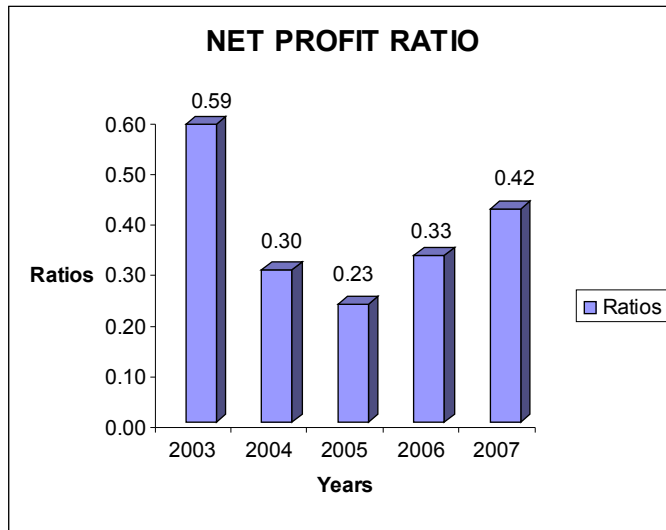
Net Profit Ratio			
<i>Year</i>	<i>Net Profit After Tax</i>	<i>Income from Services</i>	<i>Ratio</i>
2003	21,123,474	36,039,834	0.59
2004	16,125,942	53,899,084	0.30
2005	16,929,227	72,728,759	0.23
2006	18,259,580	55,550,649	0.33
2007	40,586,359	96,654,902	0.42

Interpretation

The net profit ratio is the overall measure of the firm's ability to turn each rupee of income from services in net profit. If the net margin is inadequate the firm will fail to achieve return on shareholder's funds. High net profit ratio will help the firm service in the fall of income from services, rise in cost of production or declining demand.

The net profit is increased because the income from services is increased. The increment resulted a slight increase in 2007 ratio compared with the year 2006.

GRAPHICAL REPRESENTATION



10. OPERATING PROFIT

(Amount in Rs.)

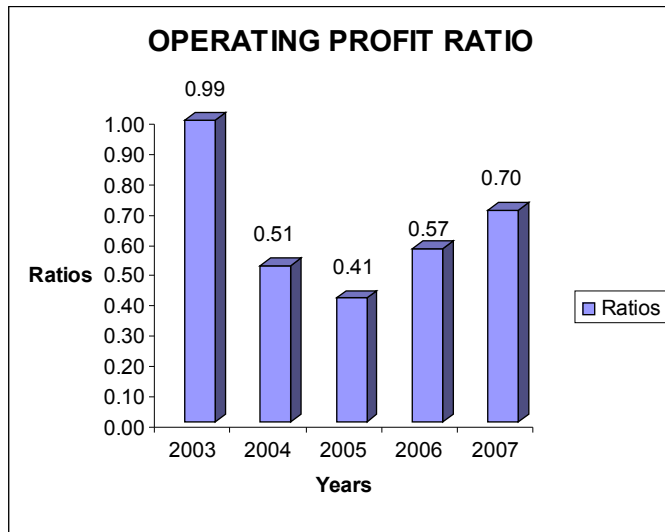
Operating Profit			
<i>Year</i>	<i>Operating Profit</i>	<i>Income From Services</i>	<i>Ratio</i>
2003	36,094,877	36,309,834	0.99
2004	27,576,814	53,899,084	0.51
2005	29,540,599	72,728,759	0.41
2006	31,586,718	55,550,649	0.57
2007	67,192,677	96,654,902	0.70

Interpretation

The operating profit ratio is used to measure the relationship between net profits and sales of a firm. Depending on the concept, it will decide.

The operating profit ratio is increased compared with the last year. The earnings are increased due to the increase in the income from services because of Operations & Maintenance fee. So, the ratio is increased slightly compared with the previous year.

GRAPHICAL REPRESENTATION



11. RETURN ON TOTAL ASSETS RATIO

(Amount in Rs.)

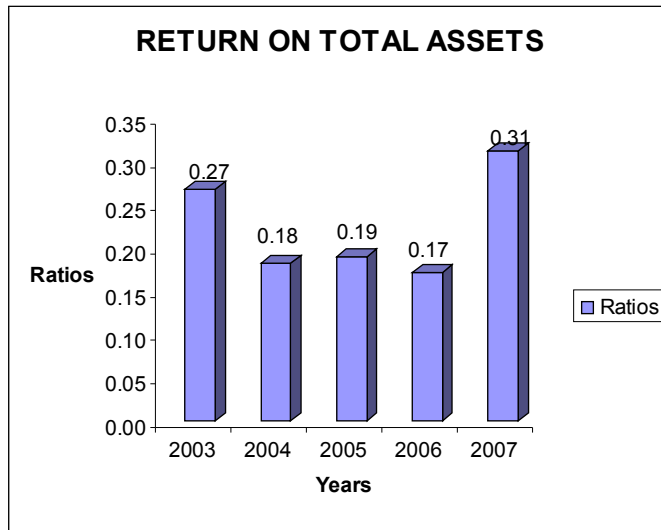
Return on Total Assets Ratio			
<i>Year</i>	<i>Net Profit After Tax</i>	<i>Total Assets</i>	<i>Ratio</i>
2003	21,123,474	78,572,171	0.27
2004	16,125,942	88,438,107	0.18
2005	16,929,227	89,158,391	0.19
2006	18,259,580	106,385,201	0.17
2007	40,586,359	129,805,102	0.31

Interpretation

This is the ratio between net profit and total assets. The ratio indicates the return on total assets in the form of profits.

The net profit is increased in the current year because of the increment in the income from services due to the increase in Operations & Maintenance fee. The fixed assets are reduced due to the charge of depreciation and no major increments in fixed assets but the current assets are increased because of sundry debtors and that effects an increase in the ratio compared with the last year i.e. 2006.

GRAPHICAL REPRESENTATION



12. RESERVES & SURPLUS TO CAPITAL RATIO

(Amount in Rs.)

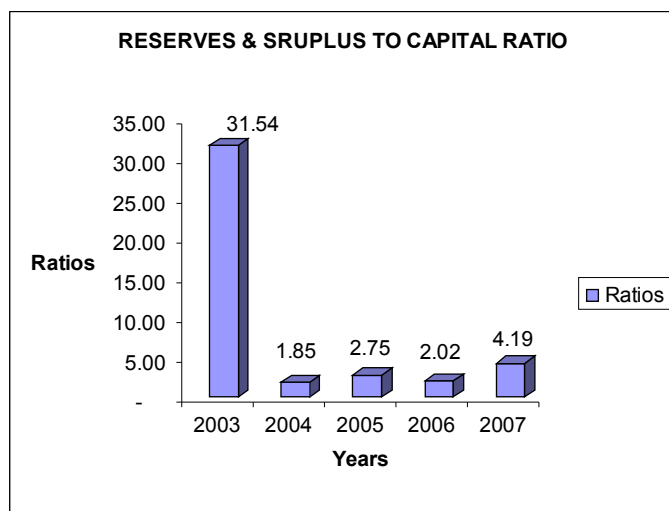
Reserves & Surplus To Capital Ratio			
Year	Reserves & Surplus	Capital	Ratio
2003	65,599,299	2,079,920	31.54
2004	34,582,554	18,719,280	1.85
2005	51,511,781	18,719,280	2.75
2006	37,754,372	18,719,280	2.02
2007	78,340,733	18,719,280	4.19

Interpretation

The ratio is used to reveal the policy pursued by the company a very high ratio indicates a conservative dividend policy and vice-versa. Higher the ratio better will be the position.

The reserves & surplus is decreased in the year 2006, due to the payment of dividends and in the year 2007 the profit is increased. But the capital is remaining constant from the year 2004. So the increase in the reserves & surplus caused a greater increase in the current year's ratio compared with the older.

GRAPHICAL REPRESENTATION



OVERALL PROFITABILITY RATIOS

13. EARNINGS PER SHARE

(Amount in Rs.)

Earnings Per Share			
<i>Year</i>	<i>Net Profit After Tax</i>	<i>No of Equity Shares</i>	<i>Ratio</i>
2003	21,123,474	207,992	101.56
2004	16,125,942	1,871,928	8.61
2005	16,929,227	1,871,928	9.04
2006	18,259,580	1,871,928	9.75
2007	40,586,359	1,871,928	21.68

Interpretation

Earnings per share ratio are used to find out the return that the shareholder's earn from their shares. After charging depreciation and after payment of tax, the remaining amount will be distributed by all the shareholders.

Net profit after tax is increased due to the huge increase in the income from services. That is the amount which is available to the shareholders to take. There are 1,871,928 shares of Rs.10/- each. The share capital is constant from the year 2004. Due to the huge increase in net profit the earnings per share is greaterly increased in 2007.

GRAPHICAL REPRESENTATION



14. PRICE EARNINGS (P/E) RATIO

(Amount in Rs.)

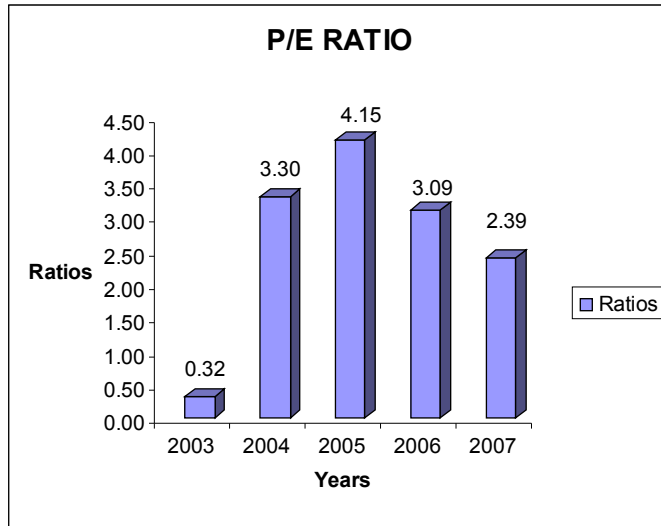
Price Earning (P/E) Ratio			
<i>Year</i>	<i>Market Price Per Share</i>	<i>Earnings Per Share</i>	<i>Ratio</i>
2003	32.54	101.56	0.32
2004	28.47	8.61	3.30
2005	37.52	9.04	4.15
2006	30.17	9.75	3.09
2007	51.85	21.68	2.39

Interpretation

The ratio is calculated to make an estimate of application in the value of share of a company.

The market price per share is increased due to the increase in the reserves & surplus. The earnings per share are also increased greaterly compared with the last year because of increase in the net profit. So, the ratio is decreased compared with the previous year.

GRAPHICAL REPRESENTATION



15. RETURN ON INVESTMENT

(Amount in Rs.)

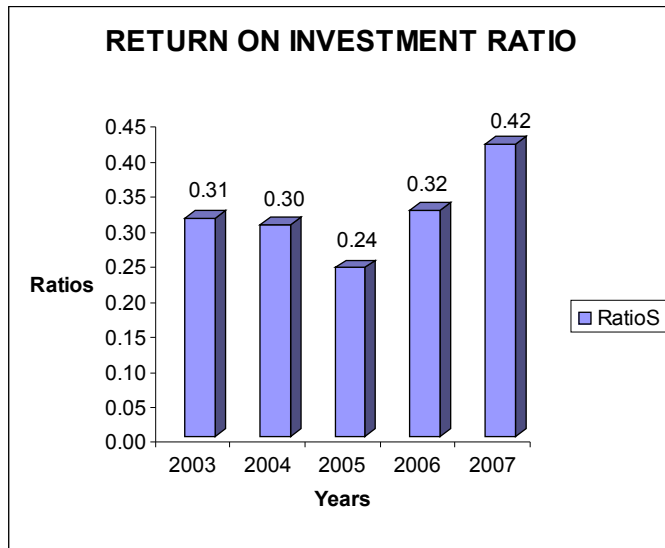
Return on Investment			
<i>Year</i>	<i>Net Profit After Tax</i>	<i>Share Holders Fund</i>	<i>Ratio</i>
2003	21,123,474	67,679,219	0.31
2004	16,125,942	53,301,834	0.3
2005	16,929,227	70,231,061	0.24
2006	18,259,580	56,473,652	0.32
2007	40,586,359	97,060,013	0.42

Interpretation

This is the ratio between net profits and shareholders funds. The ratio is generally calculated as percentage multiplying with 100.

The net profit is increased due to the increase in the income from services and the shareholders funds are increased because of reserve & surplus. So, the ratio is increased in the current year.

GRAPHICAL REPRESENTATION



Chapter – 7

FINDINGS, SUMARRY & CONCLUSION

FINDINGS OF THE STUDY

1. The current ratio has shown in a fluctuating trend as 7.41, 2.19, 4.48, 1.98, and 3.82 during 2003 of which indicates a continuous increase in both current assets and current liabilities.

2. The quick ratio is also in a fluctuating trend through out the period 2003 – 07 resulting as 7.41, 1.65, 4.35, 1.9, and 3.81. The company's present liquidity position is satisfactory.

3. The absolute liquid ratio has been decreased from 3.92 to 1.18, from 2003 – 07.

4. The proprietary ratio has shown a fluctuating trend. The proprietary ratio is increased compared with the last year. So, the long term solvency of the firm is increased.

5. The working capital increased from 0.72 to 1.13 in the year 2003 – 07.

6. The fixed assets turnover ratio is in increasing trend from the year 2003 – 07 (1.26, 1.82, 4.24, 3.69, and 6.82). It indicates that the company is efficiently utilizing the fixed assets.

7. The capital turnover ratio is increased form 2003 – 05 (0.98, 1.01, and 1.04) and decreased in 2006 to 0.98. It increased in the current year as 1.00.

8. The current assets to fixed assets ratio is increasing gradually from 2003 – 07 as 2.93, 3.74, 4.20, 6.07 and 8.17. It shows that the current assets are increased than fixed assets.

9. The net profit ratio is in fluctuation manner. It increased in the current year compared with the previous year form 0.33 to 0.42.

10. The net profit is increased greaterly in the current year. So the return on total assets ratio is increased from 0.17 to 0.31.

11. The Reserves and Surplus to Capital ratio is increased to 4.19 from 2.02. The capital is constant, but the reserves and surplus is increased in the current year.

12. The earnings per share was very high in the year 2003 i.e., 101.56. That is decreased in the following years because number of equity shares are increased and the net profit is decreased. In the current year the net profit is increased due to the increase in operating and maintenance fee. So the earnings per share is increased.

13. The operating profit ratio is in fluctuating manner as 0.99, 0.51, 0.41, 0.57 and 0.69 from 2003 – 07 respectively.

14. Price Earnings ratio is reduced when compared with the last year. It is reduced from 3.09 to 2.39, because the earnings per share is increased.

15. The return on investment is increased from 0.32 to 0.42 compared with the previous year. Both the profit and shareholders funds increase cause an increase in the ratio.

SUMMARY

- 1) After the analysis of Financial Statements, the company status is better, because the Net working capital of the company is doubled from the last year's position.
- 2) The company profits are huge in the current year; it is better to declare the dividend to shareholders.
- 3) The company is utilising the fixed assets, which majorly help to the growth of the organisation. The company should maintain that perfectly.
- 4) The company fixed deposits are raised from the inception, it gives the other income i.e., Interest on fixed deposits.

CONCLUSION

The company's overall position is at a good position. Particularly the current year's position is well due to raise in the profit level from the last year position. It is better for the organization to diversify the funds to different sectors in the present market scenario.

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APPENDIX

Balance sheet as on 31st March 2007

(Amount in Rs.)

Particulars	2006 - 07	2005 - 06
SOURCES OF FUNDS :		
1) SHAREHOLDERS' FUNDS		
(a) Capital	18,719,280	18,719,280
(b) Reserves and Surplus	78,340,733	37,754,372
	97,060,013	56,473,652
2) DEFERRED TAX LIABILITY	2,478,428	2,794,350
TOTAL	99,538,441	59,268,002
APPLICATION OF FUNDS :		
1) FIXED ASSETS		
(a) Gross Block	31,057,596	29,767,979
(b) Less: Depreciation	16,894,562	14,710,986
(c) Net Block	14,163,034	15,056,993
2) CURRENT ASSETS, LOANS AND ADVANCES		
(a) Sundry Debtors	80,712,804	37,856,420
(b) Cash and Bank Balances	34,043,520	51,690,326
(c) Other Current Assets	152,228	857,753
(d) Loans and Advances	733,516	923,709
	115,642,068	91,328,208
LESS : CURRENT LIABILITIES AND PROVISIONS		
(a) Liabilities	21,596,916	38,591,265
(b) Provisions	8,669,745	8,525,934
	30,266,661	47,117,199
NET CURRENT ASSETS	85,375,407	44,211,009
TOTAL	99,538,441	59,268,002

Profit and Loss Account for the period ended on 31st March 2007

(Amount in Rs.)

Particulars	2006 - 07	2005 - 06
I. INCOME		
Income from Services	96,654,902	55,550,649
Other Income	2,398,220	2,285,896
TOTAL	99,053,122	57,836,545
II. EXPENDITURE		
Administrative and Other Expenses	81,334,750	75,599,719
	81,334,750	75,599,719
Less: Expenditure Reimbursable under Operations and Maintenance Agreement	49,474,305	49,349,892
TOTAL	31,860,445	26,249,827
III. PROFIT BEFORE DEPRECIATION AND TAXATION	67,192,677	31,586,718
Provision for Depreciation	2,183,576	2,279,917
IV. PROFIT BEFORE TAXATION	65,009,101	29,306,801
Provision for Taxation		
- Current	24,292,000	10,680,440
- Deferred	(315,922)	(67,359)
- Fringe Benefits	446,663	434,140
V. PROFIT AFTER TAXATION	40,586,359	18,259,580
Surplus brought forward from Previous Year	26,699,257	44,951,851
VI. PROFIT AVAILABLE FOR APPROPRIATIONS	67,285,617	63,211,431
Transfer to General Reserve	-	4,495,185
Interim Dividend Rs.15 per equity Share (2005- NIL)	-	28,078,920
Provision for Dividend Distribution Tax	-	3,938,069
VII. BALANCE CARRIED TO BALANCE SHEET	67,285,617	26,699,257

Earnings Per Share - Basic & Diluted

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