CHAPTER-I
INTRODUCTION

1.1 Background of the Study:

Nepal is one of the least developed country in the world. Fortunately Nepal has ample natural gifts such as forest, minerals, scenic beauty, herbs and water resources. Optimum utilization of natural resource is only the best way to accelerate the place of development of Nepal. There is a great potentialities of economic growth of Nepal through the maximum development of hydroelectricity projects.

Industrial development is essential for the economic development of any nation, which is not possible without the easy and smooth supply of electricity. Land locked country Nepal having geographical remoteness; there is no other alternative source of energy besides hydro electricity.

Water resource is one of the most important resources available in Nepal out of limited resources available. It should be developed as far as quickly and reliably through which living standard of people can be uplifted and can be made developed and prosperous. Irrigation, agriculture, industry, business, health, education can be improved and developed by the development of water resource. Use of water resource is the never ending resource but it is wasted if not utilized so, it is rational to develop properly so far as possible.

The effort of government and private sector is not sufficient for the development of water resource so, additional effort is required. Additional mobilization of national and international government and private sectors means and resources and technology is required. During such a joint effort, hindrances may be faced by them, which should be settled down orderly. In such effort we most not create any room for narrow mindedness,

mutual misunderstanding and should move ahead with rational economic views and free competition.

In Nepalese water resource development sector government, large-small private sector, and international sector all can be accommodated. Small by national private sectors medium by government and large projects by international sector can be implemented.

There are Ministry of water resource Hydropower commission, Nepal Electricity Authority and many companies in private sector in order to develop hydro electricity in Nepal. Our objective is faster development of hydroelectricity with minimum cost, supply of internal demand of electricity, rural electrification and export of additional electricity more than demand. The whole thoughts and efforts should be concentrated to achieve these goals.

1.1.1 Public enterprises scenario:

Public enterprises help in the rapid economic growth and industrialization in the countries and establishes the necessary infrastructure for economic development, earn returns on investment and thus generate resources for development, promotes and redistribute the income and wealth and create employment opportunity to balance regional development.

Public enterprises were established in order to develop infrastructure to product the required goods in the country and help in controlling the price situation to create opportunities for employment to increase government revenues and to contribute significantly in the nation development as well as to assist in the country's economic advancement.

According to Laxmi Narayan, "PES are autonomous bodies which are owned and managed by government & which provide goods or service for a price. The ownership with the government should be 51% or more to make an entity PE"

The term 'Public Enterprises' has been defined differently by different agencies and government to suit their own respective situation. UN has defined PE as "Those organization namely governmental enterprise & public corporations. Which are entirely

or mainly owned and or controlled by the public authorities consisting of establishment. Which by virtue of their kind of activities, technology and mode of operation are classified as industries."

"Public enterprise plays a very important role in most of developing countries. The role of public enterprise differs from country to country, basically due to political philosophy of existing governments. Public enterprise comes into existence either by the way of deliberate policy of the government to bring certain activities under new institution or by nationalizing them from private sector. When we see the history of PES we find that most of them were created by the government themselves to manage certain key sectors of the economy."

1.1.2 Public Enterprises in Nepal:

Generally public enterprises are established for economic, social and political objectives involving social justice and social welfare, accelerating the rate of economic growth, mobilization of founds for future plans, making available of essential goods and services cheaply and adequately. The government has to conduct the business of basic needs as well as public welfare. In other hand, developing the infrastructure requires huge amount of investment, in that conditions private sector may not be able to manage so huge capital for operation of infrastructure. In such condition government has to adopt that type of activities.

The process of economic planning was started in USSR first, when there was economic depression in 1929. The needs of public enterprises were realized in Nepal after the political changes in 1956. The concept of public enterprises in Nepal for the first time emerged in 1932 when the then Nepal government gave the charter to set up the National Trading Corporation in Katmandu in order to promote government trading in Nepal.

"Nepal bank limited 1994 a commercial bank was the 1st PE to have separate legal status in Nepal". During the 2nd world war some other PEs were established, however they could not make substantial progress. Nepal started its planed economic development in

1956 with the launching of 1st five-year plan. Since than the number of PEs has increased substantially in various fields of national economic

There were 64 PEs before the privatization program of Nepal Government & now there are 43 PEs. The PEs is dominant in the production of sugar, cement, cigarette agriculture tools, petroleum products & all public utilities. PEs of Nepal can be categorised as:

1. Statutory Corporation.
2. Government Companies
3. Departmental undertakings

Among them 43 existing PEs, there are public utility PEs namely.

- Nepal Telecommunication Corporation
- Nepal Drinking Water Corporation.
- Nepal Electricity Authority.

1.1.3 An overview of Nepal Electricity Authority (NEA)

There are much potentialities to bring economic development of nation by utilizing the unlimited nature gifted water resources for the development of hydro electricity. Development of hydroelectricity should be taken as the concrete foundation for the overall development nation. In the present context hydroelectricity itself is an industry. Besides the capital formation it also supports as foundation for the development of other sector of economy. Observing the development efforts of Nepal so far, no possibilities even other sectors seems without the development of hydroelectricity.

Nepal Electricity Authority (NEA) is the largest government enterprise in Nepal with the country's highest capital investment assets and human resources. It has undertaken the overall responsibilities for planning, construction, operation and generation of electricity in the nation. Nepal Electricity Authority was established to provide electricity and power generated services in the year 1985(2042 B.S.) under the Nepal electricity Act 1984 (2041 B.S.) by the amalgamation of the existing HMG Department of electricity, Nepal electricity corporation and related development boards to make effective and independent institution, to generate economy production, transmission and distribution of electricity

and to manage properly the electricity supply to the nation. To remedy the inherent weakness associated with these fragmented electricity organization with overlapping and duplication works merger of these individual organization became necessary to achieve efficiency and reliable services.

The history of hydro electricity in Nepal begins with the Pharping hydro power station with the installed capacity 500 KW in 1968 B.S. (1911 A.D.) in Kathmandu during the period of prime Minister Chandra Samsher Jang Bahadur Rana. The second hydropower project of 900 KW capacity (now 640 KW) was installed at Sundarijal in 1991 B.S. The Third Morang Hydro electricity Supply Company of 977 KW capacity was established at Letang in 1996 B.S. for Biratnagar.

NEA is a service oriented utility undertaking by the government of Nepal. On the establishment year NEA was stated with approximately 2,00,000 customers, 103 Mega Watt installed capacity and Rs. 380000000 income. Presently about 10,000 staffs, 15,24,610 customers 611 MW installed capacity and nearly 14/15 billion rupees yearly income. In the same way nearly 42% people have access to electricity facility and Peak. Demand 640 MW. Every year 50-60 MW electricity demand is increasing. In Nepal every year the highest demand rate of electricity is about 8.5%. Total property of NEA is RS. 62,420,000,000.

By the study of Hariman Shrestha it is identified that there is 83,000 MW. Hydro electricity potentiality. In Nepal nearly 43,000 MW hydro electricity project is economically potential according to the study.

The objectives of Nepal Electricity Authority are as follows.

a. To establish single organization that would work in all sector of electricity planning, survey, production, operation, maintenance and distribution of electricity.
b. To utilize and develop the huge amount of water resources of Nepal in more coordinated way.
c. To provide equal and extensive skill development opportunities for all employees working in the fields of electricity.

d. To overcome the duplication of works being practiced formerly by the existence of several electricity agencies.

The existing power plants of NEA is presented in the table below:

Major Hydropower Projects

1	Kali Gandaki "A"	144,000 KW
2	Marsyandi	69,000 KW
3	Kulekhani No. 1	60,000 KW
4	Kulekhani No. 2	32,000 KW
5	Trisuli	24,000 KW
6	Gandak	15,000 KW
7	Modikhola	14,800 KW
8	Devighat	14,100 KW
9	Sunkoshi	10,050 KW
10	Puwakhola	6,200 KW

Small Hydropower Stations

11	Chatara	3,200 KW
12	Panauti	2,400 KW
13	Tatopani / Myagdi (i) & (ii)	2,000 KW
14	Seti (Pokhara)	1,000 KW
15	Phewa (Pokhara)	1,088 KW
16	Tinau (Butwal)	1,024 KW
17	Sundarijal	640 KW
18	Pharping	500 KW
19	Jomsom	240 KW
20	Baglung	200 KW
Total		**401,942 KW**

Small Hydropower Stations

1	Dhankuta	240 KW
2	Jhupra (Surkhet)	345 KW
3	Doti	200 KW
4	Phidim	240 KW
5	Gorkha (Ilam)	64 KW
6	Jumla	200 KW
7	Dhading	32 KW
8	Syangja	80 KW
9	Helambu	50 KW
10	Derchula (i) & (ii)	300 KW
11	Chame	45 KW
12	Taplejung	125 KW
13	Manang	80 KW
14	Chaurjahari (Rukum)	150 KW
15	Syrapudaha (Rukum)	200 KW
16	Khandbari)	250 KW
17	Terhathum	100 KW
18	Bhojpur	250 KW
19	Ramechhap	150 KW
20	Bajura	200 KW
21	Bajhang	200 KW
22	Arughat Gorkha	150 KW
23	Okaldhunga	125 KW
24	Rupalgad (Dadeldhura)	100 KW
25	Surnaiayagad (Baitadi)	200 KW
26	Achham	400 KW
27	Dolpa	200 KW
28	Kalikot	500 KW
29	Heldung (Humla)	500 KW
Total		**5,676 KW**

Diesel Power Stations (Existing)

1	Duhabi Multifuel	39,000 KW
2	Hetauda	12,750 KW
3	Marsyangdi	2,250 KW
Total		**54,000 KW**

Solar Power Stations

1	Simikot	50 KW
2	Gangadhi	50 KW
Total		**100 KW**

1.2 Statement of the Problem

Nepal Electricity authority is the largest public enterprise in Nepal. It has occupied all parts mountain, hill and Terai with nearly 10,000 manpower. The responsibility of development, expansion, year-19, Vol. 1, 2065 Bhadra, Half yearly Magazine. 'Vidyut' Nepal Electricity Authority extension and distribution of hydro electricity is on the shoulder of NEA, Which is considered as the infrastructure for development.

Past couple of years onward there is low electricity generation in comparison to demand. Besides the generation of hydro electricity, operation of thermal Diesel plant and including the import of electricity (50 MW) from India, there is disbalance between demand and supply. The average yearly demand of electricity is increasing by 8.5%. In this regards each year 50-60 MW new hydro electricity project should be installed to fulfill the demand. Due to various reasons in the dry reason per week up to 40 hrs load shedding, which is the compulsive situation of electricity authority. Next couples of year, this situation remains as usual.

Finance is one of the most important functional areas of NEA. It is concerned with generation, transmission, distribution and other functions of NEA. International lending agencies, government financing, self financing and private sector financing are the major sources of finance mobilized by NEA. NEA is the largest government enterprise in Nepal. In this current pace of privatization government still holds it under public sector.

The government plan clearly states that it will gradually privatize PES except those where the government undertaking is inevitable. However, the introduction of private sector will not be prevented from participation in these areas. NEA must be able to generate fair rate of return and surplus on its own. For this purpose it becomes imperative to be financially sound and independent at least in terms of paying interest on debts operation and maintenance expenditures administratative expenses and generating desirable rate of return on capital employed.

Industrialization without electricity is difficult. In this context NEA has great role to play than any other PES as most of the industries depend on power supply. In this sense NEA has no difficulty in selling its product and service as the demand of power supply is always growing. NEA gets the expansion, as it does have no market competition. Despite these facts the performance of NEA is not satisfactory. In this context, the study of NEA primarily focuses on the financial obligation-generating rate of return on capital investment and internal revenue generation. This study confines to the problem of financial operation and management and capacity building of NEA. The present study will make a modest attempt to have an insight over the problem of financial management of NEA as well as to recommend some concrete suggestions for the improvement in overall financial performance though financial analysis. The study tries to seek answer to the following questions:

a. What is the financial condition of NEA?
b. What are the major steps taken for capacity building by NEA?
c. How efficient has NEA been able to use its assets?

1.3 Objectives of the Study

The basic objective of the study is to analyze the financial aspects of NEA along with the capacity expansion. The specific objectives of the study are as follows.

a. To analyze the financial performance of NEA with respect to its liquidity, activity, profitability and leverage.
b. To find out the past and present challenges undergone by NEA

c. To find out the past, present and future attempts for capacity building by NEA.
d. To identify major weakness and strengths of NEA
e. To provide suggestions and recommendation based on the findings for the improvement of financial performance.

1.4 Significance of the Study

Among the different natural recourses available in Nepal water recourse that possess nearly 2.27% of the worlds water recourses. The total hydropower potentiality of Nepal is 83.000 MW out of which nearly 611 MW is exploited which is a less than 1% of the total capacity. One of the major reasons of backwardness of Nepalese economy is the poor supply of power shortage of power creates problems in the development of agriculture industry trade and other sector of economy.

Nepal electricity Authority NEA is one of the largest enterprises in Nepal. It is a capital-intensive institution and cannot implement its own investment plan with its internal resources. Its financial position has a significant impact upon the electricity generation in Nepal. The NEA is a monopolistic institution on and it had enjoyed the monopoly power all over the country. As a firm it should generate profits however being a public utility concern it should be service oriented as well, Besides NEA should earn some surplus for the sake of repairing and maintenance. There should be trade off between cost and service.

The world is critically suffering of oil crisis and Nepal cannot remain untouched. In this context hydro electricity generation is only the best remedy for the shortage of energy. To meet the increasing demand of power and energy. NEA must accelerate its capacity building through effective management

This study is believed to be an important effort to identity the financial position of NEA and provide some appropriate measures to enhance capacity building of NEA.

1.5 Limitations of the Study

NEA is a large scale public enterprises so the area of the study is concentrated only omits financial aspects and capacity building. The study will have some constrains. The study includes only.

a. The study will cover a period of 10 years from the fiscal year 1999 to 2008.
b. The study will be based on secondarily data therefore; the accuracy of results and conclusions highly depends upon the reliability of these data.
c. The evaluation is made through the analysis of financial statement published and presented by NEA.
d. Since the study is mainly concerned with NEA, the conclusion drawn from the study finding and suggestions may not applicable to any other private or public enterprises.
e. This study may not be precise as it is to fulfill the partial requirement of the MBS program.
f. Because of resource and time constraint this study is not comprehensive neither extensive.

1.6 Organization of the Study

The study has been divided into 5 chapters. The major chapters of the study are as follows:

a. The first chapter is the introduction. It deals with background, Introduction, Statement of the problem, Objective of the study, and Limitation of the study and significance of the study.

b. The second chapter deals with review of literature. It includes a discussion on the conceptual framework and major studies relating to financial performance and capacity expansion.

c. The third chapter is research methodology. It includes research design population and sample, sources of data, data collection techniques, data analysis and limitation of the methodology.

d. The fourth chapter is data analysis and presentation. The major findings of the study with the help of statistical tools and financial tools are described.

e. The fifth chapter deals with summary, conclusion and recommendation, at least bibliography and appendices are given.

CHAPTER-II
REVIEW OF LITERATURE

2.1 Introduction

The review of literature is a fundamental part of the planning of the study. The main purpose of literature review is to find out what have to be done in the field of the research study being understood. Every research requires a clear- cut idea on the problem of study and its solution, which emerges from the review of literature. "Scientific research must be based on past knowledge. The previous studies cannot be ignored because they provide the foundation of the present study."(Shrestha, 1982)

This chapter reviews the available literature relating to Nepal Electricity Authority and view expressed by various scholars and researchers on the financial performance of public enterprises. So far as analysis of financial performance in the context of Nepalese enterprises is concerned, some studies have been understood by the management experts and students describing the financial performance of public enterprises.

Power plays significant role in the sustainable development of economy that drives nation towards the path of modernization, Nepal being on of the rich countries in hydropower sector, many important literatures are available in this field. Some of the notable literatures relevant to the study are reviewed in this study to identify the relevance of the present study.

2.1.1 Capacity Expansion

NEA is the leading organization in generating and supplying of electricity in Nepal. It carries very heavy responsibility in the field of electricity. The term capacity expansion is discussed in terms of electricity generation, demand forecast, demand and supply situation, power transmission, power distribution, power exchange and institutional strengthening etc. The efforts made for overall uplifting of the performance of NEA will be discussed and presented the facts.

2.2 Review of Related Books.

Underlying principles and international practices are found in different books. Entire book is the collection of principles and practices in different circumstances and contexts. The balance sheet and income statement of a business shows the financial position at a given point of time and summary of revenue and expenses during the accounting period. Ratio analysis is a technique of analysis and interpretation of financial statement. To evaluate the performances of an organization by creating the ratios from the figures of different accounts consisting in balance sheet and income statement is known as Ratio Analysis.

The ratio analysis is very helpful in financial forecasting and planning. The ratio calculation of past year works as a guide for future. Fro the information provided by ratio analysis with the help of financial statement is very useful for making decision on any financial activity. (Dangol , R.M. 1995)

If management is to maximize the firm's value, it must take advantage of the firms strength and correct its weakness. Financial statement analysis information with that of other firms in the same industry. This helps management identify deficiencies and taken action to improve performance. (Weston, J. Fred and Brigham, 1973)

As per Weston and Copeland, financial structure refers to the way the firms asset are financed by the entire right hand side of the balance sheet that includes short-term debt as shareholders equity. Capital structure or the capitalization of the fir is the permanent financing.

Every firm must deal with the various choices available to management for funding the investment and operation of the business over the long term financing Section of business includes the operating profit, which normally is a key sources of funds available internally for a company. Asset structure of the firm directly influences the financing. The firm having long live fixed assets and having much assured demand for its output use long-term debt extensively. Firms that having much term debt extensively. Firms that

have their assets mostly in receivables and in inventory as in whole sale and retail trade rely lesson log-term debt.

According to Weston and Brigham (1973), Financial statements report both on a firm's position at a point in time and on its operation over some past period. However. the real value of financial statements lies in the fact that they can be used to help predict the firm's future. earnings and dividends. From an investor's standpoint, predicting the future is what financial statement analysis is all about, while from managements standpoint, financial statement analysis is useful both as a way to anticipate future conditions and more important, as a starting point for planning action that will influent the future course of events.(Weston, J. Fred and Brigham, 1973)

2.3 Review of Related Articles

Analytical studies of an enterprises pertaining to the financial position are essential to know their profit potentiality, operative efficiency and decision making technique. In our country as well, the financial experts and other analysts have made some research towards financial position of different corporation by using various analytical tools. Some of the available research studies relating to the financial aspects of PEs in Nepal have been reviewed.

The research on "Performance of PEs" in Nepal jointly conducted by ISS and CCC as a part of the research project entitled "Performance of PE in Asia" jointly sponsored by international Development Research center Ottawa Canada and HMG/N made in mid 1975 in the first Comprehensive Research work in public enterprises in Nepal. In the study it was found that the main criteria for providing financial assistance by HMG/N was not based on normal corporate port folio structure and needs, but on crisis policy of adequate working capital had been instrumental in bringing about a circular consolation of property in many PEs. Absence of sufficient equity cushions has led to the poor performance of many PEs.

The management consulting company conducted a study on the performance of PEs of Nepal. In the study it was concluded that the assets management in general, and current

assets management in particular were the weakest points in Nepalese PEs. (Management consultant company ”Economy and management study of PEs in Nepal”). The report also pointed out that because of the lack of operational objectives, application of the long run planning, use of modern management tools, capital budgeting and efforts towards cost control had not been made so far.

The Auditors report, presented by HMG Auditor General Office, mentioned that the irregularity in the payment of advances is increasing in case of WSSC. There is no effective financial control within the corporation and there is no effective provision and control in respect to water tariff and new top connection The report pointed out that there seems violation of rules and regulations in the acquisition of fixed assets and other goods. More over the report pointed out that there is no proper utilization of machines and other fixed asset and purchase of goods is made only for the purpose of purchase.(“Annual Report of auditors journal of Nepal kingdom”2044)

Similarly the auditors report concerning Nepal Electricity corporation mentioned. That the economic condition of corporation had been seen unfavorable in view of teh economic increase in corporation's liability due to merging of Electricity corporation in to Electricity Authority and not maintaining the provisions that had to be maintained regularly past years. There was no detail information of fixed assets and due to the lack of control.

"Annual Report of auditors Journal of Nepal Kingdom" HMG/N Auditor Journal Office, Babar Mahal . 2044 in inventory and purchase; that real position of corporation could not be identified. The report also pointed out that there was more amounts locked in debtors as the corporation was not successful in recovering electricity tariff which had an adverse effect in the corporations financial position. and this also increased the risk for creation of higher doubtful debt.(Ibid P.P.112-116)

In the analysis of capital structure in selected PEs. Dr Manohar Krishna Shrestha found that NEA and WSSB are not escaping form public criticism for not providing satisfactory services. The capitalization rate of selected PEs was less than satisfactory and only a few

recorded positive EBT.(Shrestha Manohar Krishna) .The study also pointed out that there was no proper consistency maintained between EBT and the overall capitalization rate.

According to Mr. Surya Nath Bastola in "Water Resources Development of the highly Mighty Himalayan Rivers", geographical and geological conditions of the country have given rise to such a river system in country. It surveys that some of the cheapest hydropower stations in the world con be developed in the country. Revealed by the up to date study 15 million KW of hydropower potentiality is much great compared t our consumption, it can be inexhaustible For our economic upliftment we must search for power market external inputs for industry, traction, rural electrification etc. (Bastola, Surya Nath 1994)

In "Nepal Hydro Power Strategy and Opinions", the main points are that although the counter is well endowed with great bio-mass and hydropower resources, recently the place of industrialization has been severely constrained by the lack of energy and power. Unless the power constraints are moved, much industrial growth cannot be achieved, even

Surya Nath Bastolo. "Water Resources in Development on Mighty Himalayan River". Lilita Printers P. Ltd. 1794 agricultural growth likely to be constrained due to the lack o energy for lift, irrigation and processing of agricultural commodities.(U.S. Agency for international development 1992)

In "Energy Sector Perspectives "Dr. Bhekh B Thapa and Bharat B Pradhan says that hydro power is Nepal's major resource endowment, numerous attractive run-off river and multipurpose hydro schemes have been identified. but remain undeveloped, small and micro hydro-potential remains virtually unused in the hill and mountain areas and despite Nepal's small sized. only about 10.5Y of the population have access to electricity supply where as about 40% of domestic connections are concentrated in the Kathmandu valley.(Dr. Thapa, Bhek Bahadur and Pradhan, Bharat Bahadur 1995)

The book of Mr. Arjun P. Shrestha on "Hydro power in Nepal Issues and Concept of Development" has expressed that the major achievements in the economic development

of Nepal could be realized through proper harvesting of the vast water resources. But a nearly 100% dependency on overseas professionals and a failure to gradually our own manpower prevents realization of this goal. (Shrestha, Arjun Prasad 1991)

The opportunities in hydropower development do not cannot nearly approving new projects but also commitment to maintaining and optimizing the efficiency of existing hydropower plants. Such opportunities means institutional development but this has been grossly overlooked for obvious reasons. An alternatives strategy for the hydropower development in Nepal would be to open the door for privatization, where there would be a chance for development of hydropower in Nepal has always been dictated by many constraints and conditions projects are selected by planning procedures which in deliberately designed to produce a "no option" situation in decision making.

R.J. Hugus has presented on important report titled "Towards A Power Sector strategy "that the existing power in Nepal is small, fragment and unable to meet the existing demand of electricity. (Hugs, R.J) It also pointed out that the lack of an abundant power supply aggravates the energy problems that are characterized by a high usage of fuel wood and disappearance of forest cover and by a growing dependency on imported hydrocarbons which is exerting pressures in the country’s balance of payment situation. Development of hydroelectricity resources could mitigate the energy problems, contribute to industrial expansion and increase export by direct sales of energy intensive industries while there is obvious need to develop hydroelectric resources there is a number of constraints. The main constraints are high capital investment required relative to resources available other constraints are lack of information for evaluation of all enactive courses which could be followed in hydropower development.

2.4 Review of Related Thesis

The thesis submitted to institute of business administration, commerce and public administration. T.U by Om Krishna Shrestha on "A financial performance evaluation study of Nepal Electricity Corporation" in 1979 (with special reference to finance aspect) The basic objectives of this study were to evaluate the financial performance of NEA to suggest measures for the improvement of the performance of NEA to assess the financial

position of NEA. The study covered seven years period i.e. from the FY 1970-71 to 1976-77. (Sherstha, Om Krishna 1979)

In this study he found that NEA has highly fluctuating funds were mainly collected through share capital loons and depreciation funds were mainly used n expanding fixed assets and the contribution of NEC to national economy in the form of value added was increasing He concluded that the net working capital position was not satisfactory. Operation ratio was unsatisfactory due to high operating expenses the position of funds collection was in heavily fluctuant. The trend was satisfactory mainly from utilization point of views. He also pointed out that the contribution to the national economy in the form of value added was noticeable, pricing structure had noticeable impact on the profitability situation, impact of power generation and revenue generation on profitability was poor and not control measure was in operation at NEC.

Analytical studies of an enterprises pertaining to the financial position are essential to know their profit potentiality operating efficiency and decision making technique.(Shrestha, Manohar Krishna 1980) In our country the financial experts and other analysis have made some research towards financial position of different corporations by using various analytical tools.

The dissertation submitted by Mr. Sudeep Bahadur Shrestha (1996) on the topic "Financing Power Development in Nepal- A case study of NEA" points out that the power is a capital intensive sector for country like Nepal but there was no clear-cut policy for its development and its financing prior to the era of planned development. The trend of financing in power development shows that the Nepalese government only covers out 15 to 25 percent of investment where as 75 to 85 percent of investment is covered by foreign aid. The share of international loan is greater than the grant The study also says that the main issues of financing in power development in Nepal are the shortage of capital dependency on foreign aid constraints in exporting power risk on investment etc Frequent changes in the government policies and inadequate legal provision geographical complexity lack of trained manpower and modern technology are other constraints. According to the study observing the power deficiency problem it can be said that tree is

market within the country But while analyzing the country's market with respect to the economically feasible power potentiality and with the large scale projects the scarcity of the scarcity of the sizable market is in front.

"A study in the comparative financial analysis of water supply and sewerage corporation and Nepal Electricity corporation "was conducted by Purna Prashad Shrestha in 1998 (Shrestha,Purna Prasad 1999) with the objective of individual and comparative financial analysis of water supply and sewerage corporation (WSSC) and Nepal Electricity Authority to identify the financial weakness and strength of these public enterprise . It was revealed by the study that the liquidity position of both the enterprises was deteriorating and the liquidity of current assets was poor due to the excessive inventory holdings. The liquidity position of NEA was worse than that of WSSC The capita structures of both companies were low geared and NEA enjoyed more favorable position to secure debts than WSSC. The turnover ratio of both enterprises were extremely low the case in NEA was little better than WSSC Most of the funds were found spent on the acquisition of fixed assets in case of both enterprises. However NEA spent more funds for this purpose on an average.

A study conducted by Bharat Bhusal with objective of calculating, analyzing and interpreting the capacity expansion and financial performance of Lumbini Sugar Mills. The study covered a period of 10 years from 1989/099 to 1999/00. The study revealed that the liquidity position fluctuates widely and seems unsatisfactory. Similarly the leverage position of the mill is favorable and derisible. Interest coverage ratio indicates very pitiable. Interest coverage ratio indicates very pitiable condition of the mill, however activity position which deals with efficiency of the management in utilizing the assets seem poor. Regarding the profitability position researcher found gross profit margin of the LSML poor. Researcher can conclude that the management couldn't manage its sales relative to its cost of goods sold. Return on capital employed also found negative so the available funds from different sources could not manage skillfully. With reference to the correlation-co-efficient researcher found positive relation between sales expenses and crushing of sugarcane. Crushing of the mill. (Bhusal, Bharat, 2004)

Mr Madan Kandel's research thesis (2005) on "Financial performance and employees opinion on the performance of NEA" conducted in 2004 had the following findings and recommendations.

Findings of Mr Kandel's research:

- The financial performance of NEA according to the analysis is seem to be more deteriorating regarding to working capital analysis. The basic problem can be found as following:

The current assets are not been used in the profitable manner; the excess of the current assets utilization has increased the opportunity loss. Long terms as well as short-term debt utilization are also seen more irrational in the sense that their turnover ratio i not satisfactory. Capita employed according to profitability is not seemed to be reasonable as there is negative relationship between these variables. NEA is not utilizing the total assets in the productive loss has been incurred in the past four to five years and it has affected the profitability of NEA. The expenses incurred in NEA is also shooting boom, therefore it is not only influencing the profitability of NEA but also influencing to different turnover ratios.

The Recommendation of Mr. Kandel's research are:

Improvement of the liquidity Position: It is important for these corporations to behave like an entrepreneur to make the best use of liquid funds. It has to estimate how much funds is needed for immediate use and all the unused funds should be invested in marketable securities to generate some income. It is observed that there is in consistency in between current assets and current liabilities of the company. Hence the company should adopt efficient working capital policy to make the stability in liquidity position and optimum level of current assets. Management of operating as well as non-operating expenses: To increase the net profit of NEA, operating as well as non-operating expenses should be controlled. It is incurring some unnecessary and wasteful expenses. There is possibility to bring down those unproductive. expenses if the management and staffs of NEA are to be more cheerful in cost factor. Development of efficient system of revenue

collection: NEA has a large number of customers ranging from domestic, industrial to government and public undervaluing. While serving to such large customer's NEA requires an efficient system of revenue collections so that revenues do not remain ties up in bills receivable. Efficient utilization of fixed assets: NEA should not invest in any plant or assets without making proper cost benefit and target analysis. When investment is made, effort should be given to the optimum utilization of these assets within the fixed target so that it does not cause any constraint on the profit earning capacity of the assets.

The capacity should be fully utilized: In NEA the installed capacity ha not been fully utilized. If the installed capacity is utilized the operating expenses will down. The financial position of the organization should be evaluated timely. Evaluation helps the corporation to know the financial strengths and weal nesses. NEA should plan to generate it's required fund mainly by operating activity. It should reduce the volume of power purchase and resort to expansion utilization of its own capacity.

A study was conducted by Miss Aliza Amatya (2005) on "An evaluation of financial performance of NEA" had the following findings and recommendations.

Findings of Miss Aliza’s research:

There is no effective utilization of asset in NEA. NEA has been facing the problem of outstanding debt collection. Though the problem is in control over some years it has been highly increased in last year. The account receivable of NEA is recorded high. The capacity of assets in the generation of revenue is not satisfactory and the revenue earned is very low in comparison to the investment made in the assets. Increasing cost in each fiscal year is another important issue of NEA. There is no effective cost control mechanism. Electricity leakage theft and wastage have been the major seasons behind reducing the profit earning capacity of NEA similarly high maintenance. expenditures have also been an importance factor in reducing the profitability of NEA. The project does not seem to have been carried with proper feasibility analysis

The Recommendations of Miss Aliza's research are:

The company should adopt efficient working capital policy to make teh stability in liquidity position. NEA requires an efficient system of revenue collection so that revenues do not remain tied up in the bills receivables. Organization must invest inhuman resources development to prepare qualified and energetic personnel. NEA staff should be oriented towards discipline of working efficiently by demanding explanation for delays in service immediate action should be taken for delays causing in convenience to the consumers. NEA should pay attention to improve the utilization factor of its assets. Assets with higher capacity utilization factor should be selected to improve the earning capacity. NEA should apply effective cost and loss control measures. Government should provide more autonomy to the management of NEA and make them more responsible and accountable according to their work. NEA should be more efficient in mobilizing its resources in the year to come.

Rajan Sharma Conducted a research with the objective of evaluating the trend in the growth of loans or investments and total deposits of Paschimanchal Finance Company Ltd. and Butwal Finance Company Ltd. The study covered a period of 7 years 2057 B.S. to 2063 B.S. Research has found that trend of loans and investment as well as total deposits of both PFCL and BFCL are found decreasing during the study period. But its decreasing rapidly of PFCL as compared to BFCL. The projected ratios of loans and investment to total deposits of PFCL and BFLC is 31st Ashad 2073 will be 88.97% and 87.83% respectively, which are the lowest under the period of review. The ratios of loans and investment to total deposits of BFCL are lower in initial years but these are almost equal in latter years. It can be concluded from the analysis that PFCL is marginally more active in creating investment (loans) opportunities in comparison to BFCL. The average ratio of return on shareholder's fund of PFCL is significantly greater than that of BFCL and the variability of the ratios of PFCL is more uniform than that of BFCL. This shows that PFCL is more efficient in mobilizing the resources of owners in comparison to BFCL. (Sharma, Rajan, 2007)

Ashok Baral conducted a research with the objective of comparative analysis of liquidity and cash reserves ratios of Himalayan Bank Ltd. and Bank of Kathmandu Ltd. The study covered a period of five years from 2058/59 to 2062/63 B.S. The study revealed that the both banks have highest current ratios in fiscal year 2062/63. Ratios of HBL and BOKL are 1.05 and 1.07 respectively whereas the overall current ratio of HBL is higher than BOKL. The cash and bank balance to total deposit ratio of BOKL is highest throughout the studied period. The average investment on government securities to current assets ratio of HBL and BOKL are 16.102% and 20.508% respectively. Market value per share to book value per share ratio of HBL is higher in each year and its average is 3.997 times whereas the same is 1.91 times in case of BOKL. Various variables i.e. loan and advances deposit, DPS, Market value per share and book value per share of both banks are in increasing trend whereas P/E ratio and EPS in case of BOKL and HBL respectively are decreasing. As capital structures of both banks are highly levered both banks are recommended to maintain and improve mix of debt and owner's equity by increasing equity base. Profitability position of HBL is comparatively better than the same of BOKL. So, BOKL is recommended to utilize its resources more efficiently for generating more profit margins. If resources held idle, bank faces high cost and causes the low profit margins. (Baral, Ashok, 2008)

Ajay Kumar Shrestha Conducted a research with the objective of evaluating financial performance of Paschimanchal Grameen Bikash Bank Ltd. The study covered the period of 7 years from 2001 to 2007 A.D. During the course of study, it was found that regression analysis of the disbursement and repayment of the bank have shown positive relationship, which means when the investment increases the repayment also increases. In analysis of trend value, it is found that the rural financing of the bank is in good condition because its growth rate of repayment is greater than the growth rate of disbursement. It is found that the repayment rate over disbursement of loan is positive and average is 91% which is good enough for bank. It clears that rural poor people are positive enough toward the bank's activities. The PGBBL has been managing its fund by the leverage of borrowing for the longtime. In this way, it has now become overburdened with debt. The bank must be attention towards that matter and try to enhance its internal resources. (Shrestha, Ajay Kumar, 2008)

CHAPTER-III
RESEARCH METHODOLOGY

3.1. Introduction:

"Research may be defined as the objective and systematic method of finding solution to a problem i.e. systematic collection, recording and lying, interpretation and reporting of information about various facts of phenomenon under study"(Kothari, 1994). The main objective of this study is to find out the true financial picture of NEA. Financial analysis is the process of identifying the financial strengths and weakness of the firm by establishing proper relationship between capital and assets of the organization.

The study requires and appropriate research methodology so as to achieve it's certain goal. There are many variables in the study of NEA. This chapter looks into the research design nature and sources of data, data gathering procedure, tools of analysis. A suitable and simple research methodology of the study is followed so as to fulfill the stated objectives as well as to make it easier in visualizing the total study clearly. This chapter includes research design, sources of data, hypothesis and tools use for the analysis.

3.2. Research Design

To conduct the study both descriptive and analytical research approach has been adopted. Descriptive approach is utilized for conceptualization problem identification conclusion and suggestion of the study where as analytical approach will be followed for the presentation and analysis of data. The data have been analyzed on the basis of standard financial formulae used in the book of financial management.

3.3 Period Covered

The study covers the period of 10 years from 1999 to 2008. Data are taken from NEA's balance sheet and income statement and the analysis is basically made on the basis of these five years data.

3.4 Types and Sources of Data:

The main sources of data for the purpose of this study are the published financial statement of NEA for the period of 10 years. The study is thus mainly based on the secondary data. It constitutes mostly the annual report, which comprises Balance sheet and Profit and loss account and income statement. Information has also been supplemented from various publication of NEA. In some cases primary data were also obtained from the discussion with the officials of NEA. All other available published and unpublished materials concerning the study as well as some journal abstracts will also be used in the study. The data has been processed through editing, coding and classification of the collected data. Presented data have been analyzed using various analytical as well as descriptive financial and statistical tools. The reliability of the study and its finding depends upon the available secondary data.

3.5 Method of Analysis

In order to make an analysis of available data, following method has been employed.

a) Various books, journals, publications, and other related literatures were studied as the step to begin the study.
b) Related data from related sources are selected, group and tabulated for the purpose of the study.
c) Tabulated secondary data are analyzed by using ratio analysis.
d) With the help of analysis, conclusions were drawn and recommendations were suggested.

3.6 Tools used for Analysis

In order to analyze, various financial and statistical tools are used. The major tools employed for the analysis of this study is the ratio analysis that established the quantitative or numerical relationship of two variables of the financial statement. Ratio Analysis is the basic tools used for the study and is considered to be the powerful tools of financial tools and statistical tools have been used for the study. The financial as well as statistical tools have been studied in brief in the following pages.

3.6.1 Ratio Analysis

Ratio analysis is the widely used tools for financial analysis. Ratio analysis is a powerful tool and technique for financial analysis which helps in identifying the sound financial structure of the organization. In other words, ratio analysis helps the analyzer make quantitative judgment of the firm's financial position as well as its performance.

M.Y khan and P.K Jain have selected ratio analysis as "Ratio refers to the numerical or quantitative relationship between two items or variables. A ratio is calculated by dividing of the relationship with other." According to James C. Van Horne, "To evaluate the financial condition and performance of the firm, the financial analysis needs certain yardstick. The yardstick frequency used is a ratio or index relating to pieces of financial data to each other" Thus ratio analysis is considered to be the yardstick tools to evaluate the financial performance and condition of the firm.

Following are the ratios used for the analysis of the financial performance of NEA.

1) Liquidity ratio
2) Turnover ratio
3) Profitability ratio
4) Leverage/ Solvency ratio
5) Debt management ratio

A. Liquidity Ratio

Liquidity ratio used to judge the firms ability to meet short term obligations, short term liquidity ratio involves the relationship between current assets and current liabilities. Two ratios are mainly used to measure the liquidity position.

1. Current Ratio
2. Quick Ratio / Acid test Ratio

1. Current Ratio :

The current ratio is measure of liquidity calculated by dividing the firm's current assets by current liabilities. Current ratio is also known as working capital ratio.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current assets include cash and those assets that can be converted into cash with in a year, such as marketable securities, debtors and inventories, prepaid and advance expenses. All the obligations maturing within a year are included in current liabilities. Thus a current liabilities includes creditors, bills payable, accrued expenses, short term loan, income tax and long term debt maturing in the current year.

Higher the current ratio, greater is the profitability timely and full payment of current liability. Low ratio indicates that t he firm may not be able to pay its future bills. As a conventional rule, a current ratio of 2 to 1 is considered to be satisfactory or is considered to be a rule of thumb standard.

2. Quick Ratio:

Quick ratio is the proportion of quick assets to current liabilities, which are more accurate measure of liquidity than the current ratio. Quick assets may be defined as current assets minus inventory and it is calculated as under.

$$\text{Quick Ratio} = \frac{\text{Current assets- (Inventory + Prepaid expenses)}}{\text{Current Liabilities}}$$

Inventor takes more time to convert cash processing through receivable therefore is excluded from current assets. Higher ratio indicates that firm has excessive quick assets and indicates inefficient management. A low ratio is the indicator of difficulties in the timely payment of future bills. Thus the management must be able to maintain.

B. Turnover Ratio

Turnover ratio indicates the speed with which assets are being converted or turned over into sales. Turn over ratios involve comparison between the level of sales and investment of various assets. Funds of creditors and owners are invested in various assets to generate sales and profit. The better the management of assets, the larger the amount of sales. The activity ratios are employed to evaluate the efficiency with which firm manages and utilizes its assets. A proper balance between sales and assets generally reflects that assets are managed well. Several activity ratios can be calculated to judges the effectiveness of assets utilization. The turnover ratios on practice are as follows:

1) Fixed Assets Turnover Ratio
2) Total Assets Turnover Ratio
3) Inventory Turnover Ratio
4) Average Collection Period

1) Fixed Assets Turnover Ratio:

Fixed assets turnover ratio measures the efficiency with which the firm is utilizing its investment in its various net fixed assets. It is calculated as .

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Net Fixed Assets}}$$

Net fixed assets are defined as gross fixed assets minus depreciation. The ratio express that a rupee of investment is a net fixed asset generates the resulted sales. Generally, high fixed assets turnover ratio indicates efficient utilization of fixed assets while inefficiency in utilization is shown by low fixed assets turnover ratio.

2) Total Assets Turnover Ratio:

Total assets turn over ratio indicates the sales generated per rupee of investment in the total assets.

$$\text{Total Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

Total Assets constitute the fixed assets as well as current assets and investment of the firm. Generally, higher total assets turnover ratio shows efficiency in utilization of firm's scarce and vice-versa.

3) Inventory Turnover Ratio:

Inventory turnover ratio is defined as sales divided by inventory.

$$\text{Inventory turnover ratio} = \frac{\text{sales}}{\text{inventory}}$$

Inventory turnover ratio shows how rapidly the inventory is turning into receivable through sales. Generally high inventory turnover ratio is indication of good inventory management. Lower inventory turnover suggested as inefficient inventory management. However a relatively high Inventory turnover means low level of inventory which may result stock-out and is costly for the firm.

4) Average Collection Period:

The Average collection period tells the average number of days that receivables are outstanding, or the average time it takes to convert them into cash. It is computed in two steps.

a. Annual sales are divided by 360 (number of days) in a year to find out the average daily sales.
b. Outstanding account receivables is divided by daily credit sales to find out the number of days sales tied-up in receivables.

$$\text{Sales per day} = \frac{\text{sales}}{\text{Days in a year (360)}}$$

$$\text{Average Collection peroid} = \frac{\text{Receivable}}{\text{Sales per day}}$$

Short Average collection period shows timely payment by the debtors but it may suggest an excessive and restrictive credit policy of the firm, which may result decrease in sales volume. Long Average collection period indicates inefficiency of the firm in collection of receivable, through it may boost up the volume of sales.

C. Profitability Ratio:

Profitability Ratio measures the success of the firm in earning a net return on sales or on investment. These ratios give the decision about how effectively the firm is being managed. Profitability Ratio can be classified into following major types.

1. Net Profit Margin
2. Operating Expenses Ratio
3. Return on Total Assets

1. Net Profit Margin:

The Net Profit Margin establishes the relation between net profit and sales.

$$\text{Net Profit Margin} = \frac{\text{Net Profit}}{\text{Sales}}$$

Net Profit here is defined as firm's profit after interest and taxes. The ratio measures the firm's ability to change each rupee of sales into profit. In other words if the net profit margin is in adequate the firm will fail to achieve satisfactory returns on owner's equity.

2. Operating Expenses Ratio:

Operating expenses ratio is the yardstick of opening efficiency which can be completed by dividing operating expenses by sales.

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

Operating expenses constitute administration and selling expenses excluding interest. The ratio presents the relationship between operating expenses and sales. In general higher

operating expenses cost in term of sales. Lower operating ratio is favorable since it will be sufficient to meet interest, dividend and other expenses of the firm.

3. Return on Total Assets:

Return on Total Assets ratio is the proportion of net income after tax plus interest expenses to Total Assets.

$$\text{Return on Total Assets} = \frac{\text{Net income after tax} + \text{Interest expenses}}{\text{Total Assets}}$$

It is the rate of return earned by the firm for all its investments including the lenders fund. Higher return on total assets ratio shows higher earning of the firm in terms of its total assets. Lower ratio indicates unhealthy financial position due to level of return.

D. Leverage / Solvency Ratio:

Financial leverage or capital structure ratios are calculated to judge the long term financial position of the firm. This ratio indicates the mix of fund provided by owners and lenders. The short term creditors like bankers and suppliers of raw materials are more concerned with the firm's current debt paying ability. On the other hands, long term creditors like debenture holders, bond-holders etc are concerned with the firms should have a strong short as well as long term financial position. As a general rule, there should be an appropriate mix of debt and owners equity in financial mix of the firms' assets.

The manner in which assets are financed has a number of implications. Debt is considered to be more risky in comparison to equity. The firm has a legal obligation to pay interest to debt holder irrespective of the profits made of losses incurred by the firm. If the firm fails to pay the debt holders in time, they can take legal action against to get payments and in extreme cases can force the firm into liquidation. On the other hand employment of debt is advantageous for share holders in two ways; they can retain control of the firm with a limited stake and secondly their earning will be magnified when the firm earns a rate of return on the total capital employed. The process of

magnifying the shareholders return through the employment of the debt is called financial leverage.

The leverage ratios consists of

1. Total Debt to Total Assets Ratio
2. Debt Equity Ratio

1. Total Debt to Total Assets Ratio:

The ratio between total debt and net assets is called total debt ratio. Total debt will include short and long term borrowing from financial institutions, debenture / bonds, deferred payment arguments for buying capital equipments, and bank borrowing, public deposits and any other interest- bearing loan.

$$\text{Debt Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

2. Debt Equity Ratio:

The ratio between total debt and net worth is called debt equity ratio.

$$\text{Debt Equity Ratio} = \frac{\text{Total Debt}}{\text{Net Worth}}$$

E. Debt Management Ratio:

It is also called leverage or capital structure ratio. Debt management ratios measure the extent to which firm is using debt financing or financial and the degree of safely afforded to creditors. Liquidity ratio focuses on the ability to meet current obligation. Debt management ratio measures the solvency position of the firm. Higher proportion of debt in the capital structure indicates weak solvency position, vice versa. Debt management ratios measures the extent to which firm is using debt financing or financial leverage and degree of safely afforded to creditors. This ratio can be further classified into following ratios.

1. Time Interest Earned Ratio:

This ratio explains the ability of meeting current maturing obligations on the debt capital. The higher time interest ratio shows a great ability to pay such obligation and vice versa. Higher TIE ratio also indicates that the firm has surplus debt using capacity. This ratio is computed as under.

$$\text{Time Interest Earned Ratio} = \frac{\text{EBIT}}{\text{Annual Interest Charge}}$$

2. Long Term Debt to Total Capitalization:

It measures the weight or proportion of debt capital structure in the capital structure. Therefore, a firm can adjust its capital structure to result in a minimum weighted average cost of capital (WACC). This ratio is computed as under:

$$\text{Long Term Debt to Total Capitalization} = \frac{\text{Longterm Debt}}{\text{Total Capitalization}}$$

3.7 Regression Analysis:

Regression is the statistical tools, which present the linear relationship between two or more variables. If one or more independent variables are changes then it results the change in the value of dependent variables. Statistically, such variables can be presented in mode of linear equation. This analysis is done with multiple regression analysis to find out the existence or non existence of any relationship between dependent and independent variables.

Regression analysis provides us an opportunity to estimate the line of best fit and also studies the percentage contribution of each independent factor, which explains the total variable in dependent variable. The relationship of dependent variables and independent variables are presented by the regression equation of Y on X_1 and X_2 be $Y= a+b_1X_1 + b_2X_2$

Where a, b_1 and b_2 are regression parameters. To obtain their values, we have to solve the following normal equations.

$\sum Y = na_1 + b_1\sum X_1 + b_2\sum X_2$

$\sum X_1Y = a_1\sum X_1 + b_1\sum X_1^2 + b_2\sum X_1\sum X_2$

$\sum X_2Y = a_1\sum X_2 + b_1\sum X_1\sum X_2 + b_2\sum X_2^2$

In regression analysis total variation in dependent variable is broken down into explained variation, which is explained by explanatory variables (independent variables) and the unexplained variation, which is represented by error term. Thus, the total variation has two components so that,

Total variation = Explained variation + unexplained variation.

The general formula for calculating these variations is as follows:

Total variations $= \sum (Y-\bar{Y})^2$

$= \sum Y^2 - n(\bar{Y})^2$

Explained Variation $= \sum (\hat{Y}-\bar{Y})^2$

$= b_1[\sum X_1Y - N(\bar{Y})(\bar{X_1})] + b_2[\sum X_2Y - N(\bar{Y})(\bar{X_2})]$

Unexplained Variation $= \sum (Y-\hat{Y})^2$

$= [\sum Y^2 - N(\hat{Y})^2] - b_1[\sum X_1Y - N(Y)(X_1)] - b_2[\sum X_2Y - N(Y)(X_2)]$

Also, the unexplained variation can be obtained as,

Unexplained Variation = Total variation – Explained variation

Multiple Regression analysis or the study model:

In order to examine the financial performance and profitability the two multiple regressions have been formed.

1. **First Model:**

$Y = a + b_1X_1 + b_2X_2$

Where, Y= dependent variable or profitability

a = intercept or constant value

b_1= partial regression coefficient y on X_1 when X_2 remain as constant

X_1= capital employed

b_2= partial regression coefficient y on X_2 when X_1 remain as constant

X_2= sales

2. Second Model:

$Y= a+b_1X_1 + b_2X_2$

Where, Y= dependent variable or profitability

a = intercept or constant value

b_1= partial regression coefficient y on X_1 when X_2 remain as constant

X_1= current assets

b_2= partial regression coefficient y on X_2 when X_1 remain as constant

X_2= current liabilities

3.8 Test of hypothesis:

In testing of hypothesis assumption is made about the sample selection from population and testing whether the assumption or hypothesis is correct or incorrect. In testing the hypothesis the initial way is to set the hypothesis and present it in standard way. For this, null hypothesis (H_0) and alternative hypothesis (H_1) have been formulated and tested while applying the regression analysis.

Creation of hypothesis under regression analysis (for secondary data)

For first model:

Null hypothesis (H_0): The profitability is dependent on capital employed and sales.

Alternative hypothesis (H_1): The profitability is not dependent on capital employed and sales.

For second model:

Null hypothesis (H_0): The profitability is dependent on current assets and current liabilities.

Alternative hypothesis (H_1): The profitability is not dependent on current assets and current liabilities

3.9 Graphs:

Graphs help to show the general trend of the ratios in respect to the time period. Very common way of presenting data for the variables, which have a relationship, is in a figure or chart of graphs that works best when the data is continuous.

3.10 Methods of presentation and analysis:

Simple methods of analysis have been used, data presentation and analysis has been divided into small sub topics. Every result has been tabulated and clear interpretation on it has been given simultaneously. Tables, diagrams and graphs have been used to make report clear and easily understandable. Summary, conclusion and recommendation have been presented at the end last chapter of the report.

3.11 Uses of technology SPSS:

For statistical tools and other factor calculation SPSS program has been used.

CHAPTER-IV

PRESANTATION AND ANALYSIS OF DATA

4.1 Introduction

This chapter highlights the financial position of NEA. The tools used for the purpose of analysis have been discussed in detail in the research methodology. Some financial and statistical tools have been used to evaluate the financial position of NEA. Under the financial tool I have included ratio analysis and under the statistical tools I have included.

In the ratio analysis an attempt is made to evaluate liquidity, turn over ratio, profit position and other important ratios, which help to evaluate the financial position of NEA.

With the help of ratio analysis the financial performance of NEA has been analyzed and interpreted so that the strengths and weakness of the NEA as well as its historical performance and current financial condition are evaluated. In addition to what is the Neal's operational target for the fiscal year and what impact it will leave in the financial position of the NEA in the future can also be ascertained.

The single ratio cannot reveal the true factors, unless it is compared with some standard. It should be compared with some standard for assessment. Therefore, I have calculated the average ratio from 10 years period and used as a standard.

4.2 Liquidity Position:

Liquidity ratios are used to judge an organizations ability to meet its short term obligations. These ratios are comparison of short term obligation with the resources available and are measured by current ratio and quick ratio. The liquidity ratio reflects the short-term financial strength of a firm.

4.2.1 Current Ratio (CR)

Current ratio measures the liquidity position of the organization. The standard current ratio should be 2:1 and it is also defined by the nature of the organization. As already discussed in chapter three, the current ratio is a measure of liquidity calculated by dividing the firm's current assets by current liabilities. The position of current ratio and the values of current assets and current liabilities according to NEA's balance sheet are tabulated as below.

Table No. 4.1

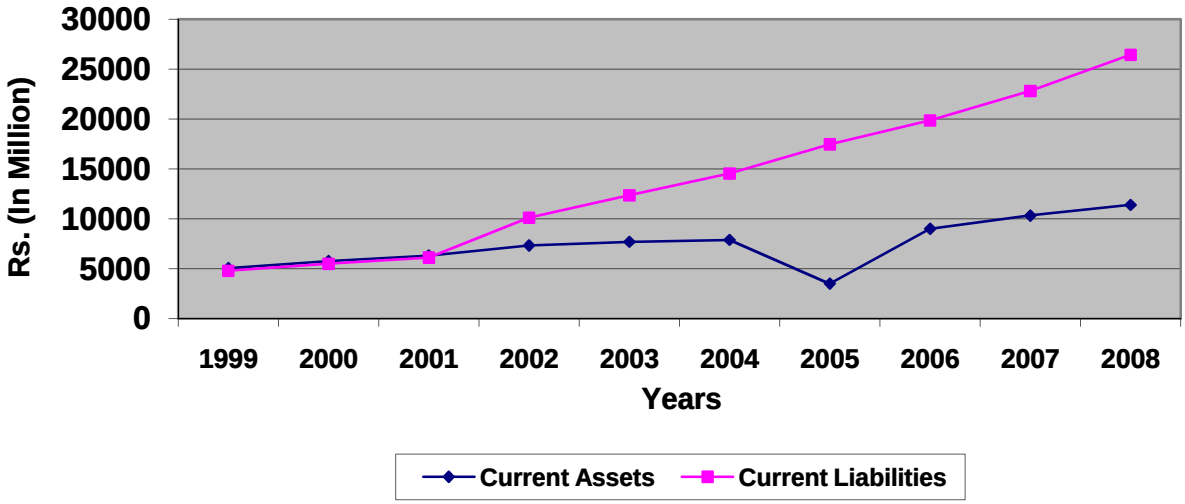
Calculation of current Ratio (Rs. in Million)

Year	Current Assets	Current Liabilities	Current Ratio
1999	5053.20	4786.50	1.06:1
2000	5761.10	5477.40	1.05:1
2001	6313.60	6113.70	1.03:1
2002	7322.00	10096.99	0.73:1
2003	7690.48	12347.00	0.62:1
2004	7883.41	14538.09	0.54:1
2005	3491.60	17466.39	0.49:1
2006	8995.30	19854.19	0.45:1
2007	10322.97	22812.13	0.45:1
2008	11391.46	26430.84	0.43:1
Average	**7922.51**	**13992.32**	**0.57:1**

Source: NEA Balance Sheet 2008

Figure No. 4.1

Graphical Presentation of Current Assets and Current Liabilities



Looking over the trend of current ratio of NEA over 10 years, it can be observed that NEA's current ratio is always less than the standard norm of 2:1. The current ratios of 10 years seem very poor and unsatisfactory.

According to the above table, the current asset of NEA increases very slowly that is in 1999 RS. 5053.20 million To RS. 11,391.46 million in the year 2008, where as current liability increases slowly in 1999, 200 and 2001 and rapidly from 2002 to 2008 that is RS, 10,096.99 to RS. 26430.84 million respectively.

According to table no. 1, the average current ratio is 0.57 times. The current ratios were recorded as 1.06, 1.05, 1.03, 0.73, 0.62, 0.54, 0.49, 0.45, 0.45 and 0.43 in the year 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007 and 2008 respectively. In all of the observed year the current ratios is below the average standard of 2:1. During these 10 years the current ratios are too low from coverage current ratio. It means that NEA was not in auditor's position to meet current obligations without delay during these periods.

With regards to its overall liquidity position there is a poor trade off between current asset and liabilities i.e. current asset were insufficient to pay off current liabilities.

The graphical trend line of current assets and current liabilities above shows that the current asset is increasing slowly and gradually from the starting year. Similarly the current liabilities increase slowly in 1999, 2000 and 2001 after which it increases rapidly.

4.2.2 Quick Ratio:

The quick ratio is more accurate guide to measure the liquidity position of any firm. Quick ratio establishes a relationship between quick or liquid assets and current liabilities. Liquidity of an asset can be measured by its virtue of immediate conversion into cash without the loss of value. Cash within current assets is considered to be most liquid. Marketable Securities and bank debt are relatively liquid. Items like prepaid expenses are considered less liquid in comparison to the current assets stated above. So the calculation of quick ratio includes only these assets that are most liquid in nature. Thus the quick asset is calculated by deducting inventory and prepaid expenses from the current assets. Hence quick ratio can be found by dividing the total of quick assets by the total of current liabilities. The quick ratio of NEA is presented in the table below.

Table No. 4.2

Calculation of Quick Ratio (Rs. in Million)

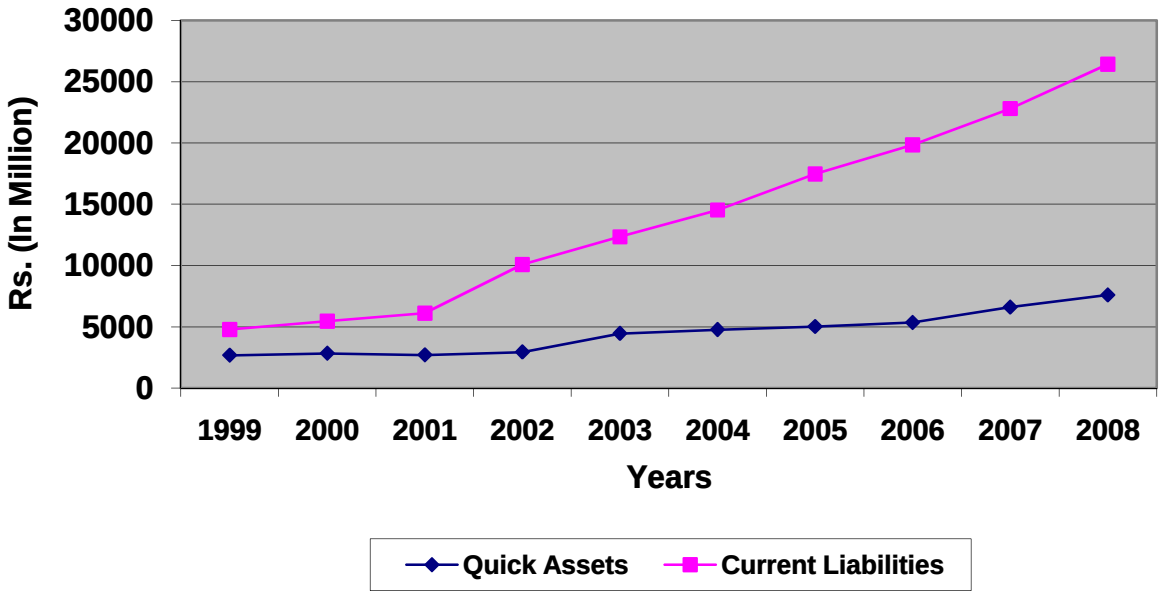
Years	Current Assets	Inventory	Prepaid Expenses	Quick Assets	Current Liabilities	Quick Ratio
1999	5053.20	740.00	1634.20	2679.00	4786.50	0.56:1
2000	5761.10	982.30	1932.20	2846.80	5477.40	0.52:1
2001	6313.60	960.90	2634.90	2717.80	6113.70	0.44:1
2002	7322.00	1058.10	3314.40	2949.50	10096.99	0.29:1
2003	7690.48	1017.22	2216.91	4456.35	12347.00	0.36:1
2004	7883.41	1048.01	2063.27	4772.13	14538.09	0.33:1
2005	8491.60	1372.70	2098.60	5020.30	17466.39	0.29:1
2006	8995.30	1354.80	2293.90	5346.60	19854.19	0.27:1
2007	10322.97	1498.45	2225.53	6598.99	22812.13	0.29:1
2008	11391.46	1518.45	2275.47	7597.54	26430.84	0.29:1
Average				**4498.50**	**13992.22**	**0.36:1**

Source: NEA Balance Sheet 2008

Quick ratio measures the liquidity position of the organization and the standard quick ratio should be 1:1, which is also defined by the nature of organization. The quick ratio shows the ability for payment of immediate current debt from current assets. According to the above table the quick ratio is very low for all of the years. The average quick ratio is very low for all of the years. The average quick ratio of NEA is 0.36, which could not yet be considered as satisfactory ratio. The NEA is not in satisfactory position in meeting its current obligations. Quick assets increased from RS. 2679.00 million to RS 2846.80 million from the year 1999 to year 2000. Similarly, it reached to RS 2717.80 million in 2001m RS 2949.50 million in 2002, RS. 4456.35 million in 2003, RS. 4772.13 million In 2004, RS 5020.30 million in 2005 RS 5346.60 million in 2006, RS. 6598.99 million In 2007, RS 7597,54 million in 2008. But the increasing tendency in current liabilities is far higher than increasing tendency in quick assets.

Figure No. 4.2

Graphical Presentation of Current Asset and Current Liabilities



Considering the trends of current assets and liabilities, it is observed that there has been auditor's uniform increase in both current assets and liabilities over the years. From the year 1999 onwards the quick ratio decreases continuously up to 2008, and it is below 1. It is because of the impact of fluctuating cash and bank balance, heavy power purchase and

increase in operational and maintenance expenditure. This has made the NEA weak in meeting current liabilities.

4.3. Turn Over Ratios:

The relationship between sales and assets are indicated by Turnover Ratios. Those ratios reflect how efficiently the company is managing its resources. Thus these ratios measure the degree of effectiveness in uses of resources or funds by a firm. Depending upon the various types of assets, there are various types of Turnover Ratios. In the case of NEA, evaluation of fixed assets turn over ratio, total assets turnover, debtors turn over and average collection period was made to judge the utilization of assets.

4.3.1 Fixed Assets Turnover Ratio (FATOR):

Fixed Assets Turnover Ratio measures the efficiency with which the firm is utilizing its investment in its various net fixed assets. The ratio expresses that rupee of investment in a net fixed asset generates the resulted sale. Generally, high fixed assets turnover ratio indicates efficient utilization of fixed assets while inefficiency in utilization of fixed asset while inefficiency in utilization is shown by low fixed turnover ratio. The FATOR of NEA has been calculated by taxing revenue from sales and total fixed assets as in the following table to know how effectively the fixed assets are being utilized in NEA.

Table No. 4.3

Calculation of Fixed Assets Turnover Ratio (Rs. in Million)

Years	Sales	Fixed Assets	FATOR
1999	5396.70	20585.66	0.26
2000	6856.00	25106.49	0.27
2001	8160.80	28238.26	0.29
2002	9476.20	51080.91	0.19
2003	11012.60	50094.75	0.22
2004	11874.70	51415.14	0.23
2005	12605.20	52166.56	0.24
2006	13331.90	51743.38	0.26

2007	14449.73	51781.76	0.28
2008	15405.03	52294.10	0.29
Average	**10856.89**	**90060.70**	**0.25**

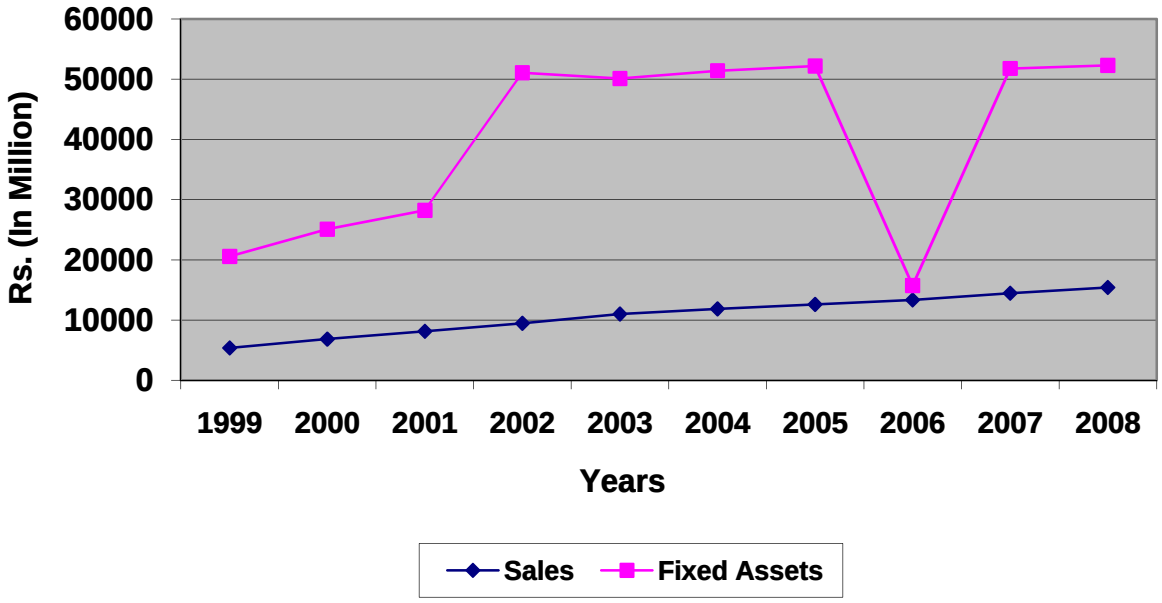
Source: NEA Balance Sheet 2008

The fixed assets turnover ratio is calculated by dividing sales by total fixed assets. According to the above table no. 4.3, the net sale of electricity of NEA has continuously increased during the study period. It varied from RS 5396.70 million to RS 15405.03 million from the year 1999 to the year 2008.

Along with the increase in net sales, the fixed assets of NEA have also been increased every year except in the tear 2003, 2006 and 2007. It varied from RS 20585.66 to RS 52294.10 million from the year 1999 to 2008. NEA has been expanding its electricity services in the different parts of the country. AS a result the volume of sales has been increased significantly. Out of the 75 districts, for this NEA required additional, fixed assets i.e. land and building, plant and machinery, solar power plant, transmission line, substation etc. Therefore, the fixed assets of NEA have increased every year with new plants and additional power generation capacity. The fixed assets turn over ratio of NEA showed poor utilization of fixed assets of NEA. A rupee investment in fixed assets is able to generate sales of RS 0.26 only in 1999. In other years i.e. 2002, 2003, 2004 & 2005 this ratio is 0.25. It indicates very poor ratio and the main cause for the poor ratio is the poor utilization of fixed assets by NEA or some of it assets remaining idle. A fixed assets increased by 2.54 times in the year 2003, 2.85 times by 2008.

Figure no. 4.3

Graphical Presentation of Sales and Fixed Assets



The bar chart of sales and fixed assets above shows that the sales of NEA are increasing gradually in comparison to fixed assets. The fixed assets of NEA declines in year 2003, 2006 & 2007.

In conclusion though the sale is gradually increasing in respect of fixed asset, fixed assets turnover ratio of 0.25 is not a satisfactory turnover. The fixed assets comprise almost 75.74% of total assets of NEA and these are supposed to provide revenue to the firm. The poor assets turnover was the cause of in efficient utilization of these assets and these has been high investment in the unproductive fixed assets like land and building. The low sale of electricity is the result of electricity leakage, low sales to the industrial sector etc.

4.3.2 Total Assets Turnover Ratio (TATOR)

Total assets turnover ratio indicates the sales generated per rupee of investment in total assets or the firm's ability of generating sales from all the financial resources to the firm. Total asset constitute the fixed assets as well as current assets and investment of the firm. This ratio can be calculated by dividing sales by total assets. The higher total assets turnovers mean better utilization of assets and vice versa.

Table no. 4.4

Calculation of Total Assets Turnover Ratio (Rs. in Million)

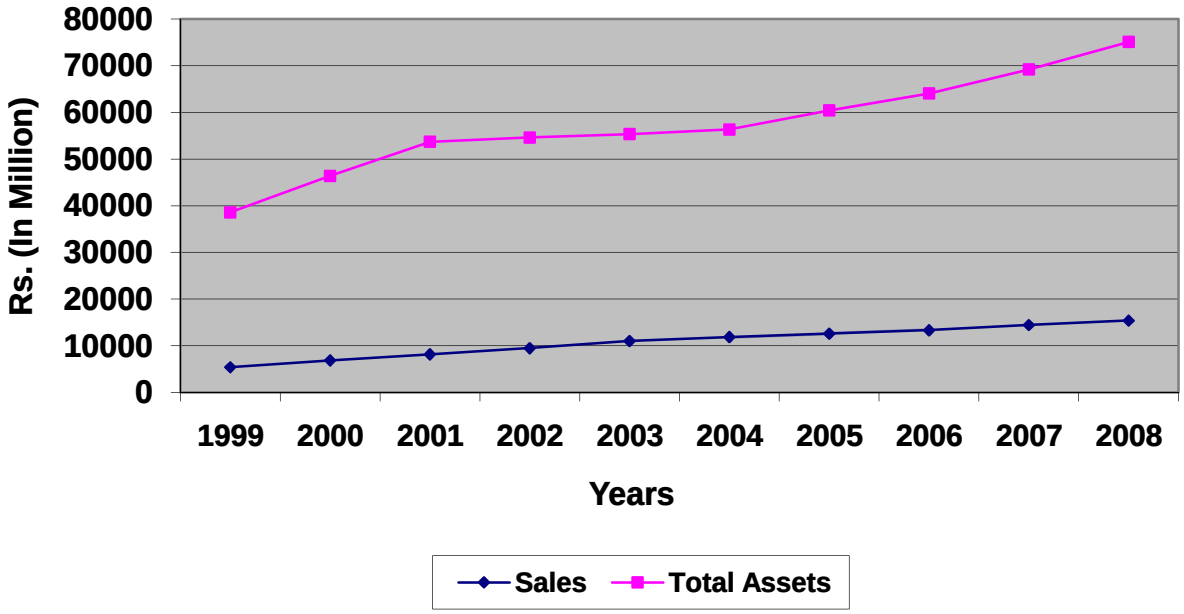
Years	Sales	Total Assets	TATOR
1999	5396.70	38593.06	0.14
2000	6856.00	46389.79	0.15
2001	8160.80	53694.76	0.15
2002	9476.20	54623.42	0.17
2003	11012.60	55344.11	0.19
2004	11874.70	56321.30	0.21
2005	12605.20	60405.17	0.21
2006	13331.90	64055.69	0.21
2007	14449.73	69195.61	0.21
2008	15405.03	75062.29	0.21
Average	**10856.89**	**57368.52**	**0.19**

Source: NEA Balance Sheet 2008

The total assets turnover ratio showed the NEA ability of generating revenue from all the financial resource committed to the NEA. The total assets turnover ratio indicated the sales generated per rupees of investment in total assets. In the year 1999 NEA has earned RS 0.14 sales only for rupee of investment in its total assets. Likewise, NEA has earned only RS 0.21 sales for its one rupee investment in the assets in 2008. NEA has been able to produce average Rs. 0.19 sales for one rupee investment in its total assets during the ten year. The ratio showed that NEA was not effective in the utilization of its assets. The sales volume however seemed to be growing each year and it has almost become 2.85 times in total year 2008 than in 1999. But the increase in total assets was 1.94 times so the increase in volume of sales did not rupee investment. This position clearly indicates that some portion NEA assets are remaining idle or they were not properly utilized. It is also possible that there are many obsolete assets, which were not in auditor's position to provide desirable yield.

Figure no. 4.4

Graphical Presentation of Sales and Total Assets



The bar chart above shows the sales and total assets of NEA. The chart shows that the sales of NEA are increasing gradually per year. Similarly the total assets of the NEA are also increasing gradually in every year. The average return on total of NEA indicates there has been unplanned investment in the assets of NEA without making proper analysis of cost and benefits. Attention did not seem to be paid in the revenue generation aspect of assets and their effective utilization as well as the management of NEA is either not able to utilize the assets properly without considering the ability to generate revenue.

4.3.3 Inventory Turnover Ratio (ITR):

The inventory or stock turnover indicates the efficiency of the firm's inventory management. This ratio shows how rapidly the inventory is turning into receivable through sales. High inventory turnover is indication of good inventory management turnover suggests an in efficient inventory management. Inventory turnover ratio of NEA for the study period is presented in the table4 below.

Table no. 4.5

Calculation of Inventory Turnover ratio (Rs. in Million)

Years	Sales	Inventory	ITR (in times)
1999	5396.70	740.00	7.29
2000	6856.00	982.30	6.98
2001	8160.80	960.90	8.49
2002	9476.20	1058.10	8.96
2003	11012.60	1017.22	10.33
2004	11874.70	1047.01	11.33
2005	12605.20	1372.70	9.18
2006	13331.90	1354.80	9.84
2007	14449.73	1498.45	9.64
2008	15405.03	1518.45	10.15
Average	**10856.89**	**1155.09**	**9.27**

Source: NEA Balance Sheet and Income Statement 2008

From the above table the stock turnover ratio on the fiscal year 2004 seems the highest ratio among all fiscal year. The average inventory turnover ratio is 9.27. It varied from 7.29 times in 1999 to 1.15 times in 2008. It followed fluctuating trend for the study period during 1999 to 2008. It showed that NEA's inventory management might efficient.

4.3.4 Average Collection Period and Debtor's Turnover Ratio:

One of the major challenges with NEA at present is the problem of receivable management. It was due to mismatch of collection and its turnover. The way NEA has been in a position to manage the receivable is explained through the presentation of data taking from the period 1999 to 2008. While observing the 10 years data the important variables like receivable, net revenue from sales have been considered to show their relationship with each other a period wise analysis. So to see the relationship between receivable and net revenue from sales, the receivable turnover ratio and average collection period were computed.

The average collection period tells the average turnover of the day's receivable and outstanding, the average times it takes to convert them into cash. Short average collection shows the timely payment of debt and long average collection period indicates inefficiency of the firm in collection of receivables.

The debtor's turnover ratio and average collection period have been calculated in the table below.

Table no. 4.6

Calculation of Average Collection Period and debtor's Turnover Ratio

(Rs. in Million)

Years	Receivables	Sales	ACP	Changes	DTR (times)
1999	1530.90	5396.70	102	0	3.53
2000	1525.50	6856.00	80	-22	4.49
2001	1678.50	8160.80	74	-6	4.86
2002	2284.90	9476.20	86	+12	4.15
2003	3380.20	11012.60	110	+24	3.26
2004	3735.71	11874.70	113	+3	3.18
2005	3697.70	12605.20	105	-8	3.41
2006	4088.00	13331.90	110	+5	3.26
2007	5151.41	14449.73	128	+18	2.81
2008	6776.70	15405.03	158	+30	2.27
Average	**6384.95**	**10856.89**	**106**	**-**	**3.52**

Source: NEA Balance Sheet and Income Statement 2008

Average collection period (ACP) provides the information on the liquidity of the receivable. The shorter the period of collection, the higher is the debtor's turnover ratio. Higher duration of collection period is tying the wealth of business in the form of debtor's.

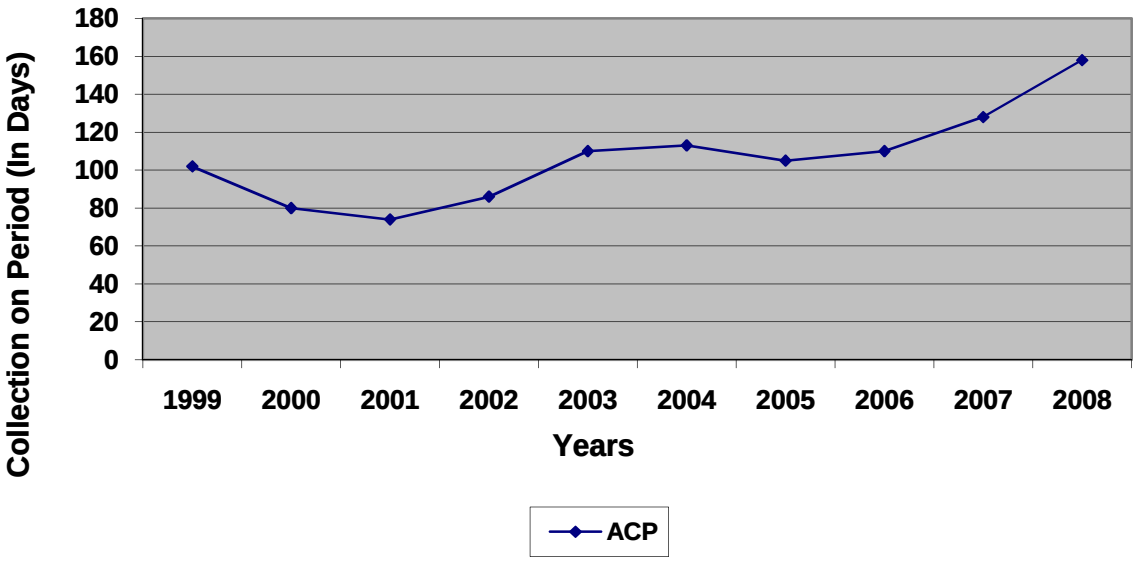
In table no. 4.6 it is seen that the receivable is in an increasing trend except 2000 & 2005. It increased from RS 1530.90 million to RS 6776.70 million from the year 1999 to 2008. The revenue from the sale of electricity is also in an increasing trend and it increased from RS 5396.70 million to RS 15405.03 million from the year 1999 to 2008.

While calculating the average collection period. It has been observed that the collection period for the year 1999 was 102 days which decreased by 22 days. Then the ACP reduced by 6 days in the year 2001 and reached to 74 days. The collection period in the year 2002, 2003, 2004, 2005, and 2006 was 86 days, 110 days, 113 days, 105 days respectively. The collection period reached extremely higher in the year 2007 and 2008 and reached 128 days and 158 days respectively.

There is no any standard collection period fixed by NEA. The standard collection period of 106 days on average is only approximate that is used in the absence of standard developed by NEA. The cause behind the increase in ACP may be the unstable government and ineffectiveness in revenue collection. Government has issued some policies about the autonomy of NEA and issued a circular to pay the electricity bill in time for all offices. On the other hand, NEA has also started different programs to improve the collection of receivables by forwarding various attractive offers.

Figure No. 4.5

Graphical Presentation of Average Collection Period and Debtor's Turnover Ratio



The above trend line shows average collection period of NEA. According to the trend lines, the average collection period of NEA is fluctuating. It shows that the collection of bill is not satisfactory as it is increasing except in some of the years that show the satisfactory collection period.

NEA being a government corporation with an autonomous status did not seem to be serious in collecting the outstanding receivable. Looking at the various reports and discussions with concerned people and research studies reveals that timely legal action was not adequately taken to all defaulting customer nor the government has been serious to direct government offices to pay electricity bills timely on the ground of budget constrains or due to administrative negligence.

NEA should take it seriously in the collection of revenue. The NEA should improve the behaviour and culture of the staff and it should be client oriented. On the other hand initiatives and corrective actions should be taken in revenue collection from different sectors especially dues with government agencies and institutions, which seemed to be the greatest defaults. Finally it can be said that there is no any clear policy for debtors or receivable management in NEA.

4.4 Profitability Ratio (PR):

Profitability ratios are the measure of firm's earning capacity and operating efficiency. A company must earn sufficient amount of profit to service and sustain in the future from its operation. Without it no firm can exist and the future of the company will be jeopardized. Therefore profit is the ultimate outcome of company. Profitability ratios of the firm can be calculated in relation to sales and investment.

Profit position of NEA can be found by applying the profitability ratios. Profitability ratio indicate the corporations overall efficiency of operations. It is true that higher the profitability ratios better the financial position and vice-versa.

4.4.1 Net Profit Margin:

The net profit margin establishes the relationship between net profit and sales. The ratio measures the firm's ability to change each rupee sales into net profit.

Table No. 4.7

Calculation of Net Profit Margin

(Rs. in Million)

Years	Sales	Net Profit	Net Profit Margin
1999	5396.70	(96.00)	-0.02
2000	6856.00	185.10	0.03
2001	8160.80	(51.10)	-0.006
2002	9476.20	(860.70)	-0.09
2003	11012.60	(1953.70)	-0.18
2004	11874.70	(1760.30)	-0.15
2005	12605.20	(1312.80)	-0.10
2006	13331.90	(1267.80)	-0.09
2007	14449.73	314.19	0.02
2008	15405.03	1312.16	-0.09
Average	**10856.89**		

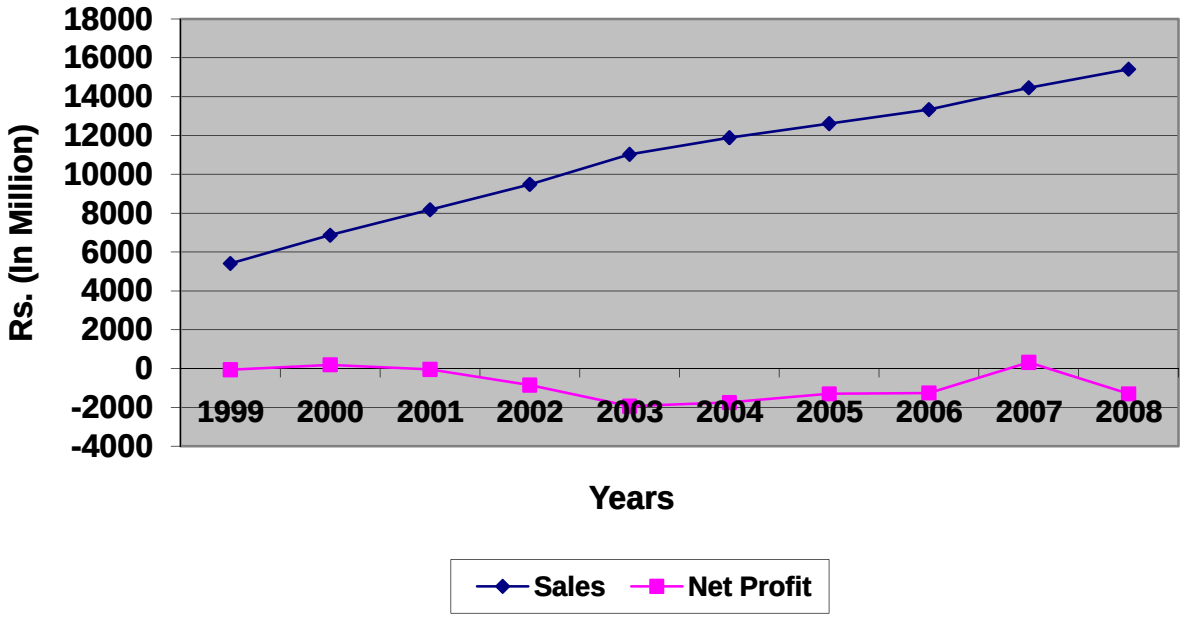
Source: Balance Sheet and Income Statement 2008

Sales constitute the fundamental dynamic force in a business enterprise. Without sufficient sales of goods and services business may not be successful. The ratio of net profit to sales shows the profitability does not mean anything unless it commands profit. From this ratio it can also be acquired the information of the total expenses incurred during a certain period of time.

According to table No. 4.7 the NEA has been suffering from heavy losses except in the year 2000 & 2007. The reason behind the losses were heavy operating expenses, increasing burden of interest on long term loan and prior years expenses adjustment. Depreciation, doubtful debts and deferred expenditures have also been the instrument to cut off profit margin.

Figure No. 4.6

Graphical Presentation of Profit and Sales



The above bar chart of profit and sales of NEA shows that the profit of NEA is negative and unsatisfactory. NEA is facing losses though their sales is increasing continuously. The expenses in NEA still does not seem to be in due control therefore the management of NEA should take initiative actions to reduce unnecessary and wasteful expenses.

4.4.2 Net Operating Ratio (NOR):

The net operating ratio establishes relationship between operating expenses and sales and revenue. The operating ratio is the yardstick of operating efficiency. The calculation of this ratio comprises computation of all operating expenses, cost of goods sold and general administrative expenses. It indicates the average aggregate variety in expenses, where some of the expenses may be increasing while some may be felling. This ratio throws lights on managerial policies and programs. In general, higher operating, ratio is inefficient due to higher operation cost in terms of sales. Lower operating ratio is favourable, as it will generate higher operating income, which will be sufficient to meet interest, dividend and other expenses of the firm. The following table depicts the operating ratios of NEA over the period of ten years.

Table No. 4.8

Calculation of Net Operating Ratio

(Rs. In Million)

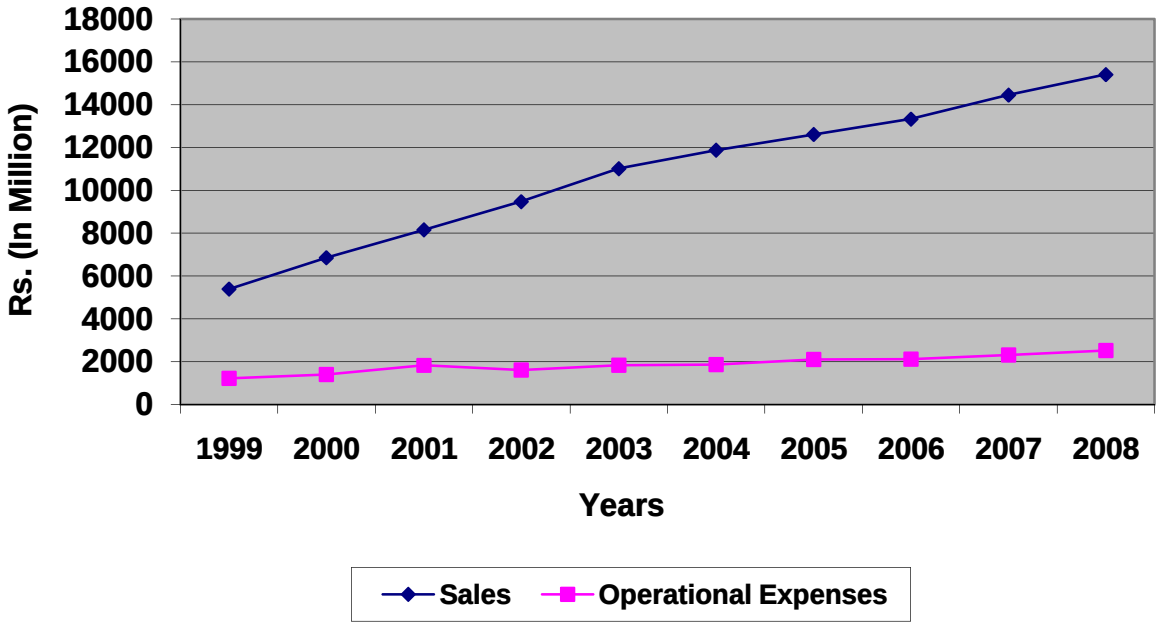
Years	Sales	Operational Expenses	NOR
1999	5396.70	1229.50	0.23
2000	6856.00	1415.00	0.21
2001	8160.80	1832.30	0.22
2002	9476.20	1621.80	0.17
2003	11012.60	1844.70	0.17
2004	11874.70	1865.20	0.16
2005	12605.20	2106.60	0.17
2006	13331.90	2123.20	0.16
2007	14449.73	2313.98	0.16
2008	15405.03	2523.56	0.16
Average	**10856.89**	**1887.58**	**0.18**

Source: Balance Sheet and Income Statement 2008

The operating ratio of NEA was 0.23 in the year 1999 which indicated that 23% of revenue was consumed by operating expenses and allowed 77% of revenue to cover interest and other charges. Similarly the operating expenses was 0.21, 0.22, 0.17, 0.17, 0.16, 0.17, 0.16, 0.16 and 0.16 in the year 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007 and 2008 respectively. In all these study period good margin of revenue has been left. In conclusion, operating expenses of NEA during the study period could be termed satisfactory as it showed the sufficient operating income to meet interest, dividend and other expenses of the organization.

Figure No. 4.7

Graphical Presentation of Operating Expenses and Sales



The graphical presentation of operating expenses and revenue shows that the operating expenses of NEA is increasing with the increase in its sales. The sale of electricity is increasing rapidly but the operational expenses rise slightly in comparison to its revenue.

4.4.3 Return on Total Assets (ROTA):

Return on total assets presents the relationship between total assets and net profit. It is the proportion of net income after taxes plus interest expenses to total assets (total investment). Return on total assets shows the percentage of net profit on total assets. The profitability of the firm is also measured in relation to investment. A firm makes a lot of investment on its assets with the expectation that the investment on such assets will yield a reasonable amount of profits. The return on total assets ratio measures the profitability of all assets. As the relationship of satisfactory level of profit is one of the main objectives of the firm, this ratio shows the extent to which this objective is being achieved.

The return on the total assets is the rate of return earned by the firm and all its investments including the lender. Higher return on total assets ratio shows higher earning

of the firm in terms of its total assets. Lower ratio indicates unhealthy financial position due to low level of return.

Table No. 4.9

Calculation of Return on Total Assets

(Rs. in Million)

Years	Net Profit before tax	Total Assets	ROTA (%)
1999	167.60	38593.06	0.43
2000	756.50	46389.79	1.63
2001	-1.90	53694.76	-0.004
2002	-717.40	54623.42	-1.31
2003	-455.90	55344.11	-0.82
2004	-1486.10	56321.30	-0.26
2005	-1312.80	60405.17	-2.17
2006	-1267.80	64055.69	-1.98
2007	314.19	69195.61	0.45
2008	-1312.16	75062.29	-1.75
Average	**-5315.77**	**57368.52**	

Source: NEA Balance Sheet and Income Statement 2008

From the above table, it can be observed that the return on total assets of NEA is negative except in the year 1999, 2000 and 2007, which seems very poor and unsatisfactory. These negative ratios were the result of heavy and uncontrollable general and operating expenses. The volume of total assets has increased over the years along with other operative expenses and depreciation but no incensement has occurred in the volumes of profit according. As a result the ratio deteriorated during the study period.

The reason behind the low return on total assets of NEA was mainly the excess investment made on assets than actually required and the inefficient utilization of these assets. Due attention should be paid to utilize these assets effectively in order to generate a reasonable amount of profits on the investment made in the assets of NEA. The return on total assets percentage shows unsatisfactory performance. The overall ratio analysis indicates relatively poor performance of NEA.

4.5 Leverage Ratios:

4.5.1 Total Debt to Total Asset Ratio:

The ratio between total debt and net assets is called total debt ratio. The following table shows the total debt to total asset ratio as the table below.

Table No. 4.10

Calculation of Total Debt to Total Asset Ratio

(Rs. In million)

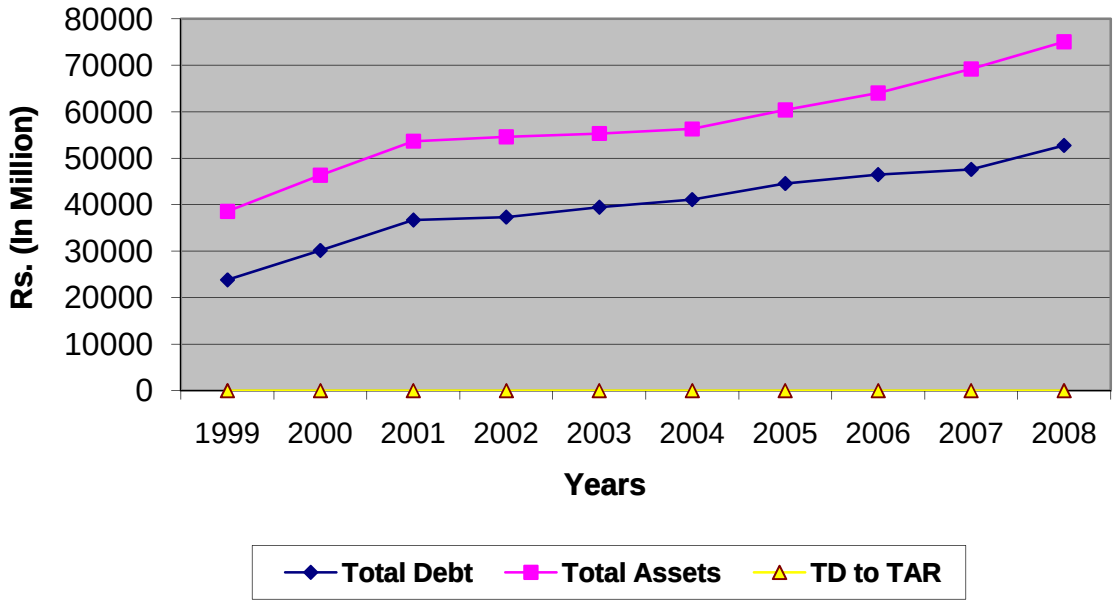
Years	Total Debt	Total Assets	TD to TAR
1999	23824.30	38593.06	0.62
2000	30155.70	46389.79	0.65
2001	36707.50	53694.76	0.68
2002	37325.61	54623.42	0.68
2003	39637.11	55344.11	0.72
2004	4113.14	56321.30	0.73
2005	44537.51	60405.17	0.74
2006	46487.91	64055.69	0.73
2007	47616.15	69195.61	0.69
2008	52762.18	75062.29	0.70
Average	**40015.71**	**57368.52**	**0.69**

Source: NEA Balance Sheet 2008

An approach to calculate the debt to capital ratio is to relate the total debt to the total assets of the firm. The total debt of the firm comprises long-term debt plus current liabilities. The total assets consist of permanent capital plus current liabilities. The higher ratio indicates that the creditors claim in the total assets of the company is higher than the owners claim.

Figure 4.8

Graphical Presentation of TD to TAR



The ratios show the contribution of total debt on fixed assets. The debtor's risk is low when the ratio is low and vice versa. But from the organization point of view the high ratio is preferable as more risk yields to more gain. Here the debt ratio in all fiscal year is more than 62%. In the years 2001 and 2002 the ratio is constant that is 68% after that in the year 2003, 2004 and 2005 continuous increase again it decreased. It indicates that NEA is taking high risk. We can say that the result of the TAR is not satisfactory.

4.5.2 Debt Equity Ratio (D/E Ratio):

The ratio between total debt and total equity is called total debt ratio. The total equity of the firm comprises share capital, reserve and accumulated profit (retained earnings). The debt equity ratio of NEA is as below.

Table No. 4.11

Calculation of Debt Equity Ratio

(Rs. in Million)

Years	Total Debt	Total Equity	D/E Ratio
1999	23824.30	14768.76	1.61
2000	30155.70	16234.09	1.86
2001	36707.50	16987.26	2.16
2002	37325.61	17297.81	2.16
2003	39637.11	16976.87	2.33
2004	4113.14	18215.85	2.30
2005	44537.51	20161.80	2.20
2006	46487.91	23113.10	2.01
2007	47616.15	26382.18	1.80
2008	52762.18	28414.99	1.86
Average	**40015.71**	**19855.27**	**2.03**

Source: NEA Balance Sheet 2008

From the above table it can be seen that the D/E ratio is same in the year 2000 and 2008 with the ratio 1.86 and in the year 2001 and 2002 ratio is 2.16. The total debt increased from Rs. 23824.30 million to Rs. 52762.18 million from the year 1999 to the year 2008. In the same way the total equity raised from Rs. 14768.76 to Rs. 28414.99 million with the D/E ratio 1.61 and 1.86. The total debt increased from Rs. 23824.30 million to Rs. 52762.18 million which is 2.21 times more than the beginning year. The result shows that the increasing tendency of debt is very high than equity. This indicates that the financial position of NEA is not in good position. NEA should pay huge amount of revenue for long term debt and current liabilities.

4.6 Debt Management Ratio:

Liquidity ratio focused on the ability to meet current obligation. In constraint to it, debt management ratio measures the ability to meet long term as well as current obligation in using long term debt. It is also called leveraged or capital structure ratio. Debt

management ratios measures the extent to which firm is using debt financing or financial leverage, and degree of safety afforded to creditors.

4.6.1 Time Interest Earned Ratio:

This ratio explain the ability of meeting current obligation on the basis of EBIT, so higher the time interest ratio shows a greater ability to raise the funds and vice-versa.

Table No. 4.12

Calculation of Time Interest Earned Ratio

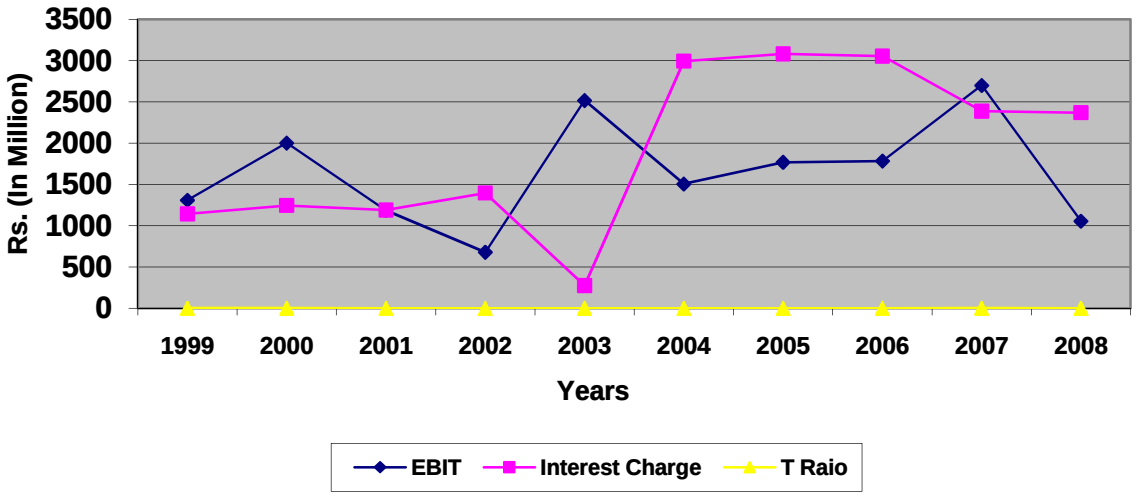
(Rs. in Million)

Years	EBIT	Interest Charge	TIE. Ratio
1999	1308.8	1141.20	1.15
2000	2000.8	1244.30	1.61
2001	1186.3	1188.30	0.99
2002	678.1	1395.50	0.49
2003	2517.5	273.40	0.85
2004	1505.4	2991.50	0.50
2005	1766.9	3079.80	0.57
2006	1783.1	3050.90	0.58
2007	2699.6	2385.41	1.13
2008	1056.3	2368.41	0.45
Average	**1650.3**	**2181.86**	**0.83**

Source: NEA Income Statement 2008

Figure No. 4.9

Graphical Presentation of EBIT and Interest Charge



In the above table no. 4.12 interest earned ratio is calculated. This ratio explains the ability of meeting current obligation on the basis of EBIT. So, higher the time interest earned ratio greater the ability to raise the funds and vice versa. In above calculation TIE ratio is higher in the year 1999, 2000 & 2007 and in the other fiscal years TIE ratio is less than 1. This means that NEA is not able to earn EBIT required to meet its interest charge obligation. NEA's average TIE ratio (Interest Paying Ability) is 0.83, which is very weak and suggests that in an average, NEA is not able to pay its annual fixed charge obligation on its loan. It is using more debt than its capacity.

4.6.2 Long Term Debt to Total Capitalization:

It measures the weight or proportion of debt capital in capital structure. Therefore, a firm can adjust its capital structure to result in a minimum weighted average cost of capital (WACC).

Table No. 4.13

Calculation of Long Term Debt to Total Capitalization

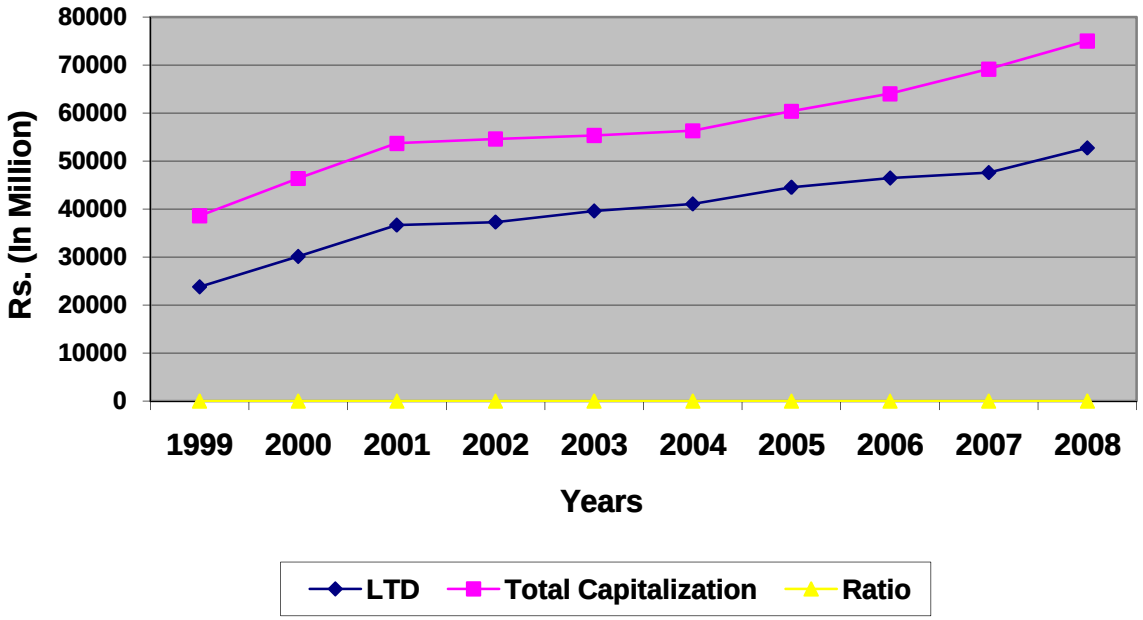
(Rs. In million)

Years	LTD	Total Capitalization	Ratio
1999	23824.30	38593.06	0.62
2000	30155.70	46389.79	0.65
2001	36707.50	53694.76	0.68
2002	37325.61	54623.42	0.68
2003	39637.11	55344.11	0.72
2004	41103.14	56321.30	0.73
2005	44537.51	60405.17	0.74
2006	46487.91	64055.69	0.73
2007	47616.15	69195.61	0.69
2008	52762.18	75062.29	0.70
Average	**40015.71**	**57368.52**	**0.69**

Source: NEA Balance Sheet 2008

Figure No. 4.10

Graphic Presentation of LTD and Total Capitalization



In above table percentage of debt in the capital structure is calculated for NEA over the 10 year period from 1999 to 2008. The ratio of LTD to Total Capitalization seems increasing from the fiscal year 1999 to 2005 that is 0.62 to 0.74. Again the ratio has decreased Higher the ratio is favourable for the company as it is less costly, flexible and no interference in management and control by creditors.

4.7 Multiple Regression Analysis:

Regression is the statistical tools, which presents the linear relationship between two or more variables. IF one or more independent variables are changed then it results the change in the value of dependent variables. Statistically such variables can be presented in the mode of linear equation. This analysis is done with multiple regressions analysis to find out the existence or non-existence of any relationship between dependent and independent variables. In this analysis two regression equations have been set. The first regression includes profitability as dependent variable and capital employed and sales as independent variables. The second regression includes profitability as dependent variable and current assets and current liabilities as independent variables.

4.7.1 Analysis of regression model-1:

$y = a + x_1 b_1 + x_2 b_2$

Where,

y = dependent variable or profitability

a = intercept or constant value

b_1= partial regression coefficient of y on x_1 when X_2 remain as constant.

X_1= Capital Employed

B_2= Partial regression coefficient of y on X_2 when X_1 remain as constant.

X_2= Sales

Table No. 4.14.1

(Rs. In million)

Years	Profit (Y)	Capital Employed (X_1)	Sales (X_2)
1999	167.60	38593.06	5396.70
2000	756.50	46389.79	6856.00
2001	-1.90	53694.76	8160.80
2002	-717.40	54623.42	9476.20
2003	-455.90	55344.11	11012.60
2004	-1486.10	56321.30	11874.70
2005	-1312.80	60405.19	12605.20
2006	-1267.80	64055.69	13331.90
2007	314.19	69195.61	1449.73
2008	-1312.16	75062.29	15405.03

Source: NEA Balance Sheet and Income Statement 2008

The regression results of model-1

Source of Variation	Sum of Squares	DF	Mean Square	F-Ratio
Regression (Explained)	SSR = 1151257	2	MSR = 575628.552	F cal = $\frac{MSR}{MSE}$
Error (Unexplained)	SSE = 1459297	7	MSE = 208471.058	= 2.761
Total	TSS = 2610554	9		

a. Predictors: (Constant) X_1, X_2

b. Dependent Variable: Y

By the application of SPSS program the values are obtained as under,

a = 1302.501

b = 0.0638

b_2 = 0.289

$Y = 1302.501-0.0638X_1 + 0.289X_2$

$R^2 = 0.441$

Adjusted $R^2 = 0.281$

Standard Error of Estimate = 456.5863

Fcal = 2.761 (df =2.7)

Ftab 0.05 (2,7) = 4.74

Ftab > Fcal

The tabulated value of F test at 5% level of significance for degree of freedom of (2,7) is given by Ftab = 4.74 which is more than calculated value 2.761 this explains that there is significant relationship between profitability, capital employed and sales. Since calculated value of F is less than tabulated value (Ftab > Fcal) null hypothesis, Ho is accepted. Although the independent variables are important to result specific profitability but their degree of contribution are different by nature.

4.7.2 Analysis of regression model-2:

$y = a + x_1 b_1 + x_2 b_2$

Where,

y = dependent variable or profitability

a = intercept or constant value

b_1= partial regression coefficient of y on x_1 when X_2 remain as constant.

Where X_2 remains as constant

X_1= Current Assets

B_2= Partial regression coefficient of y on X_2 when X_1 remain as constant.

X_2= Current liability

Table No. 4.14.2

(Rs. In million)

Years	Profit (Y)	Current Asset (X_1)	Current Liabilities (X_2)
1999	167.60	5053.20	4786.50
2000	756.50	5761.10	5477.40
2001	-1.90	6313.60	6113.70
2002	-717.40	7322.00	10096.99
2003	-455.90	7690.48	12347.00
2004	-1486.10	7883.41	14538.09
2005	-1312.80	8491.60	17466.39
2006	-1267.80	8995.30	19854.19
2007	314.19	10322.97	22812.13
2008	-1312.16	11391.46	26430.84

Source: NEA Balance Sheet and Income Statement 2008

The regression results of model-2

Source of Variation	Sum of Squares	DF	Mean Square	F-Ratio
Regression (Explained)	SSR = 1075092	2	MSR = 537545.874	F cal = $\frac{MSR}{MSE}$
Error (Unexplained)	SSE = 135463	7	MSE = 219351.815	= 2.451
Total	TSS = 2610554	9		

a. Predictors: (Constant) X_1, X_2

b. Dependent Variable: Y

By the application of SPSS program the values are obtained as under,

a = 2442.798

b = 0.512

b_2 = 0.171

$Y = 2442.789 - 0.512X_1 + 0.171X_2$

$R^2 = 0.412$

Adjusted $R^2 = 0.244$

Standard Error of Estimate = 456.5863

Fcal = 2.451 (df =2.7)

Ftab 0.05 (2,7) = 4.74

Ftab > Fcal

The tabulated value of F at 5% level of significance for degree of freedom (2,7) is given by Ftab = 4.74, which is more than calculated value 2.451. This explains that there is significant relationship between profitability, current assets and current liabilities. Since calculated value of F is less than tabulated value (Ftab > Fcal) null hypothesis, Ho is accepted. In this regard profitability is dependent upon current asset and current liabilities, although the independent variables are important to result specific profitability but their degree of contribution are different by nature.

4.8 Major Problems and Challenges of NEA:

It is a great challenge to manage necessary means and resources to construct hydroelectricity project in order to supply the increasing demand of electricity, in the other hand supplying the increasing demand of electricity in cheap and sufficient manner is another challenge. The following are the problems and challenges of NEA.

4.8.1 Balance Between Demand and Supply:

There will be challenge in supplying demand of electricity for NEA in upcoming days. In absence of new production centre's it will be impossible to meet increasing demand. Five year's electricity demand, capacity and supply situation forecasted by NEA is given below.

Table No. 4.15

Electricity Energy (GWh)

	2006/07	2007/08	2008/09	2009/010	2010/011
Demand	2897.2	3136.9	3428.3	3698.6	4056.6
Available hydroelectricity	3162.6	3580.7	3667.7	3972.2	4635.8
Hydroelectricity Generation	2758.8	3018.5	3212.8	3480.4	3865
Thermal Generation	15	12.7	45.9	43.1	40.4
Import	113.6	103.6	157.8	156.1	136.7
Hydroelectricity Surplus (Rainy Season)	403.9	562.2	455	491.7	770.8
Deficit Electricity (Dry Season)	4.9	2	11.9	19.1	14.5

Table No. 4.16

Dry Season Demand and Supply (MW)

	2006/07	**2007/08**	**2008/09**	**2009/010**	**2010/011**
Total hydroelectricity capacity	452.2	524.7	524.7	524.7	611.8
Thermal electricity capacity	49.0	49.0	49.0	49.0	49.0
Import	50.0	50.0	50.0	50.0	50.0
Total electricity capacity	551.2	623.7	623.7	623.7	710.8
Dry Season's peak, demand	617.7	668.7	738.7	796.9	835.8
Surplus/Deficit	-66.5	-45.0	-115	-163.2	-155

In 10^{th} plan it was aimed to add the capacity total 314 MW out of which 100 MW by NEA and 214 MW by private sector but due to various reasons projects could not be completed. Marshyangdi (70 MW) will be constructed on 1^{st} year of 11^{th} plan where as Kulekhani 3^{rd} (14 MW) and Chamelia (30 MW) has commenced at the end of 10^{th} plan. In this period out of private sectors projected 214 MW, 35.28 MW has been generated whereas 4.4 MW energy is expected to be added.

4.8.2 Distribution Problem

A. Internal

Because of low capacity of national transmission grid Hetauda-Bardaghat 132 KV, there is difficulty in the flow of electricity/ the areas like Kathmandu, Birganj & Biratnagar are the main electricity consumption load centres due to which large share of generated electricity is transmitted in these sectors. Due to fault-eye-trip in those areas transmission line large capacity electricity generation centres like Kaligandaki and Marshyangadi's total electricity has to be transmitted though Hetauda-Bardaghat in these sectors, so those transmission line seem to be bottleneck. Butwal to Duhabi and up to Anarmani the transmission line is very long and there is no any large electricity generation centres in eastern region so total electricity demand of those region has to be transmitted from the electricity centres of western region, there is low voltage so even in rainy season water is wasting by western's region electricity project.

B. Indo-Nepal electricity exchange transmission problem. About 50 MW electricity has been exchanged between Nepal-India from Gandak and Duhabi 132 KV. To make this exchange capacity 150 MW in 2056 B.S. it was identified to construct Butwal-Aanandnagar, Parwanipur-Motihari & Dhalkebar-Sitahadhi 132 KV transmission line could not be constructed in both region due to lack of concrete decision between two nations.

4.8.3 Approval for the study of environment:

There is delay in the implementation of project due to long period minimum 1-5 years to complete set process for the approval of environmental effect evaluation report.

4.8.4 Right of Way:

10% of set price is paying as a compensation for the land on extension line's right of way for which most of the land owner raise an argument which cause delay in the implementation of the project.

4.8.5 Electricity Leakage:

Out of the existing problems of NEA electricity leakage is the major problem. Although there is reduction in the percentage of leakage of electricity in comparison to the beginning years of establishment of NEA, success could not be achieved as desired. Joint leakage of generation and transmission is 6% where as remaining seems due to distribution system.

Table No. 4.17

Fiscal Year	Leakage Percentage	Fiscal Year	Leakage Percentage
2042/043	29.00	2053/054	24.92
2043/044	28.40	2054/055	23.40
2044/045	24.90	2055/056	22.90
2045/046	25.00	2056/057	23.90
2046/047	28.00	2057/058	23.60
2047/048	25.00	2058/059	24.56
2048/049	23.70	2059/060	23.66
2049/050	25.20	2060/061	23.01
2050/051	24.90	2061/062	24.83
2051/052	25.06	2062/063	24.70
2052/053	24.61	2064/065	24.94
2064/065	26.71	2065/066	25.15

Following are the main reasons for high percentage of leakage in transmission system.

1. Technical Leakage

- Having extremely lengthy line of 33 KV, 1 KV and 400 Volt:
- Over load due to use of small size conductor in distribution line.
- Improper size of distribution transformer and no connection with load centre.
- Development of long Single phase distribution line.
- Lack of Power factor in distribution system.
- Lack of Phase balance among distribution transformers.

2. Non-technical Leakage:

- Increase in electricity pilferage by hooking and deforming meter in absence of inspection in village areas due to peace and security.
- About on lakh customers meter reading remain undone due to peace and security situation.
- Intentional wrong meter reading and billing. The following problems exist in controlling electricity leakage.
- Unable to manage investment according to need in order to system improvement.
- Unable to develop standard distribution line due to shortage of capital in order to line extension and rural electrification.
- Unauthorised installation and electrification without meter in Gularia of 3 pieces 100 KVA and 1 piece 500 KVA.
- Use of electricity without connecting meter in several security bodies.
- In many places lack of security to meter reading and billing personnel.
- Weak follow-up mechanism for intentional wrong meter reading and billing.

4.8.6 Financial Condition:

The following are the major reasons for weak financial condition

a. Purchase of electricity:

In compression to purchase cost average sales rate is low due to which at the rate of Rs. 2.83 loss has to be borne in per unit sales. This loss refer to Himal Power Ltd, Bhotekoshi Power Company and Chilime Hydro Electricity Company Rs. 2.13, 3.27 and Rs. 3.24 respectively. There is approximately Rs. 2.60 per unit loss even in the sales of electricity imported from India. In the other hand due to the term 'Take or Pay' despite the operation of own generation centres at lower capacity during rainy season, has to be purchased from private sector, generation cost has been increased due to the compulsion of low generation.

b. Interest of Loan:

Sharing about 20% of total cost for interest cost is another form of problem. Even in the foreign loan and grant received through Nepal Government, government charges 10.25%, in due effort for 7% interest charge by corporation currently 8% has been concluded.

c. Project Constructed with Foreign grants projects constructed on grants is very expensive because of limited competition and principal and interest to be paid to government due to which there is negative effect on electricity sales cost.

d. Electricity Royalty:

According to electricity act 2049, there is a provision of royalty on sales price of Generation point in power generation. According to that provision IPPs are paying royalty on the price of generation point where as NEA has to pay royalty on average sales price to customer. It cause extra Rs. 20 Crore Burdon to NEA per year.

e. Arrears:

Arrears to be collected from municipalities and VDCs as street light charge about Rs. 1 Arab 64 Crore and from the government offices, local authorities, security authorities arrears about Rs. 36 Crore, total Rs. 2 Arab has reached.

f. Cash Flow:

Due to increasing loss and arrears it is difficult to manage internal resources for the project of new construction in the other hand there is low cash flow in the last couple of years.

g. Tariff Adjustment:

Due to un-adjustment in tariff rate since last 7 years NEA's financial condition is negatively affected.

4.8.7 Management and Development of Human Resources:

Human resource management is the major challenge within NEA. The major problems in this sector are hindrance in human resource development, weakness in distribution process of personnel, lack of timely improvement, negligence in international norms in human and resource management etc.

Any institutional performance depend upon the efficiency of personnel. While analysing last couple of years it seems devaluation of ability and skill within electricity authority. Human resource management has been affected by the concept of promotion counting service years, descent weight mark between various level in educational qualification for promotion, priority to be given on the basis of termed and waged. In this process association of personnel and organizations are not considered innocent. Due to direct or indirect effect of polities within trade unions own associations and organisations have taken decision beyond the efficiency and competition. Bureaucracy has been affected by the politics if vote.

Highly developed technology have been brought in power sector of Nepal developed in the world. It is necessary to increase the skill of personnel to operate such technology, Electricity Authority has not adopted the concept of human resource development. Expected result could not be achieved despite the heavy investment in training programme for human resource development. Training programmes are conducted in a traditional manner. While analyzing the working style of trainees, there seems no any special differences before and after the training. A big question arise in front of such training.

4.8.8 External Interference:

There is partial effect by external interference in implementation or non-implementation of any project in authority and deployment of personnel even in the operation of the office. Office building at rent for the project to giving responsibility to personnel or contract for construction, there is inference.

4.8.9 Proper Conservation of Property:

Properties like land and building, electronic plant and equipments are transferred in authority from power department, Power Corporation and various projects, in due course, in absence of proper process and proof authority itself has to buy the land of Teku sub-station whereas authority has to loose valuable land of Naxal according to the record of central account department. It is found an effort of invasion in the places including Trisuli, Sunkoshi and Balaju sub-station, should not be any delay in taking immediate action regarding this.

4.8.10 Lack of Transparency:

Due to the lack of application of transparency in a proper way in public enterprises even the good works performed by authority could not reach up to public and the serious issue load shedding could not authority solve even their will has to suffer unnecessary defamation by authority. So clearing organizations efficiency and status if every performance could be made transparent, organization can be protected from unnecessarily racing controversies. It enhances the glory of public organization.

4.9 Capacity Building and Institutional Strengthening:

NEA has continually executing its reform process with the objective of enhancing operational efficiency and developing a commercial culture within the organization. The organization structure was restructured to upgrade the internal audit and administration to deputy managing director level to provide strict cost control, maintain fiscal discipline and develop effective human resources required to operate in a competitive business environment.

A staff performance Management system based on two part evaluation was developed in house that will enhance staff performance and support the employees to achieve their carrier goal.

The NEA Grid Code prepared by the transmission and system operation (TSO) business group has been implemented. The code, though enforced within NEA, has been helpful in

increasing the performance of the national grid in addition to facilitating the evacuation of power form IPPs and providing grid connection of high voltage customers. Similarly, the preventive maintenance schedule implemented by TSO has helped to reduce the time and identify the possible breakdown of the facilities.

The installation of under frequency relays in the grid has greatly reduced the system outages and helped to reduce the restoration time after such system collapse.

In the distribution and consumer services, the performance of most of the distribution centres is satisfactory. Most of the centres have recorded a marginal reduction in losses, positive change in differential surplus and reduction in the average collection period despite the insecurity situation prevailing in the country. The performance of the DCS has exhibited that it has achieved significant results with regard to consumer services. The key achievements are:

a. Line connections to new consumers have been completed within seven days from the data of application.
b. Customer complaints and grievances under no light service have been addressed within a maximum of two hours.
c. Transformer fuse has been replaced within one hour from the receipt of complaint.
d. Clearance of bill has been made within 10 minutes of receipt on normal working days and within 20 minutes on days following a holiday n Kathmandu valley. Clearance of bill outside the valley has been made within 25 minutes.
e. The revenue collection has improved to over 90%. The average collection period has also come down.
f. Time of Day (TOD) energy meters have been promoted for use by the big consumers.
g. Queue Management System (QMS) of Kathmandu valley, has provided additional comfort to the customers living up for payment of energy bills.

NEA has continued the implementation of computerization to enhance efficiency in its operations. NEA is in the process of implementing a system developed in-house by which

the customers can make payments of energy bill through any bank. In the first phase, this will be implemented as a pilot project covering Lalitpur and Bhaktapur distribution centres.

Under strengthening of financial management, consolidated Accounting and Billing system (CAIS) has been implemented in all the budget centres to facilitate the decision making process in the field of accounting and inventory management.
NEA has also initiated the process of preparing its financial statement presentation following the international standards.

For any organization to succeed, it must have trained and skilled manpower. Realizing this, NEA has embarked on a corporate approach to training. Emphasis has been focused both on technical and management trainings for officer as well as assistant level employees. Training programs are being continuously modified and upgraded to include new areas of training requirements. Personal Data Bank has been upgraded to facilitate the efficient management of the available human resources.

The role of the USAID funded South Asia Regional initiative/Energy program deserver a special mention for its contribution in institutional capacity building effort of NEA. Under the program, NEA executives, technical as well as non technical, have had the opportunity to interact and share views with the professional from the US and the SAARC regions. This has helped our executive to introduce innovative ideas for better results. As a part of the capacity building process, the NEA institutional strengthening project has been taken up to enhance the efficiency of the finance executives.

4.9.1 Electricity Demand Forecast (Load Forecast):

The electricity demand forecast, covering the period up to FY 2019/20 is prepared considering the country's macro-economic indicators and rural electrification expansion programmes power consumption data of FY 2004/05 has been taken as basis for this load forecast. Total energy requirement in Nepal is projected to grow by an average of 8% per annum over the forecast period, from 2,299.9 GWh in FY 2003/04 to 7894 GWh in FY

2019/20. Peak demand is projected to grow from 512.2 MW in FY 2003/04 to 1733 MW in FY 2019/20. The result of the load forecast study 2004/05 is presented in table no. 19.

Table No. 4.18

Load Forecast Study FY 2004/05

Fiscal Year	Total Generation Requirement (GWh)	System Peak Load (MW)	Peak Load Growth (%)
2003/04	2299.9	512.2	
2004/05	2457.6	556.3	8.6
2005/06	2600.1	593.6	6.7
2006/07	2777.6	634.2	6.8
2007/08	3055.9	697.7	10.0
2008/09	3317.4	757.4	8.6
2009/10	3598.9	321.7	8.5
2010/11	3923.6	878.2	6.9
2011/12	4271.1	956.0	8.9
2012/13	4640.4	1038.7	8.6
2013/14	5032.9	1126.5	8.5
2014/15	5450.3	1220.0	8.3
2015/16	5894.5	1294.0	6.1
2016/17	6367.4	1397.8	8.0
2017/18	6842.3	1502.1	7.5
2018/19	7350.4	1613.6	7.4
2019/20	7894.0	1733.0	7.4

4.9.2 Power Demand and Supply Situation (till 2009/10)

The capacity balance at the time of system peak up to FY 2009/10 incorporating the planned projects as given in the generation expansion plan is presented

Table No. 4.19

Capacity Balance with Planned Projects

Existing Hydro	Installed Cap (MW)	Peaking Cap. (MW)	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Total (Hydro)	574.213	488.24	488.24	488.24	488.24	488.24	488.24	488.24
Total (Thermal)	56.71	43.00	43.00	43.00	43.00	43.00	43.00	43.00
Total (Project)				1.5	5.1	90.4	103.4	113.4
Total (Planned)	61	33.4					14	33.4
Peaking			530.24	532.74	536.34	612.64	648.64	668.04
Peak Demand			556.30	593.60	634.20	647.70	757.40	821.70
Surplus (MW)			-26.06	-60.86	-47.86	-76.06	-	-
Import			50.00	50.00	50.00	50.00	50.00	50.00
Net Surplus			23.94	-10.86	-4.86	-26.06	-58.76	-

The capacity balance presented above shows that there is shortfall of supply over demand from FY 2005/06 even after utilizing the existing thermal generating capacity of NEA, the 50 MW import available under the power exchange. Agreement with India and the limited number of planned projects that could be made available for generation in FY 2008/09 and 2009/10. Contingency measures such as in generation of industrial establishments and demand side management need to be explored in those years.

Considering the availability of the capacity generation, which is not in appreciable quantity, the increased import and the demand side management could prove to be effective. Out of the two alternatives, the demand side management along with the use of efficient lamps in domestic households and other usages for the coming fiscal years could prove to be more effective. If 10% penetration could be made in name Kathmandu Type valley only, where the peak load is more than 200 MW, the peak demand reduction will be more than 15 MW, considering 57% as lighting load.

4.9.3 Power Generation Expansion Plan:

A new generation expansion plan study for the planning period FY 2005/06 to 2019/20 was carried out. The results of the study are presented in following table.

Table No. 4.20

Generation Expansion Plan

FY	Projects	Installed Capacity (MW)	Comments
2005/06	Chaku Khola	1.5	IPP,PPA Concluded
2006/07	Baranchi	0.98	IPP,PPA Concluded
	Khudi	3.5	IPP,PPA Concluded
	Sisne Khola	0.75	IPP,PPA Concluded
2007/08	Pheme	0.95	IPP,PPA Concluded
	Lower Nyadi	4.5	IPP,PPA Concluded
	Lower Indrawati	4.5	IPP,PPA Concluded
	Mailung	5	IPP,PPA Concluded
	Mardi	3.1	IPP,PPA Concluded
	Thoppal Khola	1.4	IPP,PPA Concluded
	Middle Marsyangdi	70	IPP,PPA Concluded
2008/09	Daram Khola	5	IPP,PPA Concluded
	Upper Modi	14	IPP,PPA Concluded
	Kulekhani-III	14	IPP,PPA Concluded
2009/10	Madi-1	10	IPP,PPA Concluded
	Hewa	10	IPP,PPA Concluded
	Mewa	18	IPP,PPA Concluded
	Lower Modi	19	IPP,PPA Concluded
2010/11	Kabeli-A	30	IPP,PPA Concluded
	Upper Marsyangdi-A	50	Private
	Rohughat	27	Private

	Tamur	83	NEA, Planned
	Likhu-4	51	Private
	Upper Modi A	42	NEA-Private Joint Venture
	Chamelia	30	NEA-Private Joint Venture
	Budhi Ganga	20	NEA-Private Joint Venture
2012/13	Upper Karnali-A	75	NEA-Private Joint Venture
	Upper Seti (ST)	122	NEA-Private Joint Venture
2013/14	West Seti	75	NEA-Private Joint Venture
2014/15	Upper Tamakoshi	309	
2015/16	-	-	
2016/17	-	-	
2017/18	Dudh Koshi-1	300	
2018/19	-	-	
2019/20	Aandhi Khola	180	

4.9.4 Power Transmission Plan

The transmission expansion plan is based on the load forecast study 2004 and the revised generation expansion, plan and is limited to voltage levels of 66 KV and above. The selection of transmission lines for the loads as well as the planned power plants in Nepal are based on economic evaluation of different line/tower solutions over the lifetime of the project.

The power transmission lines given in Table have been proposed for power evacuation, and table 4.22 for system reinforcements. NEA will build the lines for NEA generation

projects, while IPPs will construct their own transmission lines to connect to the grid. Hence IPP transmission projects are not considered here in table.

Table No. 4.21

Transmission Plans for Power Evacuation

S.N.	Transmission Lines	Proposed Year of Completion
1	Middle Marsyangdi-Marsyangi 132 KV T/L	2007/08
2	Middle Marsyangdi-Iamuli 132 KV/T/L	2008/09
3	Kulekhani-III Hetauda 132 KV/T/L	2008/09

Table No. 4.22

Transmission Plans for System Reinforcement

S.N.	Transmission Lines	Proposed Year of Completion
1	Butwal Sunauli 132 KV T/L	2006/07
2	Birgunj Corridor 132 KV T/L	2006/07
3	Thankot-Bhaktapur 132 KV T/L	2006/07
4	Khimti-Dhalkebar 220 KV T/L	2006/07
5	132 KV Chandranighapur S/S	2007/08
6	Name Modi Name Khola Name S/S Type Bay Extension	2007/08
7	Hetauda-Bardaghat 220 KV T/L	2007/08
8	Kohalpur-Lamahi-Shivapur-Butwal 132 KV Second Circuiting T/L	2007/08
9	New Parwanipur S/S	2008/09
10	30 MVAR Capacitor Bank at Lamahi (West)	2008/09
11	Bharatpur-Hetauda 220 KV second circuiting T/L	2009/10
12	20 MVAR capacitor bank at Dhalkebar (East)	2009/10
13	Tamor-Mewa-Kabeli-Hewa-Duhabi 132 KV T/L	2009/10

The result of the transmission study indicates that FY 2006/07 and 2007/08 are the most critical years in terms of system stability. Commissioning of Khimti-Dhalkebar 220 KV transmission line (to be initially changed at 132 KV) by FY 2006/07 is of paramount importance if serious transmission problems are to be averted in and after FY 2006/07. In case of any delay or otherwise, if the commissioning of this 220 KV transmission line fails to materialize by FY 2006/07, any outage of the existing Hetauda-Bharatpur 132 KV line will make system unstable.

Originally, Middle Marsyangdi power was planned to be evacuated through Marsyandi powerhouse as well as through Damauli Substation. But due to resource constraints, the section of the line from Middle Marsyandi to Damauli will be completed only in FY 2008/09. This will under the NEA transmission and distribution component of WB, GN and NEA funded Power Development Project; a 75 km. long Khimti-Dhalkebar 220 KV transmission line will enhance the reliability of the power system, and improve the voltage profile of the eastern part of the grid and pave way for power evacuation from planned projects like upper Tamakoshi.

In FY 209/10 Hewa (10 MW) and Mewa (18 MW) are scheduled to be completed and in the same corridor Kabeli-A (30 MW) and Tamor (83 MW) is also planned to be commissioned by the FY 2010/11 and FY 2011/12 respectively considering all the NEA's planned hydropower projects and several identified power projects under IPPs, Power evacuation study for all these power stations were carried out. Based on this study, 132 KV Tamor-Mewa-Kabeli-A-Hewa-Duhabi transmission lines will be constructed by FY 2009/10. The availability of hydropower sites to be developed by IPPs in and around the Sunkoshi area has created a bottleneck in power evacuation. Several IPPs have been unable to undertake new power development initiative in the area because of the difficulties in power evacuation. A power evacuation study of Sunkoshi area will be made in 2004/05 in order to analyze the present and future situation and recommend necessary steps for strengthening the existing transmission capabilities.

4.9.5 Power Distribution Plan:

Population Census-2001 (National Report) shows that the population having access to electricity service has reached 40 percent with 33 percent of the population availing the service from the Grid (including BPC) and NEA off-grid facilities, the remaining 7 percent being attributed to micro hydro plants developed by local entrepreneurs and other alternate sources. The Tenth plan aims at increasing electricity services from 33 percent of the population through the Grid and NEA owned off-grid power generation facilities.

Considering the above, NEA is channelling efforts and resources for the upliftment of its distribution capabilities and expansion of lines in the rural areas. A feasibility study has already been carried out for rural electrification and distribution system reinforcement covering 47 districts. With the help of JICA NEA is undertaking a basic study master plan for the development of small hydropower projects with the objective of integrated development of remote hilly areas through rural electrification. NEA with the active support of government is implementing mid and Far Western Electrification Project (Under a concessional credit of Swedish International Development Cooperation Agency) under the NEA transmission and distribution component of the WB/GN/NEA funded power development project, electrification and reinforcement works in a total of 124 load centres covering 55 VDCs in the districts of Lalitpur, Bhaktapur, Nuwakot, Dhading and Kavrepalanchowk is being carried out which is expected to benefit about 37000 consumers in the region.

NEA is also implementing Rural Electrification Distribution and Transmission Project (Under ADB and OPEC loan, and GN-NEA funding) The Rural Electrification component will electrify new areas in 22 districts benefiting some 1,23,382 rural households of 277 VDCs through new connections and the distribution system reinforcement components of the project targets to reinforce existing distribution system for 28 schemes of 27 districts.

Under DANIDA funding, Kailai-Kanchanpur Rural Electrification Project is also under implementation by NEA. This project is expected to benefit about 64553 households.

After completion of the project, the low voltage distribution lines will be handed over to user groups (co-operatives)

In addition to the above, NEA is implementing, with its own funding reinforcement construction of existing 16 overloaded 33/11 KV distribution sub-stations in different parts of the country. NEA has also initiated additional sub-station construction works and transmission line construction works at a number of locations.

In order to provide affordable electricity supply in selected rural areas, which will help raise the living standards of people residing in such areas, facilitate establishing proper physical and social infrastructure and income generating opportunities to support sustainable economic growth in rural areas, and thus reduce disparities between rural and urban standards of living, a Rural Electrification and Renewable Energy Project is being formulated. The project will include reinforcement and development of associated transmission and distribution system in existing service areas. It will also support for developing off-grid rural renewable energy sub projects in remote areas where feasible.

As per the projected capacity balance, the system is going to have power deficit of more than 10 MW in 2005/06 and more than 47 MW in 2006/07 due to the absence of candidate projects scheduled for commissioning in the period. There are many ways of tackling this power deficit problem. They are additional power import from India, load shedding and demand side management. For additional power import from India, discussion with India counterparts in the power exchange committee could be initiated. However, in the context of preparation of corporate strategy, it an only be considered as an alternative, not a dependable solution, as it is not in the control of the corporate alone. Load shedding could be the last alternative, as it is neither a popular nor beneficial decision. The demand side management could be an attractive and most suitable solution. It helps differing projects if they are in the pipeline by reducing the peak load demand. It helps reducing the consumer bill due to reduction in the consumption. The losses are minimized, thereby making benefit to the economy demand side management will taken up seriously so that unpopular decisions like load shedding need not be made.

4.9.6 Power Exchange:

As mandated by the NEA Act 2041, NEA undertakes cross border power exchange with India under the power exchange agreement with the government of India. An indo-Nepal power exchange committee undertakes the agreement.

The quantum of exchange has been on the increase. Since, the commencement of exchange and both countries have agreed in principle to increase the level of exchange from 50 MW to 150 MW. The enhanced exchange will be made possible with Butwal-Anandnagar 132 KV transmission links between Butwal in the Nepal side and Anandnagar in the India side. With the quantum of power exchange grown up to the acceptable extent two more tie lines between Dhalkeber and Birgunj in the Nepal side and Sitamarhi and Mothihari in the India side respectively will be executed. The exchange has been directed mainly to supplement power in case of power deficiencies and emergencies. A more commercial trend is expected with the appointment of power trading corporation of India as the modal agency for India to deal with the commercial aspects of the exchange. Other acceptable methods of exchange like operating Nepalese grid are under constant research within NEA. The power exchange committee has formed a joint technical committee to study the technical feasibility of interconnection between Nepalese and Indian grid systems. With the system operation interconnected or tied to Indian grid better tie line flows are expected providing multiple mutual benefits. This will help using available power in Nepalese grid to be fully utilized and the deficit power can always be replenished from the Indian system.

4.10 Summary of Major Findings

The major findings of the study are briefly described as follows.

1. Looking over the trend of current ratio of NEA over 10 years, it can be observed that NEA's current ratio is always less than the standard norm of 2:1. The current ratios of 10 year seem very poor and unsatisfactory.
2. The quick ratio is very low for all of the years. The average quick ratio of NEA is 0.36. The NEA is not in satisfactory position in meeting its current obligations.

3. The fixed assets turn over ratio of NEA showed poor utilization of fixed assets of NEA. A rupee investment in fixed assets is able to generated sales of Rs. 0.26 only in 1999. In other years i.e. 2002, 2003, 2004 and 2005 this ratio is 0.25.
4. The average total assets turnover ratio is Rs. 0.19 sales for one rupee investment in its total assets. The ratio showed that NEA was not effective in the utilization of its assets.
5. The average inventory turnover ratio is 9.27 times. It varied from 7.219 times in 1999 to 10.15 times in 2008. It followed fluctuating trend for the study period. It shows efficient inventory management.
6. The average collection period of NEA is fluctuating that ranges from 86 days to 158 days and the average collection period is 106 days. It shows the collection of fill is not satisfactory.
7. Net profit margin seems very poor and negative except in the FY 2000 & 2007. NEA has been suffering from heavy losses. The reason behind the losses were heavy operating expenses, increasing burden of interest on long term loan and prior years expenses adjustment.
8. The net operating expenses seems 0.23m 0.21, 0.23, 0.17, 0.17, 0.16, 0.17, 0.16, 0.16, 0.16 in the year 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007 and 2008 respectively. In all these study period good margin of revenue has been left. Operating expenses of NEA could be termed satisfactory.
9. The return on total assets of NEA is negative except in the year 1999, 2000 and 2007, which seems very poor and unsatisfactory. These negative ratios were the result of heavy and uncontrollable general and operating expenses.
10. Total debt to total asset ratio is all fiscal year is more than 62%. IT is fluctuating over the study period. NEA is employing high debt which cause high risk.
11. The debt equity ratio ranges from 1.61 to 2.33 and the average D/E ratio is 2.03. It shows the debt is very high tan equity. This indicates the financial position of NEA is not in good position.
12. TIE ratio is higher in the year 1999, 2000 and 2007 and in the other fiscal years TIE ratio is less than 1. This means that NEA is not able to earn EBIT required to meet its interest change obligation.

13. The ratio of long term debt to total capitalization seems increasing from the fiscal year 1999 to 2005 that is 0.62 to 0.74. Higher the ratio is favourable for the company as it is less costly, flexible and no interference in management and control by creditor.

14. From multiple regression analysis there is significant relationship between the variables profitability, capital employed and sales. Since, The tabulated value of F test at 5% level of significance for degree of freedom of(2.7) is F tab=2.761(F tab>f cal). Profit depends upon capital employed and sales should be increased. Calculating the regression under mode 2 there is significant relationship between profitability, current assets and current liabilities. Since, calculated value of F is less than tabulate value (F tab > F cal).

15. The capacity expansion programme which is one of the best solutions to reduce the losses seems very important. Capital that needs for the implementation of this programme seems challenging financial aspects because of the present situation. But the expenses that occur during the programme can be fulfilled by generating large scale of electricity and increasing the sales.

CHAPTER-V
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Nepal Electricity Authority was established in 1985 (2042 B.S.) under the Nepal Electricity Act 1784 (2041 B.S.). The major objectives of NEA are to establish single organization that would work in all sectors of electricity planning, survey, production, maintenance and distribution of electricity and to utilize and develop the huge amount of water resources of Nepal in more coordinated way. Technology, huge market, man power and unlimited water resources are the basic things for its success.

The study focuses on the financial aspect and capacity expansion programme and its impact on its position. The objective of the study is to analyse its financial position with the help of financial ratios. The capacity expansion program is studied with the help of white paper published by NEA.

NEA is one of the largest public enterprises which is now facing great financial problem and running in heavy loss almost each study period. The total generated capacity 611 MW is quiet inadequate and inefficient against the demand.

In spite of being adequate man power, well mechanism and huge market NEA is running in heavy loss is the matter of grave challenge. It is clear that there is wide space for expansion of the capacity which can contribute to reduce its losses. There is positive impact of capacity expansion on its financial aspect as well as on other side. Many concrete steps have been taken for implementation of the capacity expansion programme but still it has not been fully achieved. The main reason behind it is lack of finance and political instability which always hindered for the smooth operation of scheduled work time and again.

The study of NEA primarily focuses on the financial obligation-generating sate of return on capital investment and internal revenue generation. To meet the increasing demand of power and energy, NEA must accelerate its capacity building through effective management.

Different literature review has revealed that the asset management in general, and current assets management in particular were the weakest points in Nepalese PEs. Because of the lack of operational objectives, application of the long run planning, use of modern management tools, capital budgeting and efforts towards cost control had not been made so far.

The main sources of data for the purpose of the study are the published financial statements of NEA for the period of ten years. The study is thus mainly based on the secondary data. It applies mostly the annual report, which comprises balance sheet and profit and loses account and income statement. In order to analyze, various financial and statistical tools like ratio analysis, multiple regression analysis and graphs and figures have been used.

By the analysis of financial datas the liquidity position seems very poor and unsatisfactory. Turnover ratio also reveals unsatisfactory and inefficient utilization of assets. Profitability ratio shows that the profit of NEA is negative and unsatisfactory. NEA is facing losses though their sales in increasing continuously. The debt ratio is all fiscal year is more than 62%. It indicates that NEA is taking high risk. After the analysis of debt management ratio NEA's average TIE ratio is 0.83 which is very weak and suggests that in an average, NEA is not able to pay its annual fixed charge obligation on its loan.

Study has found different problems and challenges facing by NEA currently and in the future. Disbalance between demand and supply, low capacity of national transmission gird, technical and non-technical electricity leakage, weak financial condition, management and development of human resources, external interface, conservation of property and lack of transparency etc are the major challenges and problems of NEA.

This study has also focused on capacity building and institutional strengthening NEA has continually executing its reform process with the objective of enhancing operational efficiency and developing a commercial culture within the organisation. The electricity demand forecast, covering the period upto FY 2019/20 is prepared considering the country's macro-economic indicators. Power demand and supply situation till 2009/10 has been presented. A new generation expansion plan study for the planning period FY 2005/06 to 2019/20 was carried out and presented. Several power transmission expansion plan based on the load forecast study 2004 has been done which supposed to be completed from 2006/07 to 2009/10. NEA is channelling efforts and resources for the upliftment of its distribution capabilities and expansion of lines in the rural areas. NEA is also implementing Rural Electrification Distribution and Transmission Project (Under ADB and OPEC loan and GN-NEA funding). In order to develop its capacity of supplying power demand, as mandated by the NEA Act 2041, NEA undertakes cross boarder power exchange with India under the power exchange agreement with the government of India. The exchange has been directed mainly to supplement power in case of power deficiencies and emergencies.

5.2 Conclusion

The study results conclude that there are some major problems affecting the financial performance and capacity expansion of NEA. Some problems are general which can be overcome with general considerations. Those problems, which are affecting to a greater extent to the financial position of NEA are included in the conclusions as major issues and gaps. More attention is needed to those issues, which are affecting significantly to the financial position of NEA.

The trend of current ratio seem too low, there is poor trade off between current assets and liabilities. Quick ratio trend shows auditor's uniform increase in both current assets and current liabilities. The fixed asset turnover ratio of 0.25 is not a satisfactory turnover it reveals poor utilization of fixed assets of NEA. Total assets turnover ratio in average Rs. 0.19 sales for one Rupee investment in. Its total assets which shows ineffective utilization

of its assets. Inventory Turnover Ratio in average is 9.27 times. It shows NEA's inventory management is efficient.

Average Collection Period and Debtor's Turnover Ratios is fluctuating. IT shows the collection of bill is not satisfactory. Calculation of Net Profit Margin shows NEA has been suffering from heavy losses except in the year 2000 & 2007. Operating expenses of NEA during the study period could be termed satisfactory as it showed the sufficient operating income to meet interest, dividend and other expenses of the organization. Return on Total asset is negative except in the year 1999, 2000 and 2007, which seems very power and unsatisfactory. Total debt to total asset ratio is all fiscal year is more than 62% which indicate that NEA is taking high risk. Debt is increasing very high than that of equity. This indicates that the financial position of NEA is not in good position. NEA's average TIE ratio is 0.83, fixed charge obligation on its loan.

Long Term Debt to Total capitalization is fluctuating. Multiple Regression analysis shows that there is significant relationship between profitability, Capital employed and sales. In the same way there is also significant relationship between profitability, current assets and current liabilities.

The study has found that there is a great challenge to meet the demand of electricity presently and in the days upcoming. Approvals for the study of environment, Right of way, Electricity Leakage are distribution problem. Purchase of electricity, interest of loan, Electricity Royalty, Arrears, Cash Flow and Tariff Adjustment are financial reasons for weak financial condition. Similarly management and development of human resources, external interference, proper conservation of property, lack of transparency are some challenges of NEA. Capacity building like, Electricity demand and load forecasting for 20 years, power transmission flow, power distribution plan and power exchange plan etc.

5.3 Recommendations:

Long life of the corporation should be ensured by maintaining sound and strong financial position. Each and every organization need to analyze its financial position as to know whether it is operating efficiently or not. Based on the conclusion appropriate recommendation have been suggested in a practical and theoretical way to improve the financial position of Nepal Electricity Authority.

1. NEA current ratio is less than the standard norm of 2:1. The current ratios of 10 year seem very poor and unsatisfactory. Hence, the corporation should adopt efficient working capital policy to make the stability in liquidity position optimum level of current assets.

2. Operating as well as operating expenses should be controlled. Management and staffs of NEA should be more careful in cost factor. The NEA should launch long term program to curtail excessive cost. Hence, the measures and techniques such as performance standards budgetary cost controlling, standard costing etc. are suggested to be followed which will control the cost effectively.

3. NEA has a large no of customers ranging from domestic, industrial to government and public understanding. While serving such large customer's NEA requires an efficient system of revenue collection so that revenue does not remain ties up in bills receivables. The collection system should treat equally to all customers and should not be influenced by political pressures. Strong and effective revenue collection mechanism must be developed and followed by NEA.

4. NEA has not achieved success in the management of its fixed and other assets. These assets are supposed to provide revenue to the firm. The analysis showed that it is earning only RS 0.25 on its fixed assets and RS 0.19 on total assets on each rupee investment. The poor assets turnover was the cause of investment than need. It is therefore recommendation that NEA should not invest in any plant or assets without making proper cost benefit and target analysis.

5. NEA has not fully utilized its installed capacity. Therefore, in the one hand it is suffering heavy loss of generating revenue in the other hand there is grave displacement among consumer. NEA must develop hydro electricity project with ample reservoir as well as regular repair and maintenance must be followed for full utilization of installed capacity.

6. Human resources management is one of the major challenges of NEA. Proper training should be provided time to time to enhance the efficiency of the personal. By bringing drastic change in traditional training system, system operation/maintenances personal should be trained regarding equipment sending manufacture's training centre or skilled trainer should be called. On the basis of compulsory minimum qualification, skill & competition new admission & promotion but on the basis of promotion counting the service period. After a certain period and process personal should be transferred on the rotation basis.

7. To face the challenge of misbalance in demand and supply of electricity, it seems to improve policy and program in due course of time. While making institutional development plan, program should be made after managing sources of investment.

8. Improvement in unnecessary delay in government body's decision making process and make effective, to encourage international company and private sector in water resources development, it seems essential to implement one window policy by developing water resources development body with full authority.

9. Water resources development is indispensable for the development of the nation. Our needs may not be fulfilled depending on foreign donor agencies and neighbouring country. Holding full confidences of the people of the country, mobilization of indigenous capital & skill is only the option.

10. In the places being direct hooking and unauthorised leakage, customers, civil society, local authority and all political parties & support should taken and raised public awareness that " Electricity pilferage is crime." Electricity pilferage electricity thief as other thief.

11. Electricity distribution regulation 2055 should strictly be implemented. According to that regulation, it is managed to cut the line of the customer remain arrear or block listed anywhere else in the country. If it is strictly implemented to such customers, there is no doubt to collect such bad debts.

12. To enhance the capacity expansion program NEA should allocate annual budget for extension line and distribution line improvement like change pole, increase conductor capacity, transformer capacity extension, placement of transformer in right load centre, faze balancing etc.

13. Arrear should be collected claiming to the Nepal govt or semi govt bodies, municipalities and VDC. It seems to manage separate budget to each sector for this purpose.

14. Strict action should be taken to the personal remaining out of financial discipline.

15. Evaluation of each personal should be done on the basis of performance indicator like minimum leakage, increase in revenue collection and economic and administrative discipline and make responsible on the return basis.

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BIO-DATA

Name	: Lal Bahadur Thapa
Father's name	: Kul Bahadur Thapa
Data of Birth	: 13th March 1970
Permanent Address	: Butwal-10, Sukhanagar, Rupandehi
Educational Qualification	: I. Com., B. Com, MBS
Technical Qualification	: Basic Computer Training
Experiences	: Teaching in High School (More than 12 years) and Higher Secondary School Level
Marital Status	: Married
Nationality	: Nepali
Language Proficiency	: Nepali, English, Hindi and Magar
Sex	: Male