

**FINANCIAL ANALYSIS  
OF  
NEPAL ELECTRICITY AUTHORITY**

**A THESIS**

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*In partial fulfillment of the requirements for the degree of  
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# **RECOMMENDATION**

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has been prepared as approved by this Campus in the prescribed format of the Faculty of Management. This thesis is forwarded for examination.

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and found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for the degree of

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## DECLARATION

I hereby declare that the work reported in this thesis entitled, '**Financial Analysis of Nepal Electricity Authority**' presented to the research department of the Nepal Commerce Campus, Tribhuvan University is my original work done in the form of fulfillment of the requirements for the degree of Master of Business Studies (M.B.S) under the supervision of Mr. Bharat Rai of Nepal Commerce Campus, Tribhuvan University.

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## **ACKNOWLEDGEMENT**

To write a thesis is the requirement for the degree of the masters of business studies. So that I had to present a work that defines my education and understanding and shows the capability and expertise in this field. That's why I chose a topic that relates to my concentration area named Financial Analysis of Nepal Electricity Authority.

The organization Nepal Electricity Authority is one of the largest organizations in our country and it is also one of the most important organizations of our country. This organization is running from a bad financial condition since a long time period. So, the financial analysis of this organization tries to enlighten about the actual financial position of this organization and it also predicts about the future financial condition. By the help of the financial statements prepared by the organization since ten years, this report does the ratio analysis and the common size analysis.

For the preparation of this report many individuals have given their kind support to me. So I would like to express my gratitude to all of them. First of all I would offer my thanks to my thesis supervisor Mr. Bharat Rai who has kindly given his sincere suggestions and guidance to prepare this report. Then I would like to offer my gratitude towards Mr. Jit Bahadur K.C who have given us the knowledge about thesis writing and taught the different aspects of the thesis and presented us the tips of writing thesis. I would also give my thanks to all the employees of the NEA and my father Rajesh Rimal who helped me to get the data from the organization. I would also like to give my gratitude to my sister Santoshi Rimal and my brother Jayanta Rimal who have given me moral support and encouragement while writing this thesis. At last I would express thanks to all of them who have directly or indirectly helped in the preparation of this report.

I hope that this report would be liked by the readers and I hope that this report will be a reference in the research about this topic and enable other to do the further study in the same topic. I hope it contribute to the research area and do justice to this.

Abantika Rimal

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## **ABBREVIATIONS**

B.S = Bikram Sambat

CVP = Cost Volume Profit

CIT= Citizen Investment Trust

GON = Government of Nepal

GPR = Gross Profit Ratio

GWH = Giga Watt Hour

IT = Information Technology

MIS = Management Information System

MW= Mega Watt

NEA = Nepal Electricity Authority

NPR = Net Profit Ratio

NTC = Nepal Telecom

PE = Public Enterprises

P/L = Profit and Loss

PPA = Private Purchase Agreement

ROA = Return on Assets

ROE = Return on Equity

SWOT = Strength, Weakness, Opportunity and Threat

# **Chapter 1**

## **Introduction**

### **1.1 Background of the Study**

Financial analysis is useful in various areas of the studies. It provides a thorough knowledge about different aspects of the company and it provides us valuable information about the company which we can use in our decision making process. Financial analysis is done by the analysis of the financial statements. Financial statements are the organized summary of detailed information about financial position and performance of a concern. The purpose for preparing financial statement is for the periodical review of the activities of the organization and results achieved by the organization. It includes profit and loss account or income statement and the balance sheet. Financial analysis is useful to various parties and the type of analysis varies according to the specific interests of the party involved such as trade creditors are primarily interested in the liquidity position of the organization and their claims is best judged by the means of a thorough analysis of liquidity of the firm. Whereas the claims of bondholders are of long term, so they are more interested on the cash flow ability of the firm to serve debt over the long run. The bondholders evaluate this ability by analysis of the capital structure of the firm, the major sources of future profitability. Investors are concerned with the financial analysis to know the ability of the company to pay dividend and to avoid bankruptcy. The management of the firm should be interested in all aspects of financial analysis that outside suppliers of capital use in evaluating the firm. It also employs financial analysis for the internal control. Management is concerned with profitability on investment in the various assets of the company and in the efficiency of asset management.

While doing the financial analysis the most commonly used tool is ratio analysis. To evaluate the financial condition and performance of a company the financial analysts needs certain yardsticks. So the ratio analysis serves that purpose very well. Analysis and interpretation of various ratios gives experienced skilled analyst a better understanding of the financial condition and performance of the firm than they would obtain from analysis of the

financial data alone. According to James C. Vanhorne, “Financial ratios help us size up a company as to trends and relative to others.” The financial ratios trend provides the analyst the composition of change and determines whether there has been an improvement or deterioration in the financial conditions and performance over time. Again the comparison of financial ratios of one firm with those of similar firms or with industry average at the same point of time can be done to see the relative performance of the firm with others and can find out the rank of the firm on the basis of performance and see in which area the firm is better and on which area it is behind.

Another tool of financial analysis is the common size analysis which evaluates the trends in financial statement percentages over time. It helps the analyst to understand the underlying improvement or deterioration in financial condition and performance. The common size balance sheet and income statement shows all the items in them in percentages of the total assets and sales respectively. This helps us to analyze the figures which are left out by the ratio analysis and see the relative contribution over the years.

Another role of ratio analysis is that the ratios also have certain predictive power depending upon the analysts past experience with them. This means that if the analyst carefully see the past ratios and draw a theory out of them he can use it to predict the future of the organization. These estimates are tending to be subjective. One of the major predictive powers of the financial ratios is to predict the business failure. The Altman Zeta model helps to discriminate between bankrupt and non-bankrupt company. This is a widely used tool to find out the financial distress in a company. According to this model the best ratios for predictive purpose are debt to equity, cash flow to debt, net operating profit margin, debt coverage and its stability, return on investment, size and earnings stability etc. This model uses various ratios among them and analyzes them to see financial health.

It is very clear that the financial analysis using various tools and models helps to find out the financial health of company and are also useful in predicting the future financial performance of a company. This analysis helps for the both internal and external parties involved in an organization for their better decision-making.

## **1.2 Background of the Organization.**

Nepal is a south Asian country which is land locked and surrounded by India in three sides and China in the north. This physical position has created economic problem. Although Nepal is a scenic beauty it suffers from the chronic problem of poverty. To solve this problem Nepal has been utilizing various techniques since the restoration of the democracy in the year 2007 B.S. As per the economic policy Nepal has adopting mixed economic policy which means the cooperation of both the public sector and the private sector in the mutual pursuit of solving problems of the nation and to lead this nation in a prosperous future. In Nepal generally public utilities and the goods of basis needs are owned by the government in order to create a public welfare. In other areas there is allowed of free competition. But this policy is gradually changing due to the impact of globalization; Nepal has been adopting the policy of liberalization which means that the public enterprises owned and managed by the government are gradually being privatized. At first Nepal used to have a large number of public enterprises. But according to the economic survey of the government, the number has decreased to a total of 36 currently which are fully owned by the government and 39 are partially owned by the government.

Among them the Nepal Electricity Authority is also one of them. One of the major issue of all of these enterprises are that they all are running on heavy losses and have poor management. The Nepal Electricity Authority also can't remain odd in this list. It is also continuing degrading in the financial performance. Even recently this institution has asked the government for a financial support for the first time in the history. Earlier the Nepal Oil Corporation was famous for it. Now the NEA has also joined the club. This organization is suffering from heavy political interference and mismanagement. The electricity tariff rate has never adjusted since ages and we hear that it is less than the actual cost price. This kind of situation of this important organization is very sad and disappointing because it is one of the important organizations of our country. Electricity is the basic need of every human being and all Nepalese people are dependent on this sole organization. It has the absolute monopoly in this area of operation. If this organization fails and ultimately shut down, Nepalese people can't survive because until now there is no backup plan. In order to survive in the long run the organization should be in a sound financial condition. It should earn

regular profit, it should manage its assets properly, it should invest in profitable areas, it should have a sound human resource development and retainment strategy, and it should serve the customers, the community and the nation and maintain its goodwill nationally and internationally. But from a surface point of view the NEA is failing in all these areas, it is suffering from gradual and continuous loss situation, the asset management is poor, in fact the NEA's assets are misused by various government and political bodies, it is suffering from a public disappointment and loss of goodwill due to the problem of load shedding and a slackly customer care. In fact the problem of load shedding is an irony for a country like Nepal which is said to be the second largest country in area of water resources. Nepal is suffering from up to 14 hours of load shedding per day. It is creating an economic regression in our country. Nepal has approximately 6000 rivers and rivulets from which we have a hydropower possibility of up to 83000 MW of electricity. But only 1.5% of the total potential has been exploited. More than 60% of the Nepalese people are out of reach of electricity. So the NEA has large possibility of growth but this organization is being unable to capture this opportunity due to strangling in its own problems. As we all know, NEA can't afford to be a failure because the whole nation is dependent in this organization. Our government itself is very poor and is not able to financially support this organization continually. So the organization must find some way to tackle this problem. This research is done to find out what is the true financial position of the organization in the present. It answers the question of what will be its position in the future. How is the management practice of this organization? What is the basis cause of the problem? And what can be the measure of solving this problem. This research tries to answer this entire problem and tries to show a better insight into this organization.

### **1.3 Historical Background of NEA.**

Since the Rana regime Nepal had electricity but there was not an organized body to manage this electricity generation and distribution system then. The ownership and management of electricity was done by an office named Bijuli Adda before 2019 A.D. the Nepal Electricity Corporation act was commended and management was run by this. In the year 2039 B.S the zonal electricity corporation was established. At that time confusion was created

during the management. So at the year 2041 B.S electricity act names Nepal Electricity Authority Act 2041 B.S was commenced. Under this act the present Nepal Electricity Authority was established through the merger of department of ministry of water resources, Nepal Electricity Corporation and related departments, development boards. The NEA is a semi government institution. The BOD of NEA is established by the government of Nepal. There are eight members on the BOD including minister of water resources as chair person. The head office of NEA is at Durbarmarg Kathmandu. If we look at the corporate structure of NEA there are mainly two sectors namely business groups and corporate offices. In the business group there are five departments namely distribution and customer service, electrification, transmission and system operation, engineering services, generation. In the corporate offices there are four departments namely planning, monitoring and IT, administration, finance, internal audit. The business groups are headed by individual general managers and the corporate offices are headed by individual deputy managing directors. There is one managing director leading all of them.

### **1.3.1 Objectives and Responsibilities of NEA**

Objectives are desired goals and outcomes directed by the vision and mission of an organization which have specific targeted outcomes. According to specified by the NEA Act 2041, there are some objectives of NEA which are listed below:

- To establish single organization that would work in all sector of electricity planning, survey, production, operation, maintenance and distribution of electricity.
- To manage electricity supply by way effective generation. Transmission and distribution to make the supply system reliable and accessible under prevailing law.
- To develop and implement the program for the production, transmission and distribution of electricity supply.
- For the convenience of the people and industry feasible project in economically viable area is developed to ensure the supply by the generation transmission and distribution of electricity.

According to the same law or act there is some responsibility of the organization. These responsibilities are listed below:

- To recommend short term and long term policies to government of Nepal (GON) on matters relating to electricity supply.
- To supply electricity by undertaking the generation transmission and distribution in accordance with the prevailing law.
- To formulate plans and programs for electricity generation, transmission and distribution and other related activities and construct, operate, protect and maintain electricity generation station, substation, distribution lines and related facilities in order to implement its plans and policies.
- To make arrangements for electricity generation, transmission and distribution for industrial and agricultural development as well as for the general public on the basis of techno-economic viability of power generation projects.
- To fix electricity tariff and their charges relating to electricity supply services.
- To carry out necessary research in the field of electricity generation, transmission and distribution.
- To make arrangements for the development of skilled human resources in the areas of electricity, generation, transmission, and distribution through advanced level training and education programs.
- To provide technical guidance and consultancy in matters of related to electricity generation, transmission and distribution.
- To perform other functions in order to accomplish the objectives of the NEA.

### **1.3.2 Present Performance of NEA**

According to the annual report published by the NEA, at present the NEA has the total number of customers of 178684 which is an increase of 10.91% over last fiscal year. There are 34 distribution centers and 37 branch offices spread over 49 districts of the country. It has signed 27 new PPAs in the last year. The annual demand of electricity was recorded to be 4367.13 GWH out of which 3079.69 GWH was contributed by domestic generation. 612.58gwh was imported and 677.86 gwh was managed by load shedding. In the last

year the IPP contributed 959.05 gwh. At present the NEA has 23 of small and large hydropower stations of its own with total installed capacity of 697846 KW, 4 on construction and 8 planned and proposed. Under the private sector there are 22 projects connected to the NEA, 8 under construction with 20 projected which has concluded PPA.

According to the same annual report, In the future the NEA plans to resolve the power crisis by augmentation of generation capacity. In the next 5 years it is set to commission Chameliya, kulekhani-3, upper Trishuli-3A, Upper Trishuli- 3B, and Rahughat projects. In the same time the Budhigandaki (600mw), Upper Seti (127mw) and Nalsyaugad (400mw) storage projects will be launched. It shall be largest equity holder in Upper Tamakoshi that will develop Upper Tamakoshi Project in next 5 years. Chilime Power Company he subsidiary of NEA has planned to complete Sanjen, Upper Sanjen, Rasuaghadi and Middle Bhotekishi Projects. In the next 5 years, it is planned that the private producers are expected to induct at least about 200 MW of capacity in the system. NEA has plans to develop transmission system with adaptation of river basin corridor concept. In the customer care and service area, introduction of computerized billing system, queue management system, computer call center will be done to prepare this. NEA also hopes to revise tariff rate for back logs and implementation of automatic annual tariff revision contingent to consumer price index in future. It also commits to improve its own generation, transmission and distribution costs.

There is also news aired in the media that the government of Nepal has introduced a power emergency period of four and half year. In this time period it is aiming to produce a total of 2500 MW of electricity. Within two years the load shedding is planned to reduce up to 12 hours a day. The thermal plant of 59 MW is planned to run currently. The government is planning to fix the PPA rate for the thermal plant. It is planning to reduce the load shedding up to 10 hours in the year 2068 and up to the falgun of year 2069 it will be 2 hours per day. To carry out all these function a commission will be established soon and the legal procedure will be loosened to produce the electricity. The PPA rate is increased up to 20%. The free electricity to the employees of NEA has been withdrawn. To carry out this function the government is providing 5 billion through finance ministry. About 15 billion is planned to rise from the CIT, NTC and the employee's provident fund.

## **1.4 Statements of Problems:**

As we all know each and every citizen of this country knows that the NEA is suffering from a financial crisis. It is begging for help of the government of Nepal for financial support otherwise the institution will be bankrupt and ultimately collapse. But Nepal can't afford this because this is the only one institution which has sole monopoly over the electricity distribution. Then the question arises that what is the real problem situation inside this organization? Why is there a mass disappointment and grievance over this institution? Why the public has lost faith in this organization? Is the situation is as bad as it looks? Is there any hope left for this organization? What is the real cause of this problem and what can be the solution for this? What is the impact on the organization itself by this situation? How bad is the situation itself? Is there any silver lining in the massive cloud? Are there some strong points also in the entity? What are its financial strengths and what are its weaknesses? All these questions need to be answered and this study is planned to answer some of these questions. Some of the problems are tried to answer in this study. For this particular study the questions which are considered for research are listed below:

- What is the true existing financial position of the organization?
- What is the liquidity, profitability, assets productivity condition of the organization?
- What will be the future position of the organization performance as per the analysis of present condition?
- What conclusions can be drawn from the existing position analysis?

## **1.5 Objectives of the study**

Objectives are research goals which needed to be obtained when the research is completed. Objectives are the sole reason why the research is done so we can say that this is the foundation of the study. Objectives give guidance to the researcher to carry out the research work. That's why like any other research work this research also has some objectives which are used as the basis of collecting and analyzing the found out information. The main objective for this study is listed below:

- To find out the existing financial position of the organization.

- To review and analyze the financial performance of the organization.
- To predict the future financial performance of the organization.
- To provide constructive suggestions and to recommend on the basis of the findings.

## **1.6 Significance of the Study**

This study done on the financial analysis of the Nepal Electricity Authority is very significant and useful study in various areas. By the help of this research other researchers in the similar field can get valuable data and information about this organization which they can use as an input to their study. They can use this report as a reference material and conduct further research in this field. They can learn various new ideas and gain knowledge from this report.

This study will provide valuable prospects and knowledge about this organization to the management, owners, employees, and to the government. They can see the recommendations and findings of this report and use the suggestions provided in this report in their decision making process. The management can improve in various ways such as finance accountancy, human resource, production and operation, marketing and improve in all this areas and make this organization successful by the help of this report. The owners also get some valuable information about the organization which they can use in their own analysis of the performance of the company. The employees will be benefited by this report because they will get proper information which the management tends to hide and be able to actively participate in the decision making and be benefited from this. The government can use this information to make some policy change which can help this organization and ultimately to the whole nation.

This report will be an open ended research report which will be scope for further research in this same field. The phenomenon of financial analysis is very useful in much organization and this study can be done in a wide and diverse basis in each and every sector of the economy. This research will be the small effort to show the importance of this deep and meaningful topic.

## **1.7 Limitations of the Study**

Like many studies done with limited time, resource, skill and knowledge this study is also bound by certain limitations. These limitations are listed below:

- This research is mainly based in secondary data. So the accuracy of the data may be slightly diluted.
- This study is done in only one organization which is the Nepal Electricity Authority.
- This study has taken limited criteria for analysis.
- This study is based on certain assumptions and generalizations.

## **1.8 Organization of the Study.**

This research report is organized in five chapters. The chapters and their contents are shown below:

### **Chapter 1: Introduction**

In this chapter the background of the study, the background of the organization, the statements of the problems, the objectives of the study, the significance of the study, the limitations of the study is shown. The main aim of this chapter is that to give the idea about the study topic and about the organization, the objectives to do this report and to familiarize about the research topic.

### **Chapter 2: Literature Review**

This chapter included about the conceptual and theoretical review about the subject matter to give the thorough knowledge about the subject matter. This chapter also includes the review of previous studies which will provide the point of departure for this report by providing what is done by the previous researcher in this field and what is needed to be done. This provides the research gap which needed to be fulfilled by this research. This chapter also includes the review of related articles which will provide us the expert opinion about the organization, the problem and this research topic.

### **Chapter 3: Research Methodology**

This chapter provides the information about the research design of the study. It also gives insight about the data sources, data collection and analysis tools, various statistical and financial tools used in this report. It also shows the meaning and methods of the analysis tools.

### **Chapter 4: Data Presentation and Analysis**

This is the main body of this research. This chapter presents all the collected data in a systematic and meaningful order. Then the data are analyzed by using various tools such as trend analysis. Regression analysis, correlation analysis, mean, average, standard deviation, etc. then at last the findings of the research is presented in a list clearly.

### **Chapter 5: Summary, Conclusions and Recommendations**

This is the last chapter in this chapter the summary of the research is presented in short for review. Then the conclusion of this study is drawn. In this way our view is shown about the analysis. Then finally some recommendations will be presented on the basis of findings which the related personal can view for their benefit.

## **Chapter 2**

### **Literature Review**

Literature review is the essential part of all studies. It is a way to discover what other researcher in the area of our problem has uncovered. A good review of the literature helps the researcher to develop a thorough understanding and insight into previous research works that relates to the present study. It also helps to eliminate any duplicity in the research work. Literature review establishes a point of departure for future research avoids needless duplications and reveals areas of needed research. Like any scientific research the research must be based on past knowledge, so previous research can't be ignored. In fact the research should be a continuity which links the previous research to the present one. In this particular research, the literature review is done in three areas like the conceptual review, review of the related studies, and review of the related articles.

In the conceptual review we would like to know about subject matter more deeply which means the research topic, its related theory will be described, its meaning, its importance, uses, benefits, limitations, assumptions all are analyzed. In the second part of literature review the review of the related studies is done which shows what works are done by previous researchers., what findings are found out by and what is left undone from this we will be able to extract a research gap which this research is planned to fill .in the third part, the review of the related articles done from this we will be able to know what is the opinion of other researchers and experts and what is their view point in this problem or the research areas and the research questions.

#### **2.1 Conceptual Review**

Financial Analysis can be called as financial statement analysis because the performance of an organization financially can be done by the financial statements. The organized summary of detailed information about financial position and performance of a concern is known as the financial statement. It is prepared at the end of accounting period. The purpose of preparing

financial statements is for the periodical review of the activities of the organization and the results achieved by the organization. It includes profit and loss account and the balance sheet of the organization. These are condensed form of account kept by the accountants of the company.

### **2.1.1 Contents of Financial Statements**

The contents of financial statements include two statements. They are shown as follows:

- a. **Income Statements:** It shows the net result of business operations during an accounting period. It presents summary of revenues, Expenses, net income or net loss of a firm. It measures firm's profitability.
- b. **Balance Sheet:** this is not an account but is a statement of assets and liabilities of a firm at a given date. It summarizes the financial position of a firm. It includes balance not included in the income statement. It contains assets (economic resources owned by enterprise) and liabilities (financial obligations carrying future benefits). Balance sheet includes owner's equity, long term liabilities, current liabilities on liabilities side and fixed assets, current assets, investment and other assets on assets side.

### **2.1.2 Objectives of Financial Statements**

The main objectives to prepare financial statements are the following:

- To know about the profitability situation of an organization.
- To provide information to the different people related to the organization.
- To provide interest and loan pay capacity to the different suppliers of the credit to the company.
- To provide information about economic resources and obligations.

### **2.1.3 Importance of Financial Statements**

Financial statements are useful in many areas. The some of the main importance of financial statements are listed below:

- They are useful in managerial decision making.
- They show the true financial position of an organization.
- They help in getting loans by showing to the creditors and banks.

### **2.1.4 Limitations of Financial Statements:**

Besides various advantages and importance the financial statements have some limitations. These limitations are listed follow:

- They show only the quantitative information and ignore the qualitative information which has a great role in decision making.
- The financial statements ate related to the past which sometimes be irrelevant to the present.
- The information provided by the financial statements can be manipulated by the management.
- The financial statements ignore the price level changes.
- The financial statements only show the situation and identify the problem. It cannot suggest definitive remedies to solve the problems.

### **2.1.5 Financial Statements Analysis**

In order to make financial statements more meaningful, analysis of financial statements is prepared. Analysis of financial statements means a study of relationship among the various financial factors. It is a process of classifying and arranging mass data of financial statements. For obtaining a better understanding of the position of a business and its performance classifying and arranging are needed. The objective of this process is to understand the financial position, profitability, operational efficiency and grown potential of the business.

Financial statement analysis is important to many parties. They can analyze the financial statements in their own way as per their need. Different users of

the financial statements look at the same statement from different angle. Some of the users of financial statements and their view point in the analysis are given below:

- a) **Management:** - By analyzing financial statements the management can draw significant conclusion and determine new policies and procedures for the concern. It helps them in different ways for knowing financial position, profitability and adequacy of capital structure.
- b) **Investors, Shareholders, owners:** - From the financial statement analysis they know about the safety of investment, profitability, and growth potential. They know about the dividend, debt repayment capacity, interest servicing capacity etc.
- c) **Creditors:** - From the financial statement analysis the creditors know about the short term liquidity, capacity to pay the debt in time, capacity to pay the interest in time and all the related information they need to know.
- d) **Employees and Trade Union:** - From the financial statement analysis they get the information about their welfare in the organization such as better bonuses, working condition and job security. From the financial statement analysis they ascertain how much bonus and wages are possible from the profit of the concern.
- e) **Bankers and Lenders:** - these people are interested whether their principles and interest thereon will be paid when due. So they get their analysis by doing ht financial statement analysis.
- f) **Stock Exchange Authorities:** - They analyze the financial statement of any organization to determine the market price of a company share.
- g) **Government:** - The financial statement analysis is helpful to the government to compile the industrial account and national account. They also use this in the assessment of the excise duty, income tax and sales tax levied to the organization.
- h) **Other Parties:** - Beside these parties other parties also use the financial statement analysis. The economists, researchers, trade associates, journalists, consumer organization etc use this type of analysis to fulfill their particular need and the analysis helps their need accordingly.

### **2.1.6 Tools and Techniques of Financial Statement Analysis:**

Financial statement analysis is done by use of different tools and techniques. Some of the important tools which are very commonly used in financial statement analysis are described below:

- a) **Ratio Analysis:** Ratios are the tools to show the relationship between two mathematical figures and make them clear understanding. By calculating the ratios between two financial figures we can draw the conclusion about the ratio by comparing to the past ratios or the ratio of the similar competitive firm or with the industry average with which the particular firm belongs to.
  
- b) **Statement of Changes in Financial Position:** This is also a tool for financial statement analysis. This is a statement which shows the changes in assets, liabilities, owner's equity, between the dates of two balance sheets.
  
- c) **Cash Flow Statement:** this statement shows the cash transaction during fixed period of time. This statement classifies the cash transaction into three group namely operating activities, investment activities and financing activities and find out the cash generated and used in this activities. This statement also shows the cash balance at the beginning and at the end of the period. By analyzing the cash flow statement we can know about the financial efficiency and financial soundness of the organization.

### **2.1.7 Objectives of Financial Statement Analysis:**

The main objectives of financial statement analysis are listed below:

- To know the organizations profitability.
- To know about the financial security and solvency of the organization.
- To know the trend of the financial ratios and to analyze this.
- To ascertain the financial strength of the organization.
- To judge the management efficiency of the organization.

- To compare financial and operating efficiency of different firms and ranks their performance.
- To provide information to the various related parties of the organization.

### **2.1.8 Importance of Financial Statement Analysis**

The financial statement analysis is very important to various related people in various areas. These importances are listed below:

- By the help of financial statement analysis various important decisions are can be made promptly.
- This helps to measure the liquidity and solvency o the organization.
- This analysis is very important to assess the financial performance and operating efficiency of an organization.

### **2.1.9 Limitations of Financial Statement Analysis:**

Beside various uses the financial statement analysis can't cover all areas. So it also has some limitations. These limitations ate listed below:

- It ignores the qualitative side of the elements and tends to focus in the quantitative side of the data.
- This kind of analysis is not free from biasness.
- This analysis ignores the price level changes.
- Due to the various kinds of accounting method used by different organizations there may arise a lack of accuracy in the calculation.
- This method identified the problem only and it fails to provide the remedies to the problems.
- Sometimes this kind of analysis may not be helpful in the inter-firm comparison.

### **2.1.10 Ratio Analysis:**

Ratio is the expression of one figure in terms of another. It is the expression of relationship between the mutually independent figures. Ratio analysis is a technique of analysis and interpretation of financial statement through mathematical expression. To evaluate the different performance of an organization by creating ratios from figures of different accounts as an analysis of financial statements with help of ratios. The data given in financial statements are meaningless and they are unable to communicate anything from the analysis viewpoint. One has to work hard in digging out the required information. Ratio analysis thus helps the different interested parties in studying the heaps of figures given in the financial statements.

The qualitative relationship between two or more items of the financial statements connected with each other is referred as accounting ratio. The accounting ratios can be expressed in terms of pure ratio of proportion, percentages, and rate or times or coefficient etc.

### **2.1.11 Steps in Ratio Analysis**

- a) Selection of relevant data from the financial statements depending upon the objective of analysis.
- b) Calculation of required ratios from the data.
- c) Comparison of calculated ratios with:
  - i. The ratios of same concern over a period of years.
  - ii. The ratios of another firm in same line or better known as competitor ratios.
  - iii. The ratios of projected financial statements.
  - iv. The ratios of industry average.
  - v. One predetermined standard.
  - vi. The ratios between the departments of the same concern assessing either financial position.
- d) Interpretation and evaluation of the ratios.

### **2.1.12 Importance of Ratio Analysis:**

- It is helpful in assessing operating efficiency of the business.

- It is helpful in measuring liquidity position.
- It is helpful in future forecasting.
- It is helpful in decision making.
- It is helpful in taking corrective action.
- It is helpful in comparing inter firm performance.
- It is helpful in communication.
- It is helpful in cost control.

### **2.1.13 Limitations of Ratio Analysis:**

- The ratio analysis has limited use of single ratio.
- The ratios are difficult to interpret.
- The ratio analysis ignores the qualitative factors.
- There is a limitation in the accounting records.
- There can be a misleading due to the accounting procedure.
- There may be a problem of arithmetic window dressing.
- The wrong conclusion can be drawn if the analyst is inexperienced.
- The ratio analysis ignores the price level changes.
- There can be a scope of personal subjective biases while interpretation of the ratios.

### **2.1.14 Classification of the Ratios:**

While doing ratio analysis different kinds of ratios are used. These ratios can be classified into various ways. One way of classification is by their nature. Among them the classified ratios are shown below:

- 1) **Liquidity Ratios:** these ratios measures the ability to meet the short term obligations of the firm, these ratios also measures the capacity of the concern to pay its short term liability. Among the liquidity ratios some of the ratios are defined here below:
  - i) **Current Ratio:** the current ratio shows the relationship between the current assets and current liabilities. It is calculated by dividing current assets buy the current liabilities.

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

Current assets are those assets which can be converted into cash within one year which includes cash in hand, cash at bank, inventories, bills receivables, sundry debtors etc. current liabilities means obligations which are payable within one year which includes bills payable., sundry creditors, outstanding expenses etc.

ii) **Quick Ratio:** quick ratio find out by dividing quick assets by the current liabilities. Quick ratio =  $\frac{\text{quick assets}}{\text{current liabilities}}$  the quick assets are found out by subtracting the amount of stock and prepaid expenses from the current assets.

2) **Leverage Ratios:** This ratio is also known as solvency or capital structure ratio. This ratio helps to judge the long term financial position of a firm. This ratio helps to find out the ability to pay interest regularly and the ability to repay the principal in maturity. There are many ratios in the leverage ratios category. Some of the ratios are presented below for knowledge.

i) **Debt Equity ratio or gearing ratio** =  $\frac{\text{long term debt}}{\text{shareholders equity}}$  or

the another formula is as given:  $\frac{\text{total debt}}{\text{shareholders equity}}$

ii) **Debt to total capital ratio** =  $\frac{\text{long term debt}}{\text{capital employed}}$  or it is

$\frac{\text{total debt}}{\text{capital employed} + \text{current liabilities}}$

iii) **Interest Coverage ratio or debt service ratio or times interest earned** =  $\frac{\text{NPBIT}}{\text{Interest}}$  where NPBIT is the net profit before interest and tax.

iv) **Fixed Coverage Ratio** =  $\frac{\text{NPBIT}}{\text{Fixed Charges}}$  where the fixed charges includes interest, preferred dividend, and the debt payment obligation.

3) **Activity Ratios or Turnover Ratios or Efficiency Ratios:** these kinds of ratios reflect how efficiently the company is managing its resources. In this category of ratios there are many individual ratios. Some of these ratios are given below:

- i. **Inventory Turnover Ratio** =  $\frac{\text{cost of goods sold}}{\text{Average Inventory}}$  or it is  $\frac{\text{sales}}{\text{closing inventory}}$
- ii. **Debtors Turnover Ratio** =  $\frac{\text{Net credit Sales}}{\text{Average Debtors}}$  or it is  $\frac{\text{Sales}}{\text{Closing Debtors}}$
- iii. **Average Collection period** =  $\frac{\text{Debtors} \times 365}{\text{Credit Sales}}$
- iv. **Fixed assets Turnover Ratio** =  $\frac{\text{Net Sales}}{\text{Net Fixed Assets}}$
- v. **Total Assets Turnover Ratio** =  $\frac{\text{Net Sales}}{\text{Total Assets}}$
- vi. **Capital Employed Turnover Ratio** =  $\frac{\text{Net Sales}}{\text{Capital Employed}}$

#### 4) Profitability Ratios

These ratios are used to measure the organizations profitability in terms of various items such as sales assets investment etc. the major profitability ratios are as follows:

- i) **Gross Profit Ratios** =  $\frac{\text{Gross Profit}}{\text{Sales}}$
- ii) **Net Profit Ratio** =  $\frac{\text{Net Profit}}{\text{Sales}}$
- iii) **Operating Ratio** =  $\frac{\text{Operating Expenses}}{\text{Sales}}$
- iv) **Return on Assets** =  $\frac{\text{NPAT}}{\text{Total Assets}}$
- v) **Return on Shareholders' Equity** =  $\frac{\text{NPAT}}{\text{Shareholders Equity}}$
- vi) **Return on Capital Employed** =  $\frac{\text{NPAT}}{\text{Capital Employed}}$

5) **Ratios on the basis of earning performance :** besides all these ratios we have mentioned before, there are some other ratios on the basis of earning performance, these ratios are presented as follows:

- i. EPS (Earning Per Share)

- ii. DPS (Dividend Per Share)
- iii. DPR ( Dividend Payout Ratio)
- iv. DYR ( Dividend Yield Ratio)
- v. PE Ratio ( Price Earnings Ratio)
- vi. EY Ratio ( Earning Yield Ratio)

These are the common ratios used in the calculation of the financial analysis. To give a better judgment these ratios are need to be compared and analyzed. For the analysis basically the following criteria are used:

- Past Performance of the organization itself.
- The performance of other companies in same type of business.

Besides the current ratios there are many other ratios used for different types of institutions as per their needs. There are all different sets of ratios for the purpose of management performance analysis. The management performance is reviewed by the review of different factors such as productivity, profitability, activity, stability, and the growth possibility. These ratios are also evaluated by own ratios of industry average or with the same business nature of other companies. Mainly the ratios used for the measurement of these ratios are given as follows:

### **1. Ratios to Measure Productivity:**

Productivity means how efficiently the firm's human resources are utilized to generate net sales. The common ratios to measure the productivity are given as follows:

- i. Sales Per Employee =  $\frac{\text{Net Sales}}{\text{No.of Employees}}$
- ii. Net Added Value Per Employees =  $\frac{\text{Total Added Value}}{\text{No.of Employees}}$
- iii. Labor Equipment Ratio =  $\frac{\text{Net Fixed Assets}}{\text{No.of Employees}}$
- iv. Wage Distribution Ratio =  $\frac{\text{Total Wages}}{\text{Total Added Value}}$
- v. Wage Base =  $\frac{\text{Total Wages}}{\text{NO.of Employees}}$

## 2. Ratios to Measure the Profitability.

While analyzing the management performance the profitability of the organization also becomes important. So the common ratios to measure the profitability are as follows:

- i. Total Capital Profit Ratio =  $\frac{\text{Net Profit}}{\text{Total Capital}}$
- ii. Sales to Gross Profit Ratio =  $\frac{\text{Gross Profit}}{\text{Net Sales}}$
- iii. Net Profit to Sales Ratio =  $\frac{\text{Net Profit}}{\text{Net Sales}}$
- iv. Sales to Operating Profit Ratio =  $\frac{\text{Operating Profit}}{\text{Net Sales}}$
- v. Owned Capital to Net Profit Ratio =  $\frac{\text{Net Profit}}{\text{Net Worth}}$
- vi. Sales to Administration and Selling Expenses Ratio =  $\frac{\text{Administration and Selling Expenses}}{\text{Sales}}$

## 3. Ratios Measures The Activity:

The management performance on the basis of the activity is measured by the following ratios:

- i. Total Capital Turnover Ratio =  $\frac{\text{Sales}}{\text{Permanent Capital}}$
- ii. Current Assets Turnover Ratio =  $\frac{\text{Sales}}{\text{Current Assets}}$
- iii. Inventory Turnover Ratio =  $\frac{\text{Sales}}{\text{Inventory}}$
- iv. Account Receivables Turnover Ratio =  $\frac{\text{Sales}}{\text{Account Recievables}}$
- v. Fixed Assets Turnover Ratio =  $\frac{\text{Sales}}{\text{Net Fixed Assets}}$

## 4. Ratios to Measure the Stability of the Organization.

The stability is also one of the tools to measure the management performance. So the common ratios used to measure the stability of the organization are as follows:

- i. Interest Expenses Ratio =  $\frac{\text{Interest Expenses}}{\text{Sales}}$

- ii. Current Ratio =  $\frac{\text{Current Assets}}{\text{Current Liabilities}}$
- iii. Quick Ratio =  $\frac{\text{Quick Assets}}{\text{Current Liabilities}}$
- iv. Owned Capital Ratio =  $\frac{\text{Owners Equity}}{\text{Permanent Capital}}$
- v. Ratio of Fixed Assets and Long term Capital =  $\frac{\text{Net Fixed Assets}}{\text{Permanent Capital}}$

### 5. Ratios to Measure the Growth Possibility of the Organization.

The organization needs to grow in order to survive continuously in the long run. So the management performance also depends of the organizations possibility to grow and expand in the future. The main ratios used to measure the growth possibility are given as follows:

- i. Sales Growth Rate =  $\frac{\text{Curent Years Net Sales}}{\text{Previous Years Net Sales}}$
- ii. Added Value Growth Rate =  $\frac{\text{Current Year's Total Value Added}}{\text{Previous year's Total Value Added}}$
- iii. Labor Strength Growth Rate =  $\frac{\text{Current Year's Total No.of Employees}}{\text{Previous Year's Total No.of Employees}}$
- iv. Total Capital Growth Rate =  $\frac{\text{Currenr Year's TotalCapital}}{\text{Previous Year's Total Capotal}}$
- v. Net Profit Increase Rate =  $\frac{\text{Current Year's Net Profit}}{\text{Previous Year's Net Profit}}$

Besides these the ratio analysis is also done on the behalf of prospective lenders and investors. They appraise the liquidity position, profitability position, debt equity position, and growth in retained earnings. The major ratios used are EPS, DPS, Intrinsic value of Share, etc

#### 2.1.15 Common Size Analysis

Just like the ratio analysis the common size analysis of the e organization is also used to do the financial analysis of an organization. For this the common size balance sheet and the common size income statement is prepared. The common size balance sheet is prepared by converting all items of the balance sheet into the percentages of the e total assets. The common size income statement is prepared by converting all items of the income statement in the percentages of the sales revenue. Then the figures over a period of years are compared and find out the trend of the items in basis of

its contribution to the total figures. Then it becomes easier to analyze the financial position of those figures which the ratio analysis tends to forget.

## **2.2 Review of Previous Studies**

In this topic of financial analysis of Nepal Electricity Authority and on this organization itself there are many studies are done in past. The topic of financial analysis is not new to the research field. Many people have conducted research work in this topic in many organizations. So while conducting this research some of these works are consulted for our reference. They help in providing guidelines in conducting our research.

Bishnu Gaire, a student of Nepal Commerce Campus has submitted a thesis named 'A study on Financial Position of Nepal Electricity Authority' in the year 2009. He has done the analysis of liquidity ratios leverage ratios, Profitability ratios, turnover ratios in his research report. To analyze the data he has used different statistical tools such as mean, standard deviation, correlation, regression of the collected data.

From the analysis of various data he has concluded that the liquidity position of the organization is not satisfactory. The company is losing receivables management quality. The account receivable collection period is not very satisfactory. The total assets turnover rate whereas in the increasing rate but this is also not satisfactory. There are heavy losses into the organization. There is inefficient utilization of the assets of the organization. He has presented the findings of the report as follows;

- The current ratio is not satisfactory, it is in decreasing trend.
- The inventory turnover is satisfactory.
- The debtors turnover is satisfactory earlier but it is in decreasing trend afterwards. There is a long account collection period.
- The fixed assets turnover is not satisfactory.
- There is a large portion of debt in the capital structure.
- The profitability position of the organization is not satisfactory.
- There is a positive correlation between the sales and the NPAT.

By analyzing the various data he has provided some recommendations to correct the situation. The recommendations that he provided are as follows:

- The organization need to adjust its tariff rates.
- There should be autonomy in the management for doing the day to day work.
- The organization should use management information system.
- There should be participative management policy.
- The organization should conduct a SWOT analysis.
- The government policy should be favorable.

He has also suggested an alternative financing strategy which includes the analysis of present financing strategy followed by the search and evaluation of available fund from capital and selection of the best alternative fund.

He has also presented a strategy for collecting outstanding bills. For that he has suggested the following process:

- Identify total amount of outstanding bills.
- Then the different sectors of outstanding bills needed to be classified.
- Then the most sensitive sector of the outstanding bills needed to be identified.
- Then the organization should prepare the appropriate policy. The policies can be:
  - Indirect collection procedure.
  - Adequate budge.
  - Discount, rebates, the use of prepaid methods.
  - The use of mobile collection center.
  - Immediate action of line disconnection.
  - The process of blacklisting.

Another student of the Nepal Commerce Campus named Kaushila Pokharel has conducted a research in the topic and submitted a thesis named Financial Performance Analysis of Nepal Electricity Authority in the year 2009. She has conducted the liquidity analysis, turnover analysis, profitability analysis, debt management analysis and found out the major findings of these things such as follows:

- In the organization there is excess use of current assets.
- The total assets of the organization are not used in the productive sectors.
- The debt utilization of the organization is not satisfactory.

- There is an upgrading condition of cash utilization.
- The organization has taken loan to borrow minimum cash balance.
- The organization has not maintained the periodic performance reports.
- There is a situation of continuous loss in the organization.

To improve the above situation she has presented some advices as recommendations. They are as follows:

- The organization should improve the liquidity situation.
- There should of management of operating as well as non-operating exOpenses.
- The organization should need to develop the efficient system of revenue collection.
- There should be a proper management of quick assets.
- The organization should focus in the selection of proper projects.
- There should be the joint effort of public and private participation to improve the situation of this organization.

Another student of Nepal Commerce Campus named Sanjit Kumar Jha has conducted a thesis in the title of ‘Profitability Analysis of Nepal Public Utility Enterprises with Reference to Nepal Electricity Authority, Nepal Water Supply Corporation and Nepal Telecom in the year 2008. He has conducted different profitability ratios such as net profit margin, operating profit ratio, return on assets, return on equity, average rate of return, net present value etc.

To analyze the found out ratios he has used the tool of regression analysis and he has presented some findings. Some of these findings are presents below:

- Nepal Electricity Authority has poor operating profit, the net profit margin is highly fluctuating and it is negative, the operating profit ratios are also fluctuating. The return on assets is poor. There is a nominal utilization of assets which is found out to be only 2.36%; the return on shareholders’ equity is negative. The net present value of the organization is miserable and in a critical condition. The profitability is negative.

- There is a positive correlation in between sales and the net profit after tax of the Nepal Electricity Authority.

After drawing this conclusion he has presented some advices as recommendations. These recommendations are presented below:

- There need to be an efficient utilization of the assets of the organization.
- There is a need to increase in the sales. The debt collection procedure should be fast; this should be done without increasing the price of the sales.
- There is a need of SWOT analysis and the organization should prepare an action plan for the future.
- There is a need to increase the human resources management system.
- The organization should be free from the government influence, and there should be the implementation of participatory management system.

Another researcher named Rishma Kayastha, a student of Nepal Commerce Campus has conducted a thesis work named 'A Study on Consumer Satisfaction of Nepal Electricity Authority' in the year 2010. In this study she has analyzed the secondary data and analyzed the sales, revenue, profit and customers. In fact the main research was the primary survey of the level of customer satisfaction of the organization; she has also analyzed the financial statements of the organization to know about actual condition of the organization.

In her report she has analyzed the data and find out these major findings:

- There are twelve types of customers in the NEA.
- The number of domestic customers is in the increasing trend.
- 1.74% customers using service are in the age group below 20 years. 56.14% are in the group of 20 to 40. 35.09% are in the group of 41 to 60. 7.02% are above 60.
- 2.63% if the customers are highly satisfied. 40.35% are satisfied. 14.91% are undecided. 23.68% are unsatisfied and 18.42% are very unsatisfied.

She has concluded in her report that the main reason for the poor financial and profitability performance of the organization is the unsatisfactory customer satisfaction of the organization.

In that research she has given some recommendations also for improving the condition. These recommendations are listed below:

- The customers of the organization should be analyzed on the basis of their nature and profitability.
- The Nepal Electricity Authority should consider developing quick service system. There should be accessible office, the plans and policies relating to the customers should be developed. The power generation capacity should be increased. The problem of load shedding should be decreased; the employees of the organization should be more efficient etc.

Likewise many other research works has been done in this area. Suraj Shrestha (2010) in his thesis titled, 'A study on a case study on Cash Flow Analysis of Nepal Electricity Authority' has concluded that the Nepal Electricity Authority has maintained a positive cash from operating activities but it is fluctuating. The organization is holding cash inconsistently and not utilizing it properly.

He has found out that the unstable government policy and the excessive political interference affect the organization badly. The cash flow adequacy ratio indicated that it was able to generate cash inflow to acquire assets to some extent but it was not satisfactory due to up and down of such ratio.

Again other researcher named Dipak Khatri, in his thesis titled 'A Study on Revenue Planning and Cash Management in Nepal Electricity Authority' has found out that the actual sales achievement is lower than the budgeted sales targets. There is ineffective implementation of budget. 15% of the loss is due to the technical reasons. 10% of the non-technical loss is due to the faulty meters and unaccountable public installation such as temple and street lights. The organization is unable to account its own consumption. There is a poor solvency position of the organization. There is inefficiency in the management of the fixed assets.

Another student from the TU Central Department named Narendra Kandel has conducted a research work of the same organization in the year 2001 and

presented a thesis named “Profit Planning in Nepalese Utility Concern: a case study of Nepal Electricity Authority. He has done the sales budget, the production budget, the overhead budget, the cash budget the balance sheet the profit and loss account etc. in this analysis he has also conducted the analysis of the financial performance of the Nepal Electricity Authority. In that analysis he has conducted the ratio analysis and covered the liquidity ratios such as the current ratio, the quick ratios the profitability ratios like the return on assets and return on the net worth. He has also conducted the turnover ratio analysis. By doing this entire works he has find out the following findings:

- The organization has no effective communication mechanism.
- There is negligible amount of lower level participation in the organization
- There is not any systematic approach
- The power loss situation is very acute. It is about 24%.
- The organization pays a large amount of its earnings as interest.
- There is no separate responsibility center for costing.
- The organization fails to maintain periodic performance report.
- There is a lack of training and skill orientation for employees.
- There is lack of coordination between responsibility centers.

After findings such case in that organization he has recommended the following things to improve the condition of the organization:

- The organization should install a good MIS system
- The organization should install a revenue collection center.
- The organization should emphasize in internal funding.
- It should be encouraged to control cost.
- The political interference and power pressure should be minimized.
- The organization should prepare overhead budget systematically and in a classified manner.
- It should increase its operating capacity of its projects
- The organization should generate the power within its country.
- It should apply CVP analysis.
- The variance analysis should be used.
- There should be the communication of policy within employees nad there should be better coordination.

Just like the previous student another student of the TU Central Department named Diwakar Lal Karn also has conducted a research work of the same organization in the year 2004 and presented a thesis named Profit Planning and Control: A case study of Nepal Electricity Authority. He has done the sales, production, cash budget and the balance sheet and P/L account. In this same report he has also conducted the financial performance analysis of the organization by applying the tool of the ratio analysis. In this analysis he has seen the profitability ratios, the turnover ratios and the liquidity ratios etc. by doing all this ratio analysis he has found out the following findings. They are listed below:

- The actual sales of the organization is rather constant and it is more than the budgeted sales.
- There is an absence of the overhead budget.
- The net profit ratio is not satisfactory.
- The working capital ratio is fluctuating.
- The quick ratio is unsatisfactory.
- There is not a system of maintaining a periodic performance report.
- There is no practice of segregation of cost into fixed and variable.

By doing his analysis of the collected data and on the basis of the findings of the research, he has advised some recommendations. These recommendations are listed below:

- The organization should reduce its electricity loss.
- The organization should give more emphasis on the profitable sector.
- There should be the efficient utilization of the fixed assets.
- The organization should emphasize the internal financing.
- It should develop the overhead budget in well classified and scientific way.
- The organization should use its full capacity.
- The organization should try to reduce its power loss situation.
- The organization should focus in rural electrification.

Similarly another student of Nepal Commerce Campus named Pratima Aryal has conducted a research work in the year 2008 and presented a thesis named “A Comparative Ratio Analysis of Public Utility Sectors with Reference to Nepal Electricity Authority and Kathmandu Upatyaka Khanepani Limited”.

She has conducted the liquidity, leverage, turnover, profitability, ratio analysis and used the tools of mean, standard deviation, coefficient of variation, correlation, and regression analysis between sales and Net Profit after Tax, Sales and Total assets, Total debt and Shareholders Equity, Current assets and Current liabilities. The major findings of her report are as follows:

- The current ratio is below standard.
- The quick ratio is half as much as standard.
- The debt equity ratio is satisfactory.
- The debt to total capital ratio is satisfactory.
- The interest coverage ratio is not satisfactory.
- The inventory turnover is sound.
- The debtors turnover ratio is satisfactory.
- The fixed assets turnover, total assets turnover, capital employed turnover is not good.
- The operating profit ratio is fluctuating every year.
- The net profit ratio is bad.
- The return on assets and the return on shareholders' equity is poor and in negative figure.

By doing her analysis and study she has given these recommendations on her report:

- The assets of the organization need to be efficiently utilized.
- There should be the adaptation of the cost control system.
- The SWOT analysis of the organization should be done.
- The action plan needs to be prepared for the management.
- The human resource management should be improved.

### **2.3 Review of Related Articles**

In relation to this research topic there are many articles published in various papers and journals. They provide us the insight on the research topic and give us valuable information on. Some of the articles are reviewed for this research purpose. The major findings of this research are presented here.

A research work named “ Performance of Public Enterprises in Nepal : A Managerial Analysis” is done by the joint Endeavour of the then HMG/N ,CCC and ISS, as a part of research project entitled “ Performance of Public Enterprises in Asia” sponsored by the international Development Research Center, Ottawa, Canada and the HMG/N conducted in the year 1975. This report has found out that the main criteria for providing financial assistance by HMG/N was not bases on normal corporate structure and needs but it was based in crisis. The policy of adequate working capital had been instrumental in bringing about a circular consolation of property in many public enterprises. The research has also points out that the absence of sufficient equity cushions has led to the poor performance of many public enterprises.

Another research was made out by the management consultant company named “Economy and Management Study of Publish Enterprises in Nepal”. This report has concluded that the assets management in general and current assets management in particular were the weakest point in Nepalese Public enterprises. This report has also pointed out that lack of operational objectives, applications of long run planning, use of modern management tools, capital budgeting and efforts towards cost control has not been made so far.

A researcher names R.J Hugus has published a report names “Toward a Power Sector Strategy”” in the year 1998. The report pointed out that the existing power in Nepal is small fragment and unable to meet the existing demand of electricity. It also pointed out that the lack of abundant power supply aggravates the energy problems that are characterized by a high usage of fuel wood and disappearance of forest cover, growing dependency on imported hydrocarbons which is exercising pressure in the countries balance of payment situation. This report suggested that the development of hydroelectricity resources could mitigate the energy problems. It will contribute to industrial expansion and increase export by direct sales of energy or by selective development for energy intensive industries. There is obvious need to develop hydroelectricity resources. The constraints of these developments are the need of high capital resources relative to the resources available is the main. The other constraints are lack of information for evaluation of alternative courses etc.

The Nepal Hydropower Strategy and Option prepared for the Nepal Government in the year 2002 by the PEs agency for the international

development pointed out that although the country is well endowed with great biomass and hydropower resources, recently the pace 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 agricultural growth likely to be constrained due to the lack of energy for growth likely to be constrained due to the lack of energy for lift, irrigation, and processing of agricultural commodities.

## **2.4 Research Gap**

As we all see that the previous research in this same topic was focusing on the ratio analysis with the help of few ratios namely the e liquidity ratios and the leverage ratio, turnover ratios and the profitability ratios. The previous research has missed out on the growth possibility analysis with the help of certain ratios. This analysis of the organization is very important because the organization should have a proper possibility to expand in order to survive in the long run. If it does not have this possibility then the sound present financial condition also becomes useless. So this research tries to focus in this area as well.

The area which the previous report has missed out is that they haven't done the common size analysis of the organization. This analysis covers the analysis and the trend of those items in the balance sheet which are untouched by the ratio analysis. This report is covering this aspect as well.

Even in the ratio analysis this research focuses in the latest ratios and analyzes each and every ratio separately. This ratio is presented in a separate table and figures are shown for all of the e ratios.

## **Chapter 3**

### **Research Methodology**

In this chapter it is tried to describe the research methodology used to find out the data, to analyze, to present the data and to calculate the data and to conclude the report. Research methodology means the method of conducting a research work. It includes the process applied in planning the research, the method in actual obtaining the data and the field work, the process of analyzing the data and getting the conclusion.

#### **3.1 Research Design**

The research design used for this study is the descriptive research design. Descriptive research design involves the systematic collection and presentation of data to give a clear picture of a particular situation. These studies attempt to obtain a complete and accurate description of a situation. So, in this research the related data are systematically collected and presented to give a clear picture. This particular research can also be called as historical research because it contains the process of collecting evaluating, verifying and systematically synthesizing past evidence systematically and objectively to reach a conclusion. Because of the fact that this study is a historical research the data are from generally secondary sources.

#### **3.2 Sources of Data**

The sources of data in this research are from the annual reports published by the organization. The other sources of data are from the magazines newspapers articles, journals, economic surveys, etc some of the unpublished information are obtained from the employees of the organization.

### 3.3 Data Presentation and Analysis method

The collected data systematically coded and then it is tabulated and presented in a clear way. The tabulated data are then analyzed and presented in graphical form to make it more understandable. The various graphs used are bar diagrams, trend figure, pie diagrams etc. to analyze the data various mathematical and statistical tools are used. They are mean, averages, percentages, Standard deviation etc.

### 3.4 Statistical and Financial Tools Used

In this research report various statistical and financial tools are used to analyze the data and draw the conclusion. The tools used in this report are described as follows:

#### A. Arithmetic Mean

Arithmetic mean or simply mean of a set of observation is the sum of all the observations divided by the number of observations. It is also known as arithmetic average. The general formula to find out the arithmetic average is given below:

$$\text{Mean } (\bar{X}) = \frac{X_1 + X_2 + X_3 + \dots + X_n}{n}$$
$$= \frac{\sum X}{n}$$

Where, X = Values of the variables

n = number of observations

#### B. Standard Deviation

This is the absolute measure of dispersion. It is used to measure the variation. This shows the consistency of the data. It is defined as the positive square root of the mean of the square of the deviation taken from the arithmetic mean. It is denoted by  $\sigma$ . The formula to calculate the standard deviation is given below:

$$\sigma = \sqrt{\frac{\sum (X - \bar{X})^2}{n}}$$

Where, X = Variate values

$\bar{X}$  = Mean of the variate values

n = number of observations

### **C. Coefficient of Variation**

It is the relative measure of dispersion based on the standard deviation multiplied by 100. The formula to calculate the coefficient of variation is given as follows:

$$\text{C.V.} = \frac{\sigma}{\bar{X}}$$

Where,  $\sigma$  = standard deviation

$\bar{X}$  = mean

The coefficient of variation is independent to unit. Two distributions can bitterly be compared with the help of coefficient of variation for their variability. Less the C.V, more will be the uniformity, consistency etc. and more the C.V less will be the uniformity, consistency etc.

### **D. Trend Analysis**

Trend analysis is a simple way of calculating the pattern of the certain historical data and uses it to analyze the data and to forecast the future with the help of this. This is a simple tool of time series analysis. In the time series analysis the secular trend is one of the most commonly used tools. A series is form with a set of statistical tools arranged in accordance with their time of occurrence is said to be a time series. It shows the relationship between two variables one being the time. It is defined by the functional relationship  $y = f(t)$ . Where y is the value of the variable under consideration and t is time may be yearly, monthly, weekly, daily, etc.

Time series is helpful to understand past behavior, to know what changes took place in the past and what are their causes and circumstances. It is helpful in future forecasting, evaluating the present accomplishment by comparing expected performance and analyze causes of such variation.

The widely used and most commonly used method to describe the trend is the method of least square. The trend line is fitted in the data is known as the line of best fit. It is represented by,  $Y = a + bX$ ,

Where Y= dependent variable,

X= independent variable that is time,

a= Y intercept'

b= slope of trend line

To determine the values of a and b, we can solve two equations. They are as follows:

$$\sum Y = na + b\sum X \dots\dots\dots (1)$$

$$\sum XY = a\sum X + b\sum X^2 \dots\dots\dots (2)$$

Where, n= number of periods.

### **E. Regression Analysis**

Regression analysis is a method to find out the relationship between two variables. We can find out the effect of the depended variable on the independent variable by the help of this. We can also find out the future effect on the dependent variable by the regression equation if we have the forecasted independent variable. The literal meaning of regression is stepping back. This analysis is used t determine the strength of relationship between the two variables. B y this analysis we can estimate or predict the value of one variable when the value of other variable is known. Unknown variable is known as dependent variable, known variable is known as independent variable.

To do the regression analysis we have to have a line of regression. The line of regression of y on x when y is known variable and x is unknown variable is given by  $Y = a + bX$

Where, a and b are the parameters to determine the regression line. These two can be obtains by solving two equations by the technique of least square:

$$\sum Y = na + b\sum X \dots\dots\dots (1)$$

$$\sum XY = a\sum X + b\sum X^2 \dots\dots\dots (2)$$

In the similar way the equation of X on Y is also can be found out.

## F. Correlation Analysis

Correlation analysis shows the relationship between the two variables and find out that if there is any relationship between the two. The correlation can be both negative and positive. The main idea is to see the link between the two phenomenon. The two variables are said to have correlation, when they are so related that the change in the value of one variable is accompanied by the change on value of other.

Correlation coefficient summarizes in one figure the degree and direction of movement. It only helps in determining the extent to which the two variables are correlated but it does not tell us about cause and effect relationship means that it doesn't say which variable is cause and which the effect is. To measure the correlation coefficient there are different ways. One is the Karl Pearson's correlation coefficient. It is denoted by  $r_{xy}$  or simply  $r$ .

The formula for  $r$  is 
$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{\{n\sum x^2 - (\sum x)^2\}\{n\sum y^2 - (\sum y)^2\}}}$$

This formula is known as the product movement formula. There are other formulas also but this is the most common one.

The correlation analysis has some properties such as the coefficient lies between -1 to +1. To interpret the correlation we use some rules such as follows:

- If  $r = 1$ , then there perfect positive correlation between the two variables.
- If  $r = -1$ , then there is perfect negative correlation between the two variables.
- If  $r = 0$ , then the variables are uncorrelated.
- The more the value of  $r$  is nearer to the 1, the more relationship between the two variables.
- The more the value of  $r$  is nearer to the 0, the lesser the relationship between the two variables.

## **G. Ratio Analysis**

Ratio analysis is a financial tool to find out the relationship between two figures. It is a mathematical expression of the relationship between the two figures. Mere figures cannot convey any message, so we calculate the ratio between the two for a better understanding. Ratios can be expressed as pure ratios, percentages, and decimal or times. There are many ratios used in this report. The description and explanation of all are given in the chapter of literature review.

## Chapter 4

### Data Presentation and Analysis

For the financial analysis of the NEA, the major tools used are the ratio analysis and common size analysis. In the ratio analysis different liquidity ratios, profitability ratios, activity ratios, leverage ratios and the growth possibility ratios are analyzed to give a clear picture of the true financial position and performance of the organization. In the common size analysis the common size balance sheet and the common size income statement is prepared and the analysis is done to see the trend of the figures of the balance sheet other than covered by the ratio analysis. To further analyze the ratios the correlation between the two ratios are find out and analyzed. The sales forecast and the regression between the net profit and sales is also found out in the analysis.

#### 4.1 Liquidity Position of the Organization

Liquidity means the ability to meet short-term obligations. These ratios find out the short term solvency position of the organization. Different liquidity ratios used in this report are current ratios, quick ratios or acid-test ratios etc.

##### 4.1.1 Current Ratio of NEA

The current ratio of NEA is found out by dividing the current assets by the current liabilities.

**Table 4.1 Current Ratio of NEA (rupees in millions)**

Year	Current Assets	Current liabilities	Current ratio(CA/CL)
2001	6313	6113	1.03:1
2002	7322	10096	0.725:1
2003	7690	12347	0.623:1
2004	7883	14538	0.542:1
2005	8491	17466	0.486:1
2006	8995	19854	0.453:1
2007	10322	22812	0.452:1
2008	11178	27567	0.405:1
2009	11233	32552	0.345:1
2010	12601	38937	0.324:1

Source: Annual report, NEA

From the above data we can calculate the mean and the standard deviation and the coefficient of variation of the current ratio. These calculations are made by using the formula of these respective tools which are shown in the previous chapter of this report. This and all the calculations of the mean, the standard deviation and the coefficient of variation throughout this research report is done in the similar way. The calculated figures are as follows:

Mean of the current ratio  $(\bar{X}) = 0.539$

Standard deviation of the current ratio  $(\sigma) = 0.201$

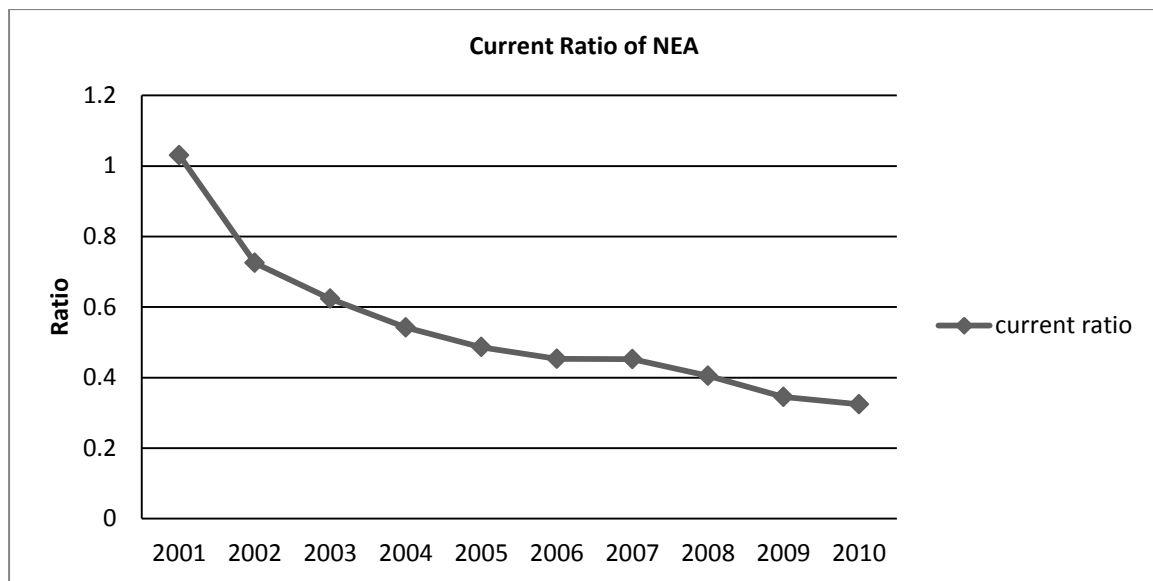
Coefficient of Variation of the current ratio (C.V) = 0.379 or 37.9%

In the above table we can see that the current ratio is less than one in all the years except in the year of 2001. It is always better to have a ratio greater than one. The amount of current assets is less than current liabilities in almost all years which is a risky situation.

The liquidity position of NEA is very poor. It shows that the organization should have investment on more current assets in order to sustain because there might come situation where it won't be able to pay its short term obligation. The standard deviation of the current ratio is 0.201 and the coefficient of variation is 37.0% which means that this ratio is relatively consistent throughout the years.

This ratio can be illustrated as a trend line with the help of the following figure.

**Figure 4.1 Current Ratio of NEA**



In the above figure we can see that the current ratio of the NEA is in a decreasing trend. It is seen highest in the year 2001 and the lowest value is in the year 2010. The value has steeply dropped in the beginning and in the middle years it is slowly and consistently dropping. There is a slightly increase in the year 2007 as compared to the year 2006 but afterwards it has continued to drop.

#### **4.1.2 Quick Ratio of NEA**

The quick ratio is found out by dividing quick assets by the current liabilities. Quick assets mean current assets other than stock and prepaid expenses. The position of quick ratio of the organization is shown by the help of the following table:

**Table 4.2 Quick Ratio of NEA (rupees in millions)**

Year	Current Assets	Inventories	Prepaid Expenses	Quick Assets	Current Liabilities	Quick Ratio (QA/CL)
2001	6313	960	2634	2719	6113	0.445:1
2002	7322	1058	3314	2950	10096	0.292:1
2003	7690	1017	2216	4457	12347	0.361:1
2004	7883	1048	2063	4772	14538	0.328:1
2005	8491	1372	2098	5021	17466	0.287:1
2006	8995	1354	2293	5348	19854	0.269:1
2007	10322	1498	2225	6599	22812	0.289:1
2008	11178	1800	2319	7059	27567	0.256:1
2009	11233	2159	2495	6579	32552	0.202:1
2010	12601	2635	2789	7177	38937	0.184:1

Source: Annual report NEA

By using the above table we can calculate the mean, standard deviation, and the coefficient of variation of the quick ratio of the organization. The calculated figures are as follows:

Mean of the quick ratio ( $\bar{X}$ ) = 0.292

Standard deviation of the quick ratio ( $\sigma$ ) = 0.074

Coefficient of Variation of the quick ratio (C.V) = 0.252 or 25.2%

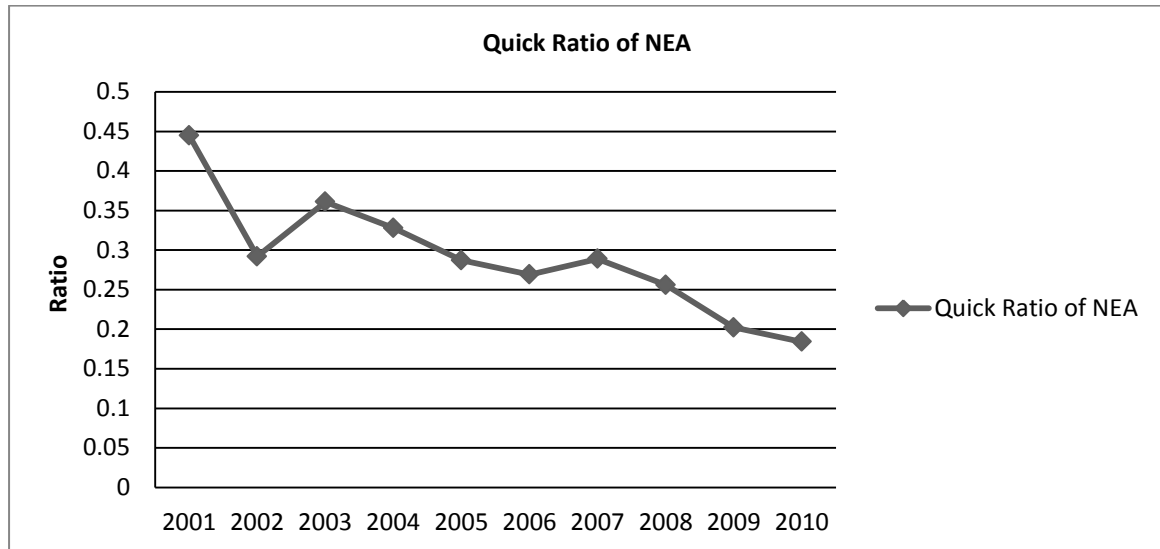
From the above table we can see that the quick ratio is highest at 2001 and it is gradually decreasing since then. The highest ratio in the year 2001 is also 0.445:1. Which is also lower than our ideal quick ratio of 1: 1/.this shows a bad condition on the liquidity and solvency position. The company can at any time be insolvent.

By the analysis of the mean ratio we can find out that the average ratio is way below the standard showing a relatively bad condition of the organizational cash and the liquidity position and the standard deviation and the coefficient of variation shows that the trend is relatively consistent.

The situation of weak liquidity condition can be solved by the investment in the current assets. The use of tight budgeting and liquidity management also can help to pass this condition.

The position of quick ratio of the organization also can be presented in a figure the figure is shown as follows:

**Figure 4.2 Quick Ratio of NEA**



In the above figure we can see that the quick ratio of the NEA shows a high fluctuation in the figures. But in general it has decreased from the highest ratio in the year 2001 to the year 2010. After a sharp drop in the year 2002 from the previous year the ratio has an improvement in the year 2003 but it is not at bog as the year 2001. Then the ratio continues to decrease rather than the year 2007 which shows a minimal improvement. The lowest ratio is in the year 2010. This shows that the future of this organization as per this ratio is bad.

#### **4.2 Leverage Ratios of NEA**

The leverage ratios are calculated to judge the long term financial position of a firm. These ratios measure the enterprises ability to pay the interest regularly and to repay the principle on maturity. To find out the leverage position of the Nepal Electricity Authority, the debt equity ratio, debt to total capital ratio and the interest coverage ratio are calculated and the actual situation of leverage risk of the organization is found out and a conclusion is drawn from this.

### 4.2.1 Debt Equity Ratio of NEA

The debt equity ratio is found out by dividing long term debt by the shareholders equity.

$$\text{Debt Equity Ratio} = \frac{\text{long term debt}}{\text{shareholders equity}}$$

NEA has secured long term loan and deferred tax in the balance sheet. This is used as long term debt to calculate the ratio. The share capital, reserve and accumulated profit is taken as the shareholders equity in this calculation. The calculation of the debt equity ratio is shown in the following table:

**Table 4.3 Debt Equity Ratio of NEA (rupees in millions)**

year	Shareholders' Equity	Long Term Debt	Debt Equity Ratio( LTD/SHE)
2001	16986	36707	2.161:1
2002	17297	37325	2.158:1
2003	15707	39637	2.524:1
2004	15218	41103	2.701:1
2005	15867	44537	2.807:1
2006	17568	46487	2.646:1
2007	20731	48464	2.338:1
2008	21032	52159	2.480:1
2009	21059	54481	2.587:1
2010	20002	61074	3.053:1

Source: Annual report, NEA and appendices 1 and 2

From the above table we can see that the debt equity ratio is more than double in the year 2001. Whereas it continues to increase till the year 2010. By now the ratio has triples. This is a highly risky situation. The financing is majorly done by the loan capital. The fund invested in the business is provided by the outsiders. This also indicates a margin of safety for the owners. But this ratio can lead to the bankruptcy to the organization if the organization fails to pay the capital and interest of the borrowed fund.

To improve the situation the organization should focus in utilizing the internal source of capital. Although there is a margin of safety to the shareholders this heavy utilization of the borrowed capital is very risky situation.

From the above table we can calculate the mean, standard deviation and the coefficient of variation of the debt equity ratio. The calculated figures are shown as follows:

Mean of the debt equity ratio  $(\bar{X}) = 2.546$

Standard deviation of the debt equity ratio  $(\sigma) = 0.266$

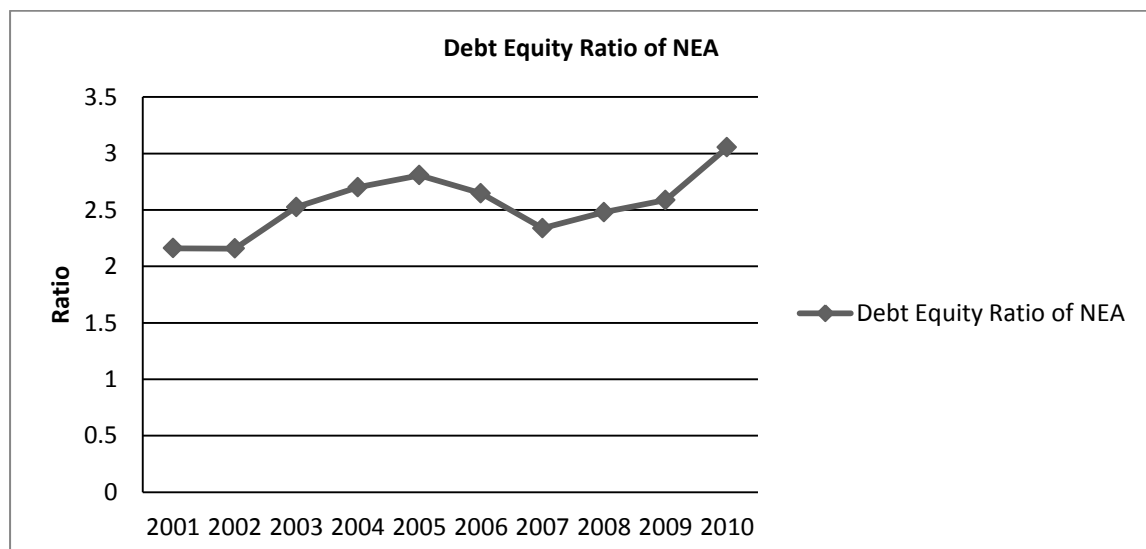
Coefficient of variation of the debt equity ratio  $(C.V) = 0.104$

As we can see that the mean ratio is very high throughout the whole years. This shows that the organization is not focusing in the improvement of the situation. The standard deviation and the coefficient of variation show that the tendency is quite consistent in the whole years.

To improve this situation the organization should focus on repayment of the old debt and interest and should focus in the generation and mobilization of the internal capitalization. For this the organization should earn profit and for this the organization should focus in the increment of sales revenue and reduction in the cost structure of the organization.

The situation of the debt equity ratio of the organization can be clearly seen in the following figure:

**Figure 4.3 Debt Equity Ratio of NEA**



The above figure shows that the debt equity ratio of the NEA is in an increasing trend. But the amount of increment is not large. The lowest ratio is in the year 2001 and the ratio is same in the next year. Afterwards it has

increased and continues to increase up to the year 2005 then the ratio suddenly drops into the next two years. The ratio starts to increase again in the year 2008 and it continues to increase in all later years. This ratio hits its maximum in the latest year that is the year 2010.

#### 4.2.2 Debt to Total Capital Ratio of NEA

This ratio shows the relationship between long term debt to the total capital of the organization. The total capital includes the shareholders equity as well as long term debt. Just like the debt equity ratio this ratio also finds out the leverage risk of the organization. This ratio can be used as an alternative of the debt equity ratio to calculate and analyze the risk in the business organization.

The formula for debt to total capital ratio is given as follows:

$$\text{Debt to Total Capital Ratio} = \frac{\text{Long Term Debt}}{\text{Capital Employed}}$$

Where, capital employed = Share Capital + Retained Earnings + Long Term Debt

The position of debt to total capital ratio of the NEA is shown in the following table:

**Table 4.4 Debt to Total Capital Ratio of NEA (Rupees in millions)**

Year	Long Term Debt	Capital Employed	Ratio (LTD/C.E)
2001	36707	56393	0.651 or 65.1%
2002	37325	54622	0.683 or 68.3%
2003	39637	55344	0.716 or 71.6%
2004	41103	56321	0.730 or 73%
2005	44537	60404	0.737 or 73.7%
2006	46487	65926	0.705 or 70.5%
2007	48464	69195	0.70 or 70%
2008	52159	73191	0.713 or 71.3%
2009	54481	75540	0.721 or 72.1%
2010	61074	81076	0.753 or 75.3%

Source: Annual report, NEA and appendices 2 and 3

To make the above table clearer and to properly analyze the figures we can find out the mean, standard deviation and the coefficient of variation of the ratio. The found out figures are presented below:

Mean of the debt to total capital ratio  $(\bar{X}) = 0.711$  or 71.1%

Standard Deviation of the debt to total capital ratio  $(\sigma) = 0.027$

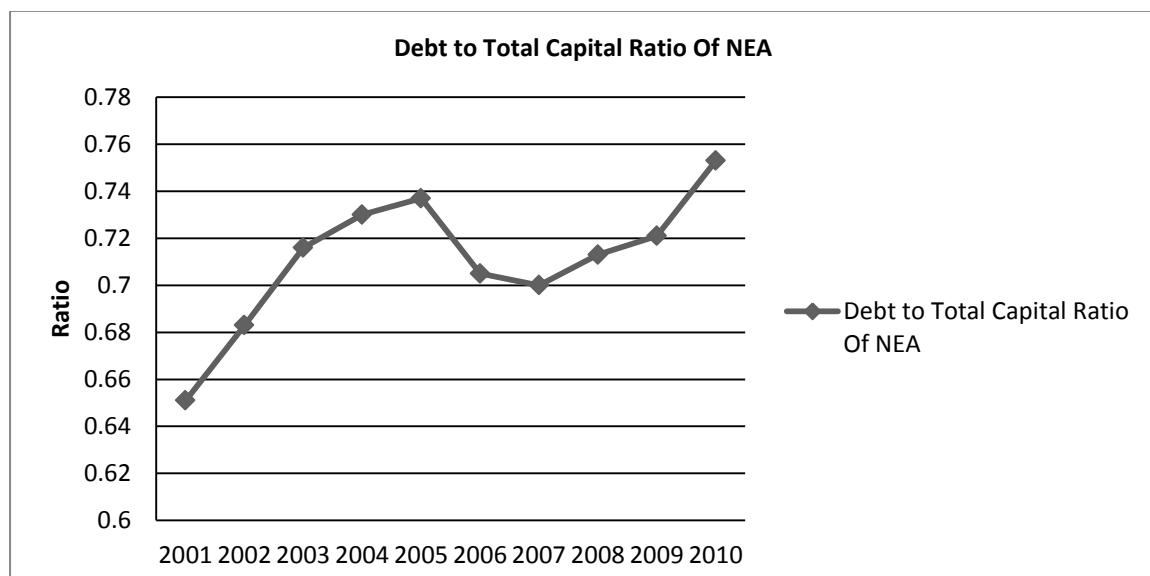
Coefficient of variation of the debt to total capital ratio (C.V) = 0.038

The organization has a high contribution of debt to total capital. This shows that the company is highly volatile and risky and can end up in bankruptcy. The highest ratio is 75.3% in the year 2010 and the coefficient of variation is 3.8% which shows that this trend is consistent over the years. In the coming years there may come a situation where the company may not be able to pay its loan principle and its interest.

The higher long-term debt to total capital also shows that the company is dependent on the outside capital. One reason may also be that the company is running in heavy loss in the previous years and it could not manage the funds from the internal source. This situation further adds to the complication. To improve the situation we should focus on generating more profit and focus in internal funding.

The position of debt to total capital ratio of NEA is also can be shown in a diagram for better understanding. The figure is shown as follows:

**Figure 4.4 Debt to Total Capital Ratio of NEA**



Just like the debt equity ratio the debt to the total capital ratio is also increasing from the year 2001 to the year 2010. But the amount of increment is more rapid in the earlier years. This ratio has continues to increase up to the year 2005 and from then onwards this ratio has fallen. Again from the year 2007 the ratio has started to rise. But now the rate of increment is inconsistent. The ratio has reached to its maximum in the year 2010.

#### 4.2.3 Interest Coverage Ratio of NEA

This ratio indicates the ability of a firm to pay interest charges on its borrowed capital. This ratio is also can be said as the debt service ratio or the times interest earned ratio. This ratio can become very important to the debt providers because by seeing this ratio they can find out whether the organization can pay their interest in time or not. They make their decision on providing fund to the organization by analyzing this ratio. If this ratio is not satisfactory they may not provide fund to the organization.

This ratio can be found out by using the following formula:

$$\text{Interest Coverage Ratio} = \frac{\text{NPBIT}}{\text{Interest}}$$

Where, NPBIT refers to the net profit before interest and tax.

The position of Interest Coverage ratio of NEA is shown in the following table:

**Table 4.5 Interest Coverage Ratio of NEA (rupees in millions)**

Year	NPBT	Interest	NPBIT ( NPBT + Interest)	Ratio (NPBIT/Interest)
2001	(1.9)	1188	1187	0.99
2002	(717.4)	1395	678	0.48
2003	(455.9)	2973	2518	0.84
2004	(1486.1)	2991	1505	0.503
2005	(1312)	3079	1767	0.574
2006	(1267)	3050	1783	0.585
2007	314.02	2385	2071	0.868
2008	(2372.87)	2274	(98)	-0.04
2009	(5191)	2492	(2699)	-1.08
2010	(5350)	3204	(2146)	-0.67

Source: Annual Report, NEA

By the help of the above table we can calculate the mean, standard deviation and the coefficient of variation of the above ratio. The calculated figures are shown in the following:

Mean of the interest coverage ratio  $(\bar{X}) = 0.305$

Standard Deviation of the interest coverage ratio  $(\sigma) = 0.654$

Coefficient of Variation of the interest coverage ratio  $(C.V) = 2.145$

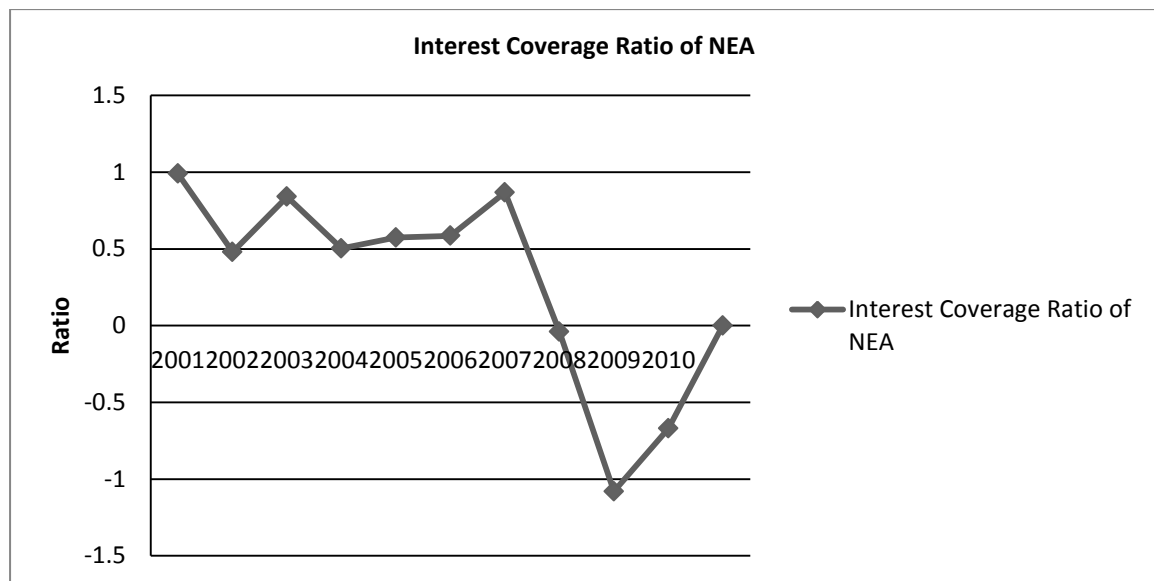
From this analysis we find out that the ratio is very much fluctuating. In some years it is in positive figures whereas in the later years it has become negative. That's why the coefficient of variation of this ratio is very large.

By doing the analysis of this ratio we can see that the organization does not earn enough profit to cover its interest expenses. The interest expense of the organization itself is very high due to heavy dependency in the borrowed fund. In the recent three years the organization is already in loss even before paying interest and the high percentage of interest expenses in the income statement further increases the loss portion.

This ratio indicates the organization has a higher cost of sales and the sales revenue is low as compare to the high cost of sales. To improve the situation the organization should either increase the sales volume or it should adjust its tariff rate because as we all know the rate of sales should be able to cover all the actual expenses and to be able to earn profit. But here it is unable to cover its expenses as well.

The interest coverage ratio of the organization is shown in the following figures:

**Figure 4.5 Interest Coverage Ratio of NEA**



From the above table we can see that the interest coverage ratio of the organization is in bad condition. This ratio is less than one in almost all of the years. From the year 2008 the ratio lies in the negative figures. In the beginning years the ratio has shown a fluctuating trend. This ratio is the highest in the year 2001 and it has dropped in the year 2002 and again in the year 2003 the ratio has slightly increased showing a slight improvement in the profit condition. Again in the year 2004 it has dropped and reached to the worse condition. The ratio is consistently bad up to the year 2007. But after the year 2007, there seems a dramatic change in the scenario. The ratio falls steeply and reaches into the negative mark in the year 2008. Then it continues to fall in the year 2009. In the year 2010 it has increased slightly but it is still in the negative value.

### **4.3 Activity Ratios of NEA**

Activity ratios find out the relationship between sales and various resources. So this ratio shows the resource management skill of the organization. It shows the effectiveness in use of resources and its efficiency. The theory is that we must be able to generate maximum sales by the utilization of minimum amount of resources. In the context of the NEA the important activity ratios are debtors turnover or receivables turnover ratio, fixed assets turnover ratio, total assets turnover ratio and the capital employed turnover ratio

### 4.3.1 Debtors Turnover Ratio of NEA

NEA has a significant amount of debtors and receivables in its balance sheet. So this ratio becomes important to see how efficiently the organization is using debtors and other receivables in the generation of sales to the organization. The formula for the calculation of the debtors turnover ratio is given as follows:

$$\text{Debtors Turnover Ratio} = \frac{\text{Sales}}{\text{Closing Debtors}}$$

There are other formulas for the ratio as well but this ratio is useful to calculate in this organization as we can get the figures straight from the balance sheet.

The debtors turnover ratio of NEA is presented in the following table:

**Table 4.6 Debtors Turnover Ratio of NEA (rupees in millions)**

Year	Sales	Debtors and other Receivables	Ratio (sales /Debtors)
2001	8160	1678	4.9 times
2002	9476	2284	4.2 times
2003	11012	3380	3.3 times
2004	11874	3735	3.2 times
2005	12605	3697	3.4 times
2006	13331	4088	3.3 times
2007	14449	5151	2.8 times
2008	15041	5721	2.7 times
2009	14405	4854	2.9 times
2010	17586	6533	2.7 times

Source: Annual Report, NEA

To more clearly analyze the ratio the mean, standard deviation and the coefficient of variation of the above ratio can be found out. The figure is as follows:

Mean of the debtors turnover ratio  $(\bar{X}) = 3.34$

Standard deviation of the debtors turnover ratio  $(\sigma) = 0.67$

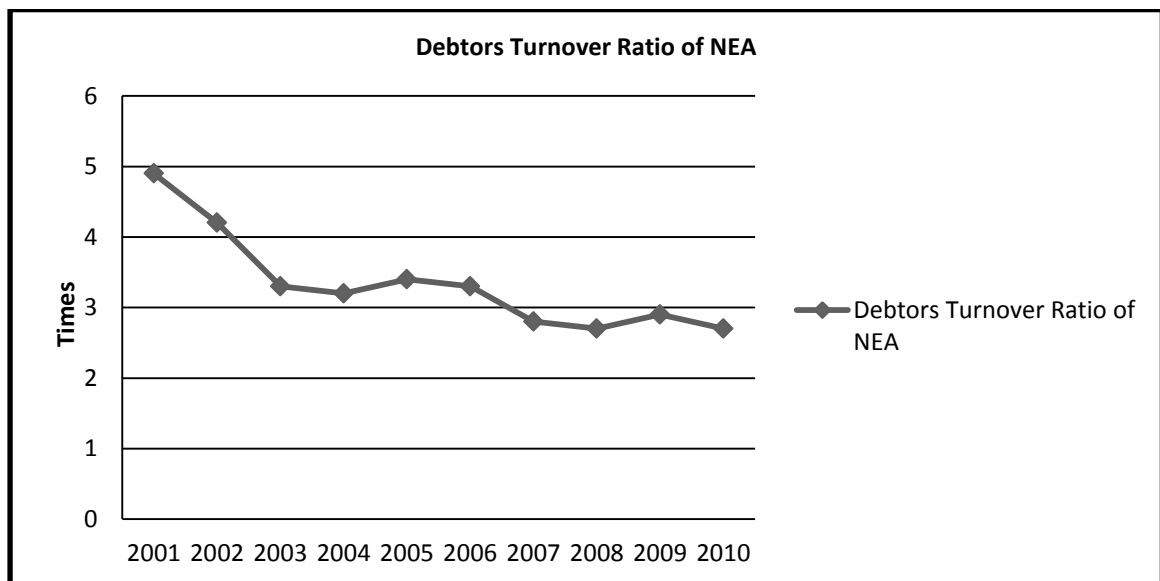
Coefficient of Variation of the debtors turnover ratio (C.V) = 0.2

From the above calculation we can see that the average receivables turnover is good and it is not varied that much from year to year. But if we see the above table we find that the receivables turnover is decreasing from year to year. This is not a good signal. The highest ratio is in the year 2001 with 4.9 times and the lowest ratio is in the year 2010 with 2.7 times.

This situation shows that the organization's receivables collection system is deteriorating. The amount of debtors in the balance sheet is continuously increasing. The organization should focus on the collection of receivables in time. The receivables turnover of an organization needs to be as high as possible in order to run the organization healthily. So this organization also needs to focus on the collection of the debtors in time. For this the organization can install a management function and team.

The position of the debtors collection of the organization can be seen in the following figure:

**Figure 4.6 Debtors Turnover Ratio of NEA**



In the above figure we can see that the debtors turnover ratio is continuously decreasing. The ratio is in its maximum in the year 2001, and from that year it is continuously decreasing and it has reached to the minimum in the year 2008. From that year the ratio is fluctuating but is in the lowest zone. In the beginning years the ratio has a continuous and a steep fall. The ratio then starts to rise a little in the year 2005. But the rise is not enough to cover the original position in the year 2001. Again from the year 2007 it has decreased and reached into the worse position. This phenomenon in the debtors

turnover ratio is not good for the organization. The organization should have a large and increasing debtors turnover ratio to solve the problem of financial crisis.

### 4.3.2 Fixed Assets Turnover Ratio of NEA

This ratio shows how efficiently the fixed assets are used to generate sales. NEA has a large investment in the fixed assets and this should give the firm adequate use. So this ratio helps to find out this aspect of the firm. The fixed assets of the organization include the property and plant, equipment, capital work in progress, and investment.

The fixed assets turnover ratio is found out by using the following formula:

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

**Table 4.7 Fixed Assets Turnover Ratio of NEA (Rupees in millions)**

Year	Sales	Fixed Assets	Ratio
2001	8160	52395	0.16
2002	9476	56471	0.17
2003	11012	59363	0.19
2004	11874	62747	0.19
2005	12605	69003	0.19
2006	13331	74554	0.18
2007	14449	81809	0.18
2008	15041	89350	0.17
2009	14405	96928	0.15
2010	17586	107441	0.16

Source: Annual Report, NEA

With the help of the data of above table we can find out the mean, standard deviation and the coefficient of variation of the following ratio. As it has been mentioned earlier the calculation is done by using the formula described earlier in this report in the previous section called the research methodology. The calculated figures are presented below:

Mean of the fixed assets turnover ratio  $(\bar{X}) = 0.17$

Standard Deviation of the fixed assets turnover ratio  $(\sigma) = 0.014$

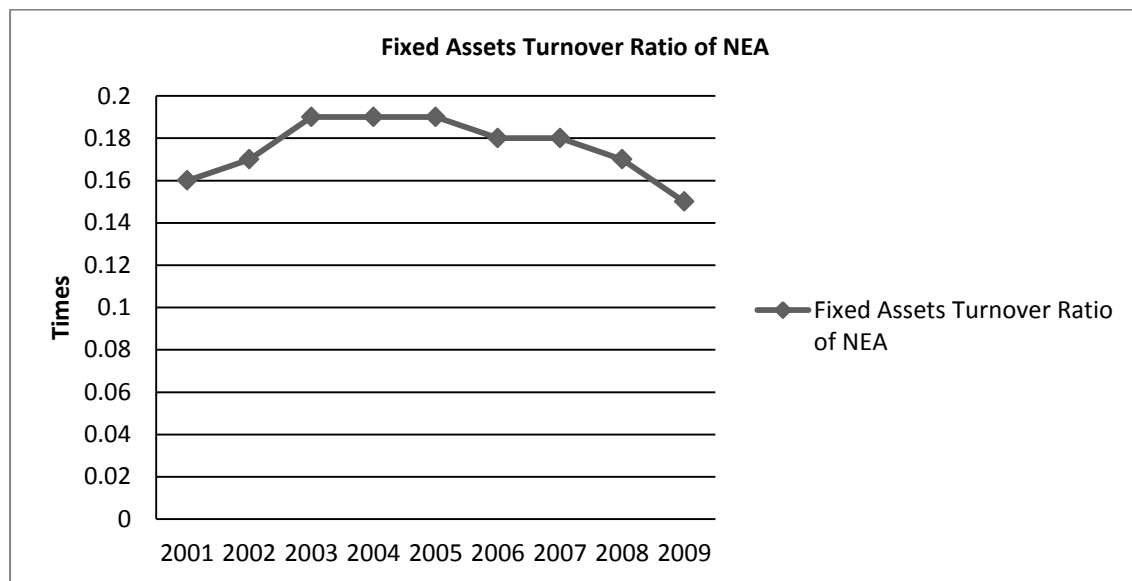
Coefficient of Variation of the fixed assets turnover ratio (C.V) = 0.08

The above table shows that there is a depressing condition in the fixed assets turnover ratio of the organization. The organization has a huge investment in the fixed assets as it is a capital oriented organization. But the amount of sales generated as respect to the investment in capital is very low. It is in average of 0.17 times and it is quite consistent throughout the year which shows that there is no improvement and the organization has no focus in this area. Whereas we can see that the investment in fixed assets is almost doubles in the last ten years.

To improve the above situation the solution is to increase the sales revenue of the organization. For this the organization should focus in the increment in the sales volume because Nepal has a large potential in the electricity coverage and it also has a scope in the export o the electricity to the India.

The situation of the fixed assets turnover ratio of the NEA is shown in the following figure as well:

**Figure 4.7 Fixed Assets Turnover Ratio of NEA**



In the figure we can see that the amount of fixed assets turnover ratio is very small. It has never reached to the whole number in any year. This is a very poor condition. The ratio lies between the ranges of 0.14 to the 0.19. This ratio tends to be very consistent throughout the ten years. The increment and the reduction in the ratio is very low. In the beginning of 2001, the ratio is at a low level. Then it rises a little bit in the next three years. The rise is not significant because it won't help in the very bad economic condition of the organization. Again from the year 2003 it has remained consistent for a

couple of years and the ratio began to drop and reached to the minimum in the year 2010. This trend shows that the situation of the fixed assets turnover ratio of the NEA was bad from many years and it is still continuing to worsen in the latest years.

### 4.3.3 Capital Employed Turnover Ratio of NEA

This ratio shows how efficiently the capital is generating sales. NEA has huge capital investment. So its management efficiently is needed to be calculated by this ratio. The efficient utilization of the capital is very necessary because the capital does not come for free. The organization needs to bear some cost of the used capital. So it is generally assumed that the return from this capital should be greater than the cost of the capital. To have a greater return from the used capital, at first it must be able to generate adequate sales from the capital. So this ratio becomes important. The basic concept is that the higher the ratio is the higher it is seemed well.

The formula to calculate the capital employed turnover ratio is given as follows:

$$\text{Capital Employed Turnover Ratio} = \frac{\text{Net Sales}}{\text{Capital Employed}}$$

The capital employed turnover ratio of the Nepal Electricity Authority is presented in the following table:

**Table 4.8 Capital Employed Turnover Ratio of NEA (Rupees in millions)**

Year	Sales	Capital Employed	Ratio
2001	8160	53693	0.15
2002	9476	54622	0.17
2003	11012	55344	0.199
2004	11874	56321	0.21
2005	12605	60404	0.209
2006	13331	65926	0.202
2007	14449	69195	0.21
2008	15041	73191	0.21
2009	14405	75540	0.19
2010	17586	81076	0.22

Source: Annual Report, NEA and appendices 3

By the help of the above table we can calculate the mean, standard deviation, and the coefficient of variation of the above data to interpret the data more clearly. The calculated figures are presented as follows:

Mean of the capital employed turnover ratio  $(\bar{X}) = 0.197$

Standard Deviation of the capital employed turnover ratio  $(\sigma) = 0.02$

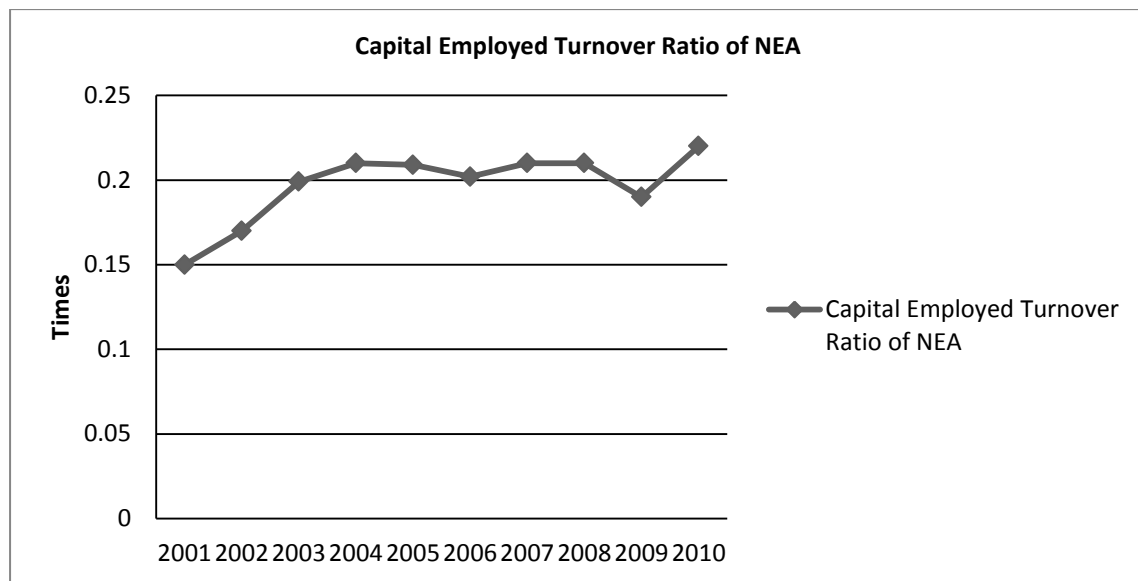
Coefficient of Variation of the capital employed turnover ratio (C.V) = 0.104

As calculated above the mean capital employed turnover ratio is 0.197 which is a very low figure. This shows that the organization is failing to use its capital in generating sales. The standard deviation is just 0.02 which shows that this trend is quite consistent throughout the years. The organization does not have focus in this area. This could create some problem in the future years.

The above table shows a huge investment in capital but a very low turnover in all the years. The organization should focus in increasing the sales. The amount of sales as compared to the amount of capital employed is very low. There is a large scope of electricity so it is possible to increase the organizations market coverage. Another problem of sales increase is that it has to increase its investment in assets. For that the organization has to raise its capital, so this situation of low turnover may not change in coming few years.

The capital employed turnover ratio of the NEA is shown in the following figure also:

**Figure 4.8 Capital Employed Turnover Ratio of NEA**



The above figure shows the condition of the capital employed turnover ratio of the NEA. In the above figure we can see that the capital employed turnover ratio is in very low figure. The ratio is in decimal and lies in the range of 0.15 to 0.25. This is weak condition for any organization. This situation shows that the organization has not enough sales generated as compared to its investment in the capital. In the figure we see that the condition of the capital employed turnover ratio is increasing in the later years. But the amount of increment is small and insignificant. Even in the middle the ratio has fluctuated. This is not good for any organization. The organization should have to have a sharp and rapid increase in the ratio in order to have a sound financial condition.

#### **4.4 Profitability Position of NEA**

Every business wants to maximize its profit. This ratio shows the overall efficiency of the business concern. This ratio shows the earning capacity if a business. To measure the profitability of NEA, the measure ratios are Gross Profit Ratio, Net Profit Ratio, Return on Assets and Return on Equity are analyzed.

##### **4.4.1 Gross Profit Ratio of NEA**

The formula to calculate the gross profit ratio is given as follows:

$$\text{GPR} = \frac{\text{Gross Profit}}{\text{Sales}}$$

The higher the gross profit ratio in any organization the higher it seems the management efficiency of that organization. The lower the ratio, the higher there is the cost of goods sold of the organization. This shows the inability of that organization to purchase at efficiently. The cost of goods sold of the NEA includes the Generation expenses, power purchase expenses, and royalty and transmission expenses.

The condition of the Gross Profit Ratio of NEA over the years is shown in the following table:

**Table 4.9 Gross Profit Ratio of NEA (Rupees in millions)**

Year	Gross Profit	Sales	Ratio
2001	3680	8160	45.1%
2002	3589	9476	37.9%
2003	5664	11012	51.4%
2004	5109	11874	43%
2005	5142	12605	40.8%
2006	4999	13331	37.5%
2007	5415	14449	37.5%
2008	5510	15041	36.6%
2009	4470	14405	31%
2010	5451	17586	31%

Source: Annual Report, NEA

To make the above table clearer and to see the trend of the above ratio the mean, standard deviation, and the coefficient of variation of the above ratio is calculated. The calculated figures are presented below:

Mean of the gross profit ratio  $(\bar{X}) = 39.18\%$

Standard Deviation of the gross profit ratio  $(\sigma) = 5.91\%$

Coefficient of Variation of the gross profit ratio  $(C.V) = 0.151$

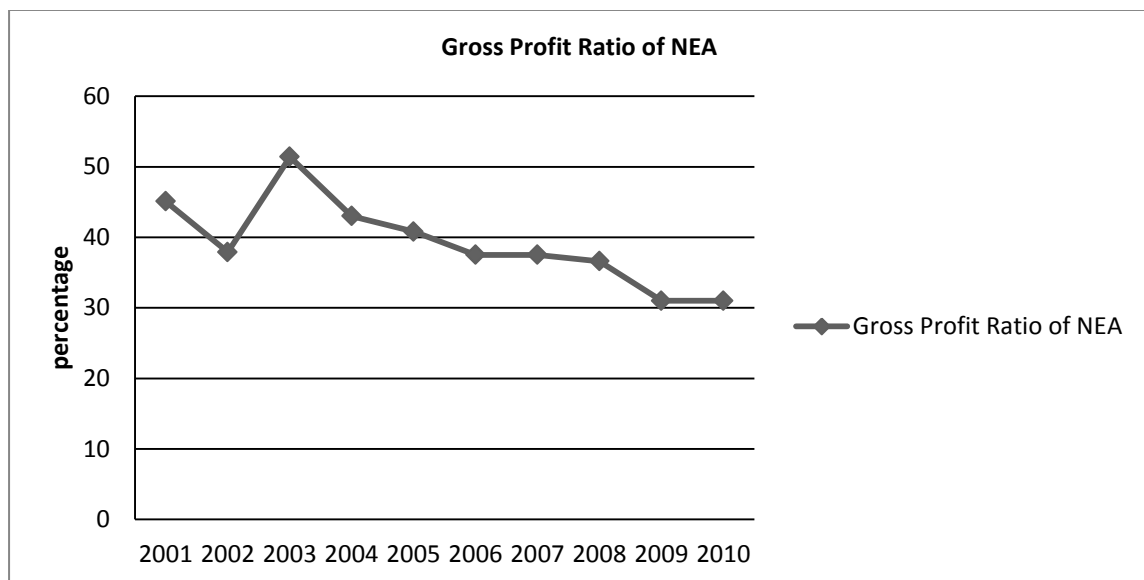
From the above table we can see that the Gross Profit Ratio is the highest at the year 2003 and the lowest is at the year 2010. So, it is gradually decreasing in recent years. The gross profit margin is satisfactory but the problem of continuous decreasing is not good. The organization need to pay attention in this area.

The mean gross profit ratio is only 39.18% whereas the standard deviation is 5.91%. This means that there is relatively more variance in this ratio than the

other ratios. The variance is formed by the decrement of the gross profit portion in the later years. The main way to increase the gross profit is to increase the sales revenue without increasing the cost of the sales. This organization also needs to focus in the increment of the sales revenue by the expansion of the sales volume. This organization can decrease the relatively high cost of electricity purchase and focus on producing own electricity which is a cheaper way.

The situation of the gross profit ratio of the organization can also be shown on a diagram. The diagram is shown below:

**Figure 4.9 Gross Profit Ratio of NEA**



The above figure shows the situation of the gross profit turnover ratio of the NEA. In the above figure we see the trend line of the gross profit turnover ratio. The trend shows that the ratio is in a decreasing trend in the later years. The ratio is in its maximum in the year 2003 and it is in its minimum in the year 2010. In the beginning years the ratio has started from a decent ratio of over 40%. Then in the year the ratio drops and in the year 2003 it has a rapid and steep increase. Then from the year 2003 the ratio is continually decreasing and it has reached to its minimum in the year 2010. This trend shows that the organization is losing the ability to earn profit and it predicts that the organization will still loss its gross profit in the future years. Any organization should have a decent amount of gross profit in order to cover the further expenses. If this gross profit starts to decrease then we know that there is some problem in the organization.

#### 4.4.2 Net Profit Ratio of NEA

The net Profit is calculated by subtracting all the expenses from the sales revenue. The expenses can be cost of sales, administration expenses, distribution expenses, selling expenses, interest, depreciation etc. this figure also takes the help of the other income of the business inconsideration. The NEA has all of these expenses in the balance sheet. The formula for calculating the net profit ratio is given below:

$$\text{Net Profit Ratio} = \frac{\text{Net profit}}{\text{Sales}}$$

The net profit can be either before tax or after tax. In this context the net profit before tax is taken into consideration because in the organization there is no tax payment record in most of the years.

The net profit ratio of NEA is shown in the following table:

**Table 4.10 Net Profit Ratio of NEA (Rupees in millions)**

Year	Net Profit	Sales	Ratio
2001	(1.9)	8160	-0.02%
2002	(717.4)	9476	-7.56%
2003	(455.9)	11012	-4.14%
2004	(1486)	11874	-12.5%
2005	(1312)	12605	-10.4%
2006	(1267)	13331	-9.5%
2007	314	14449	2.2%
2008	(2372)	15041	-15.7%
2009	(5191)	14405	-36%
2010	(5350)	17586	-30.4%

Source: Annual Report, NEA

To analyze the above data more clearly the mean, standard deviation, coefficient of variation of the ratio is calculated. The calculated figures are presented as follows:

Mean of the net profit ratio  $(\bar{X}) = -12.4\%$

Standard Deviation of the net profit ratio  $(\sigma) = 11.67\%$

Coefficient of Variation of the net profit ratio (C.V) = -0.94

In the above table we can see that the Net Profit Ratio of the organization is negative in all years except the year 2007. It is continually decreasing and the lowest is year 2009 with a figure of negative 39%. We have already seen that the Gross Profit Ratio is positive so we can find out that the organization has a heavy distribution expenses, administration expenses, interest and depreciation. The highest expenses of all of this is interest which is more than double of the power generation expenses. This is because the organization is employing outside capital and need to pay the interest. There is an also heavy depreciation expense in the equipment. Even the organization has administration expenses higher than its transmission expenses.

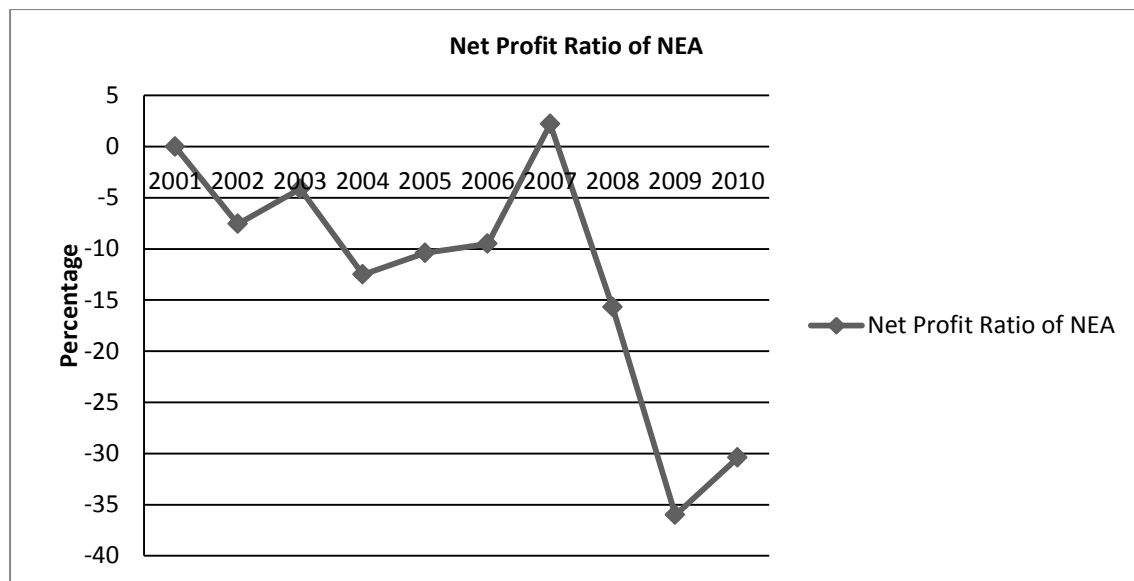
In the year 2007, we see a small amount of profit; this is because if we look at the income statement of that year, there is a profit from foreign exchange rather than loss. This pays a significant part in the net profit. At that year there is no provisions and distribution expenses is low. So we see that in true sense there is no real profit in that year too.

The standard deviation of the ratio is high because in one year there is a profit and in all of the years there is loss. This is a high fluctuation in the ratios.

To improve such condition the organization should focus in reducing the administration and distribution expenses. The organization should focus on the internal capital for which it need to pay interest and should increase in the sales revenue.

The net profit ratio of NEA can be shown in the following figure:

**Figure 4.10 Net Profit Ratio of NEA**



The above figure shows the situation of the net profit ratio of the NEA. In the above figure we can see that the net profit ratio of the organization is not very good. The ratio lies below the negative mark in all of the last ten years except the year 2007. The ratio starts just above the negative mark in the year 2001 and it continually remain below the zero in next six years whereas the percentage fluctuates. Then in the year 2007 the ratio reaches to the positive mark but the percentage there is also very small and insignificant. Then after the year 2007 the ratio drops down drastically and continues to drop in the next two years. It reaches to the maximum loss in the year 2009 and in the year 2010 the ratio increases a little but it is still very low. This trend shows that the net profit ratio of the NEA is in the worst condition of all of the ratios of the organization. The ratio is not showing any sign of being better in next few years. The organization should focus in the management of profit to earn profit in the future.

#### **4.4.3 Return on Assets of NEA**

The amount of assets in the balance sheet of the organization is very high. This is indeed because this organization is a capital equipment based organization. This situation needs a heavy funding. The assets should yield a

high return to sustain in the long run. This return is calculated by this ratio. The formula to calculate this ratio is given as follows:

$$\text{Return on Assets} = \frac{\text{NPAT}}{\text{Total Assets}}$$

The position of return on assets of NEA is shown in the following table:

**Table 4.11 ROA of NEA (Rupees in millions)**

Year	NPAT	Total Assets	Ratio
2001	(51)	58708	-0.08%
2002	(860)	63793	-1.35%
2003	(1953)	67053	-2.91%
2004	(1760)	70630	-2.49%
2005	(1312)	77494	-1.69%
2006	(1267)	83549	-1.52%
2007	240	92131	0.26%
2008	(2315)	100528	-2.30%
2009	(5093)	108161	-4.71%
2010	(5350)	120042	-4.46%

Source: Annual Report, NEA and appendices 4

From the help of the above table we can calculate the mean, standard deviation, and the coefficient of variation of the above ratio. The calculated ratio is presented follows:

Mean of the return of assets  $(\bar{X}) = -2.13\%$

Standard Deviation of the return on assets  $(\sigma) = 1.54\%$

Coefficient of Variation of the return on assets  $(C.V) = 0.726$

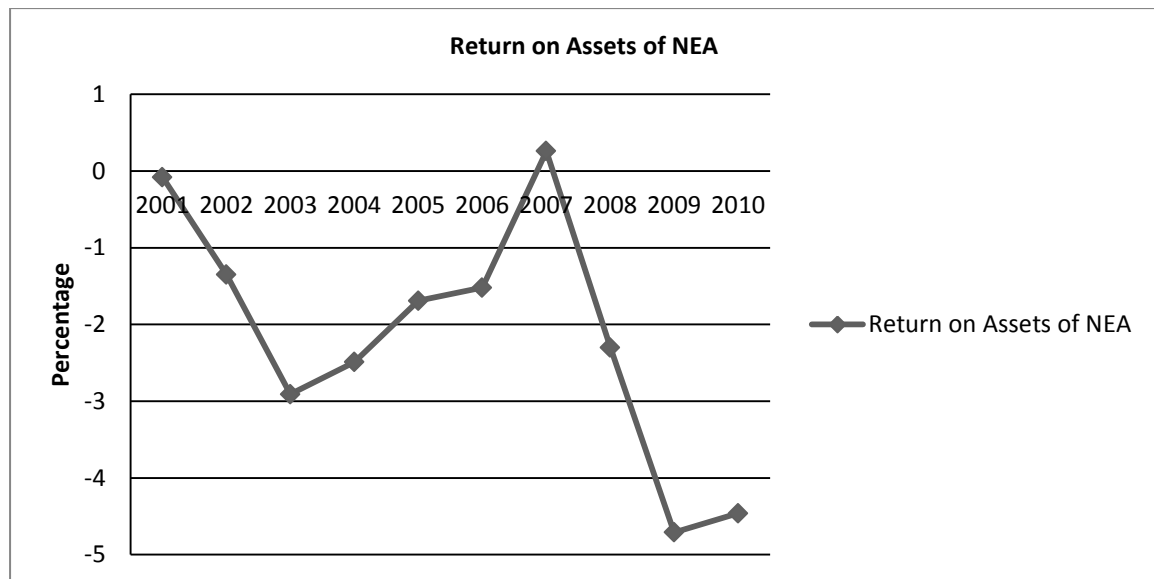
Just like the NPR of the organization the return on assets is also in negative because there is negative profit margin. Whereas, the amount of total assets is heavy in this organization.

This shows that there is no fruitful use of assets. There is heavy investment and a low return. The organization is losing its net worth day by day and in a verge of collapse.

To improve such situation the organization need to focus in earning profit, reducing cost and increasing revenue either by increasing sales or by putting its assets in alternative use. This is an absolutely necessary condition.

The position of Return on Assets of NEA is shown in the following figure:

**Figure 4.11 ROA of NEA**



In the above figure the return on assets of the NEA is shown. In the above figure we can see that just like the net profit ratio of the organization the return on assets of the organization also lies in the negative zone. This is particularly due to that the organization is running from heavy loss in the past few years. The percentage of the return on assets of the organization is not very high because the organization has a large amount of assets invested in it. Just like the net profit ratio the return on assets is positive in only the year of 2007. Even in that year the percentage is very low. This is because the organization had a small amount of profit in that year due to the gain in the foreign exchange transaction. Since that year the ratio has suffered a steep drop and reached to the worse in the year 2009. There is no sign of improvement in this ratio because unless the organization focuses in earning profit this situation will not improve. The organization by far does not have any plan to earn profit. The organization is deteriorating day by day.

#### 4.4.4 Return on Equity of NEA

The equity of a company means that it is the capital funded by the owner of an organization and it also includes the reserve and surpluses and the profit earned by the organization over the years. The organization needs to have an enough earning to survive the existence. Even the capital providers should get a good return in their fund invested. This ratio helps to understand the amount of return the capital providers get in their investment in the firm. They decide their position in the organization by the analysis of this ratio.

The formula to calculate the return on equity is given follow:

$$\text{ROE} = \frac{\text{NPAT}}{\text{Shareholders Equity}}$$

The shareholder's equity of the NEA includes share capital, and reserve and accumulated Profit.

The calculation of the ROE of the NEA is shown in the following table:

**Table 4.12 ROE of NEA (Rupees in millions)**

Year	NPAT	Shareholder's Equity	Ratio
2001	(51)	16986	-0.3%
2002	(860)	17297	-4.97%
2003	(1953)	15707	-12.4%
2004	(1760)	15218	-11.6%
2005	(1312)	15867	-8.27%
2006	(1267)	17568	-7.21%
2007	240	20731	1.16%
2008	(2315)	21032	-11%
2009	(5093)	21059	-24.2%
2010	(5350)	20002	-26.74%

Source: Annual Report, NEA and appendices 1

To analyze the above data, the mean, standard deviation and the coefficient of variation of the ratio is calculated. The calculated result is presented below:

Mean of the return on equity ( $\bar{X}$ ) = -10.55%

Standard Deviation of the return on equity ( $\sigma$ ) = 8.62%

Coefficient of Variation of the return on equity (C. V) = 0.817

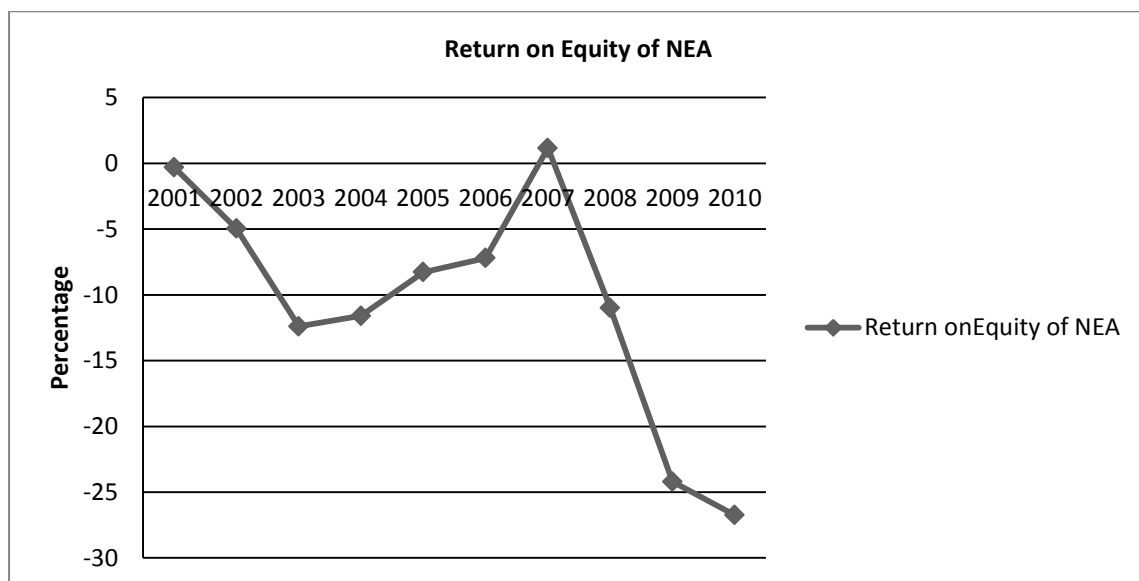
NEA has a significant portion of equity in its balance sheet. The ROE of the organization is found out negative in almost all years except in the year 2007. This is because the organization has a negative NPAT in almost of all years except in the year 2007. The largest figure of negative ROE is in the year 2010. In the year 2007, it is a positive figure but it is a very minimal figure of only 1.16%. Due to the fluctuation in the profit pattern of this organization the coefficient of variation of the ratio is very large.

This condition shows a deteriorating condition of the organization profit performance. Even though the organization is running from continuous heavy loss, the organization has done nothing to improve the condition. This is proved by the still further increase in the amount of loss which is increasing year to year.

To improve such situation the organization can implant a profit planning and control mechanism and apply it thoroughly. It should earn profit to survive in the future. The organization is a monopoly in the present. But we never know what comes in the future. This organization should improve its financial health desperately.

The position of the ROE of the organization is shown in the following figure as well:

**Figure 4.12 ROE of NEA**



The above figure shows the trend line of the ratio of the return on equity of the NEA. In the above figure we can see that the return on equity of the NEA is continually decreasing just like the net profit ratio and the return on the assets of the organization. This ratio lies in the negative area in all of the years and this ratio also has the similar trend like the above two ratios. This is happened because all the three ratios use the net profit of the organization as a component. And the net profit of the organization is in negative in almost all of the years. The organization has a small amount of equity as compared to its debt. The organization has a large portion of the accumulated loss which decreases the amount of equity drastically. This situation is not good for this organization because the continual loss will further decrease the equity portion and increases the dependency of the organization on the outside fund. To improve the situation the organization should focus in earning profit and investing in those projects which gives the maximum return.

#### **4.5 Ratios to Measure the Growth Possibility of the NEA**

Even though the organization is running from heavy loss currently, the organization can still do better if it continuous to expand its operation and continue to grow. The trend of any organization is that if it is in growth phase it is bound to have some loss. But as soon as it reaches to its maturity, it starts to make profit. This organization has a large possibility to expand. It has to cover a large amount of internal market and it also has a chance to export and run internationally.

There are some ratios which are used to measure the growth possibility of an organization. Among these ratios we are using some important ratios which are significant to this organization and which gives useful meaning to this organization.

##### **4.5.1 Sales Growth Rate of NEA**

For an organization to be successful the sales growth rate is important. The sales growth rate should be in the increasing trend to show a great possibility of sales expansion. This rate is also important because the profit is generated through the sales.

The sales growth rate of any organization is find out by using the following formula:

$$\text{Sales Growth Rate} = \frac{\text{Current Year's Net Sales}}{\text{Previous Year's Net Sales}}$$

By using the above formula the growth rate of each year of the organization is found out and presented in the following table:

**Table 4.13 Sales Growth Rate of NEA (Rupees in millions)**

Year	Sales	Growth Rate
2001	8160	-
2002	9476	1.16
2003	11012	1.162
2004	11874	1.078
2005	12605	1.062
2006	13331	1.058
2007	14449	1.086
2008	15041	1.041
2009	14405	0.958
2010	17586	1.221

Source: Annual Report, NEA

From the above table we can calculate the mean, standard deviation and the coefficient of variation of the growth rate. The calculated figure is presented below:

Mean of the sales growth rate  $(\bar{X}) = 1.092$

Standard Deviation of the sales growth rate  $(\sigma) = 0.074$

Coefficient of Variation of the sales growth rate  $(C.V) = 0.068$

As we can see the mean ratio of the organization is 1.092. This means that the organization is increasing its sales revenue at a rate of 1.092 per year. The rate is very low and it is quite consistent throughout the years. It is only increasing 9.2 % in one year. For this kind of an organization this rate is quite unsatisfactory because the organization should need to increase its sales rapidly if it wants to cover all of its previous losses and earn profit. The previous losses are heavy and it is quite clear that it is unable to cover the loss portion of the organization.

To improve the sales growth rate the organization should focus in expanding the production and distribution of the electricity by utilizing the current resources maximum level.

#### 4.5.2 Total Capital Increase Rate of NEA

The organization should continually increase its total capital to run the business. It has to utilize its reserve and surplus or borrow the needed fund or increase its owner's equity in almost each year. The company needs fund in times to expand its operation and even it needs to run its day to day operation. The rate of total capital increase is very important because by comparing it with the rate of sales increase we can see what the use of capital provided in the organization is.

The formula to calculate the total capital increase rate is given as follows;

$$\text{Total Capital Increase Rate} = \frac{\text{Current Year's Total Capital}}{\text{Previous Year's Total Capital}}$$

Here in the NEA the total capital is equal to the permanent capital of the organization. The total capital increase rate of the organization is calculated and presented in the following table:

**Table 4.14 Total Capital Increase Rate of NEA**

Year	Total Capital	Growth Rate
2001	53693	-
2002	54622	1.017
2003	55344	1.013
2004	56321	1.018
2005	60404	1.072
2006	65926	1.091
2007	69195	1.050
2008	73191	1.058
2009	75540	1.032
2010	81076	1.073

Source: Annual Report, NEA

From the above table we can calculate the mean, standard deviation, and the coefficient of variation of the above ratio. The calculated figures are presented as follows:

Mean of the total capital increase rate  $(\bar{X}) = 1.047$

Standard Deviation of the total capital increase rate  $(\sigma) = 0.027$

Coefficient of Variation of the total capital increase rate (C.V) = 0.026

The average growth rate of the capital of the NEA is 1.047. This means that the capital of the organization is increasing at a rate of 4.7% each year. This ratio does not show any meaning unless it is compared to the sales growth rate of the organization. From the above calculation we can see that the sales growth rate of the organization is more than the average growth in the capital. This is a good sign. The coefficient of variation of the organization is 0.026. This variation is a low figure. This shows that the capital of the organization is increasing at a consistent rate.

The organization should focus in the increment of the capital through the reserves and the retained earnings of the organization. The increase of the capital through the loan may create a problem in the payment of the capital and the interest of the organization especially in the present scenario of that the organization is running in loss.

#### **4.5.3 Net Profit Increase Rate of NEA**

The increment of the sales and the total capital means nothing if there is not enough increase in the net profit of the organization. Net profit is that measure which finds out the profitability position of any organization. Any organization should earn adequate profit to survive and to continue its operation. The net profit increase rate becomes very important in the situation to find out the profit performance of the organization. This rate is then compared to the sales increase rate and the total capital increase rate of the organization and find out the result. The formula to calculate the net profit increase rate of organization is given below:

$$\text{Net Profit Increase Rate} = \frac{\text{Current Year's Net Profit}}{\text{Previous Year's Net Profit}}$$

The net profit increase rate of the NEA is calculated and presented in the following table:

**Table 4.15 Net Profit Increase Rate of NEA (Rupees in millions)**

Year	Net Profit (Loss)	Growth Rate
2001	(51)	-
2002	(860)	16.86
2003	(1953)	2.27
2004	(1760)	0.90
2005	(1312)	0.74
2006	(1267)	0.96
2007	240	-0.189
2008	(2315)	-9.64
2009	(5093)	2.2
2010	(5350)	1.05

Source: Annual Report, NEA

From the above table we can calculate the mean, Standard Deviation, and the coefficient of variation of the above ratio. The calculated figures are presented below:

Mean of the net profit increase rate  $(\bar{X}) = 1.683$

Standard Deviation of the net profit increase rate  $(\sigma) = 6.37$

Coefficient of Variation of the net profit increase rate  $(C.V) = 3.78$

From the above calculation we can see the mean ratio is 1.683 but there is a high fluctuation in the ratio because the standard deviation is high and the coefficient of variation is also big. This is particularly because that the net profit of the organization is not consistent. In some years it is negative while in the year 2007 it is a positive figure. This has influenced the ratio very much.

Because there is no net profit in almost years except in the year 2007. That is why the calculated figure is the increase rate of the net loss. This rate is also highly fluctuating. The highest rate is at the year 2002 and the lowest is in the year 2005.

Even though the total capital and the annual sales of the organization is increasing, there is no net profit in the year and the net loss is increasing in the latest year. This is an unusual position. This may be because of the poor cost performance of the organization. The organization should focus in the increment of the net profit through the better utilization of the organizational

resources. The organization should also clearly understand the reason behind the profit in one year and loss in almost all of the years. By this the organization can focus in the reason behind the profit and work on this to get profit in all of the years.

#### 4.5.4 Consumers Increase Rate of NEA

For an organization to increase in its sales and net profit the organization should increase the number of consumers in each year in a satisfactory number. The number of consumers decides the number of sales. The way to increase the sales of one organization is one to increase the number of its consumers of its product or it should focus in the increment of the consumption of its product from the same old customers. That's why the consumers increase rate of an organization plays a significant role in the financial performance analysis and the management performance analysis of an organization. By this rate we can find out how much consumers are increasing year by year, whether it is satisfactory or not and what is to be done if it is unsatisfactory.

To calculate the consumers increase rate of any organization we use the following formula:

$$\text{Consumers Increase Rate} = \frac{\text{Current Year's Consumers}}{\text{Previous Year's Consumers}}$$

By using the above formula the consumers increase rate of the NEA is found out and presented in the following table:

**Table 4.16 Consumers Increase Rate of NEA**

Year	No. of Consumers	Growth Rate
2001	745992	-
2002	884535	1.186
2003	970611	1.097
2004	1053935	1.086
2005	1159855	1.1
2006	1277447	1.101
2007	1397813	1.094
2008	1516883	1.085
2009	1670610	1.101
2010	1854275	1.11

Source: Annual Report, NEA

From the above table we can find out the mean, standard deviation, and coefficient of variation of the growth rate of the consumers. From this we can analyze the data even more clearly and see the findings to compare it with other ratios. The calculated figures are presented below:

Mean of the consumers increase rate  $(\bar{X}) = 1.107$

Standard Deviation of the consumers increase rate  $(\sigma) = 0.029$

Coefficient of Variation of the consumers increase rate (C.V) = 0.026

From the above calculation we can see that the average rate of the increment of the consumers per year is 1.107. This rate is low for a large organization like this which has a large national and international market which is yet to cover. This coefficient of variation of this ratio is only 0.026 which shows that the consumers is increasing in a smooth and consistent way. It shows that the consumers are increasing in this organization almost in a natural way. The organization has done nothing to increase its customers. Even it has done something this effort is not seen in action.

To increase the above situation the organization should focus in the market coverage strategy. There is still many people and area in our country which is lacking in the use of electricity. There is also a possibility of the export of electricity to India. The organization therefore produces more electricity and sells it to the costumers. This solution seems impossible in the latest future because currently the organization is unable to meet the demand of its current consumers as well. The country is suffering from the load shedding of up to 14 hours of a day.

#### **4.5.5 Correlation between the Sales Growth Rate and the Total Capital Growth Rate**

This analysis is very important because from this analysis we can see whether there is any relation between the sales growth rate and the total capital growth rate. Generally if we increase the capital we assume that it will automatically increase the sales because we don't invest in the capital

without gaining anything. The increase in the capital there should be a simultaneous increment in the sales volume of the organization because capital increase will lead into the increment in the assets of an organization and the assets will bring the sales. If this does not happen then we see that there is a problem in the organization.

So doing this analysis the relation between the sales and total capital is find out in the organization. The calculation of the correlation coefficient of these two is found out below:

Year	Sales Growth Rate	Capital Growth Rate
2001	-	-
2002	1.16	1.017
2003	1.162	1.013
2004	1.078	1.018
2005	1.062	1.072
2006	1.058	1.091
2007	1.086	1.05
2008	1.041	1.058
2009	0.958	1.032
2010	1.221	1.073

Here the sales growth rate is assumed to be X and the Capital Growth Rate is assumed to be assumed to be Y. then the correlation coefficient calculated by using the following formula:

$$\text{Correlation Coefficient (r)} = \frac{n\sum xy - \sum x \sum y}{\sqrt{\{n\sum x^2 - (\sum x)^2\}\{n\sum y^2 - (\sum y)^2\}}}$$

x	y	xy	x <sup>2</sup>	y <sup>2</sup>
1.16	1.017	1.18	1.346	1.034
1.162	1.013	1.177	1.35	1.026
1.078	1.018	1.097	1.162	1.036
1.062	1.072	1.138	1.128	1.149
1.058	1.091	1.154	1.119	1.19
1.086	1.05	1.14	1.179	1.103
1.041	1.058	1.101	1.084	1.119
0.958	1.032	0.989	0.918	1.065
1.221	1.073	1.31	1.491	1.151
$\sum x = 9.826$	$\sum y = 9.424$	$\sum xy = 10.286$	$\sum x^2 = 11.777$	$\sum y^2 = 9.873$

Therefore keeping the value of the above calculations in the above equations we get the r as follows:

$$\begin{aligned}
 r &= \frac{9 \times 10.286 - 9.826 \times 9.424}{\sqrt{(9 \times 11.777 - 9.826^2)(9 \times 9.873 - 9.424^2)}} \\
 &= \frac{-0.026}{\sqrt{9.443 \times 0.045}} \\
 &= -0.0398
 \end{aligned}$$

Here the correlation coefficient of the sales growth and the total capital increase rate is  $-0.061$  which shows that there is a negative correlation coefficient between the two. Not only it is negative the figure is very low and minimal. So, we can't say that there is any effect on the capital increase rate to the sales growth. It doesn't signify anything. These variables do not correlate to each other. The effect of one is not seen to the other.

This is a problem to the organization because if we increase the capital and our investment in the organization we must get the fruit of that investment and that is the increase in the sales revenue and to the profit. So the theory is that there must be a positive direct correlation between the two. If these does not shows any relation then we can say that the investment in the company is done in wrong way. The organization needs the increase in sales very badly. This problem can be solved by the investment in the new project and

increase in the production of more products. But by this analysis we see that even we increase our capital there is no guarantee that it will increase in sales revenue.

#### **4.6 Common Size Analysis of NEA**

In the previous sections the ratio analysis of the organization is done. The liquidity ratios, activity ratios, leverage ratios, profitability ratios and the growth possibility ratios of the organization is found out. The ratios cannot cover the all aspect of the balance sheet and the income statement. To analyze each and every aspect of the financial statement the common size analysis is done. Common size analysis is done by the help of the common size balance sheet and the common size income statement. They are the balance sheet and income statement made on the accordance of the percentages. All items of the balance sheet are changed into the percentages of the total assets and all items of the balance sheet are changed in the percentages of the sales revenue. The n the analysis is done by comparing the trend of the percentages over the years. This helps to see the contribution of the different items in the financial statement and their significance.

The common size analysis of the NEA is done as follows:

##### **4.6.1 Common Size Analysis of the Balance Sheet of NEA**

The balance sheet of the NEA is converted into the common size balance sheet by converting each items of the balance sheet into the percentages with respect to the total assets of the organization. In this we assume that the total assets as 100 and convert all the items with respect to this. To do the common size analysis of the balance sheet of the NEA we first of all have to take the look at the original balance sheet of the organization. The balance sheet of the organization is shown as follows:

**Table 4.17 Balance Sheet of NEA (Rupees in millions)**

Particulars	2010	2009	20088	2007	2006
<b>Capital and Liabilities:</b>					
Capital and Reserve:					
Share Capital	37953	33659	29609	26882	23113
Reserve and Accumulated Profit	(17951)	(12600)	(7577)	(5651)	(5545)
Secured Long Term Loan	60381	53788	51368	47616	46487
Deferred Tax	693	693	791	848	-
<b>Grand Total</b>	<b>81075</b>	<b>75540</b>	<b>73192</b>	<b>69195</b>	<b>64055</b>
<b>Assets:</b>					
Property, Plant and Equipment	84740	81238	52030	51781	51743
Capital Work in Progress	19511	13550	35699	29145	21991
Investment	3189	2139	1620	882	819
Sub Total	107441	96928	89350	81809	74554
Current Assets:					
Inventories	2635	2159	1800	1498	1354
Sundry Debtors and other Receivables	6533	4854	5721	5151	4088
Cash and Bank Balance	643	1724	1337	1447	1258
Prepaid, Advance ,Loan and Deposits	2789	2495	2319	2225	2293
Total Current Assets	12601	11233	11178	10322	8995
Less: Current Liabilities and Provisions:					
Sundry Creditors and Payables	34056	29221	25482	22119	19144
Provisions	4880	3330	2085	693	709
Total Current Liabilities and Provisions	38937	32552	27567	22812	19854
Net Current Assets	(26335)	(21319)	(16389)	(12489)	(10858)
Deferred Expenses	361	361	423	130	32
Inter Unit Balance( Net)	(391)	(430)	(192)	(255)	327
Total Deferred Expenses and Inter Unit Balance	(29)	(69)	231	(124)	359
<b>Grand Total</b>	<b>81075</b>	<b>75540</b>	<b>73192</b>	<b>69195</b>	<b>64055</b>

Source: Annual Report, NEA

The above table consists of the balance sheet of the NEA of last five years. Only the data of five years is taken in order to make the calculation simpler. The figure after the decimal in the original balance sheet is ignored to make calculation easier. This will not effect in the result of the analysis.

From this balance sheet of the NEA the common size balance sheet of the organization is prepared by comparing all the elements of the balance sheet with the grand total of the balance sheet. These are the percentages of the total amount of the balance sheet over the years.

The common size balance sheet of the NEA is presented below:

**Table 4.18 Common Size Balance Sheet of NEA**

Particulars	2010	2009	20088	2007	2006
<b>Capital and Liabilities:</b>					
Capital and Reserve:					
Share Capital	46.81	44.56	39.09	38.12	36.08
Reserve and Accumulated Profit	(22.14)	(16.68)	(10.35)	(8.17)	(8.66)
Secured Long Term Loan	74.48	71.20	70.18	68.81	72.57
Deferred Tax	0.85	0.92	1.08	1.23	-
<b>Grand Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Assets:</b>					
Property, Plant and Equipment	104.52	107.54	71.09	74.83	80.78
Capital Work in Progress	24.07	17.94	48.77	42.12	34.33
Investment	3.93	2.83	1.72	1.27	1.28
Sub Total	132.52	128.31	122.08	118.22	116.39
Current Assets:					
Inventories	3.25	2.86	2.46	2.16	2.11
Sundry Debtors and other Receivables	8.05	6.43	7.82	7.44	6.38
Cash and Bank Balance	0.79	2.28	1.83	2.09	1.96
Prepaid, Advance ,Loan and Deposits	4.67	3.30	3.17	3.22	3.58
Total Current Assets	15.54	14.87	15.27	14.92	14.04
Less: Current Liabilities and Provisions:					
Sundry Creditors and Payables	42	38.68	34.82	31.97	29.89
Provisions	6.02	4.41	2.85	1.01	1.11
Total Current Liabilities and Provisions	48.03	43.09	37.66	32.97	30.99
Net Current Assets	(32.48)	(28.22)	(22.39)	(18.05)	(16.95)
Deferred Expenses	0.45	0.48	0.58	0.19	0.05
Inter Unit Balance( Net)	(0.48)	(0.57)	(0.26)	(0.37)	0.51
Total Deferred Expenses and Inter Unit Balance	(0.04)	(0.09)	0.32	(0.18)	0.56
<b>Grand Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Here in the common size balance sheet we can see the trends of various items which are left out by the ratio analysis. From the common size balance sheet and the original absolute balance sheet of the NEA the various results are find out which are shown in the following points:

- The share capital of the NEA is in a continuously increasing trend from the year 2006 to the year 2010. This is the same case in the reserve and accumulated profit of the organization. The amount of loss is increasing from year to year. It has almost tripled in the size of the balance sheet in the year 2010 as compared to the year 2006. The share capital covers the half of the balance sheet. It is about 46% in the year 2010.
- The composition of the secured long term loan is about 71% in average in the balance sheet. The figure is slightly fluctuating. The amount of property, plant and equipment has increased in the late years dramatically. In the year 2010, the absolute figure has increased from year 2009. But in the percentage it has dropped a little. In the absolute figure it is continually increasing from each year but in the percentage it has dropped in the year 2007 than in the year 2006.
- In the capital work in progress the percentages are highly fluctuating. In the year 2006 it is 34.33 whereas it increases in the next two years and then drops drastically and reaches up to 17.94 in the year 2009. Then in the year 2010, it reaches up to 24.07. This trend is similar in the absolute figure also.
- The amount of investment is small in the balance sheet. It is 1.28 in the year 2002 and continues to rise and reaches up to 3.93 in the year 2010. This trend is similar in the absolute figure also.
- The amount of inventories has reached up to 3.25 from 2.11 in the year 2006. This increment is little. The composition of sundry debtors and other receivables in the balance sheet averages 7.22. This is fluctuating in different years.
- The organization has a very small portion of cash and bank balance. It ranges from 0.79 to 2.28 in last five years. The weakest is in the year 2010 where it drops from 2.28 of last year. Whereas the amount of prepaid expenses is increased in the last year. In the previous years it has remained quite consistent.
- As compared to the current assets of the organization the portion of the current liabilities is huge in this organization. The average portion of current assets is 14.93 whereas the portion of current liabilities is 38.54. The current liability is increasing from year to year. In the year 2006 it was 30.99 but it has reached up to 48.33 in the year 2010. Among the current liabilities the sundry creditors and payables has

huge part. It is 35.47 in average. It is also in increasing trend. In the year 2006, it was 29.89 and it has reached up to 42 in the year 2010. The portion of provision in the balance sheet has also increased almost six times in the last five years.

#### **4.6.2 Common Size Analysis of the Income Statement of NEA**

To do the common size analysis of the income statement of the NEA first of all we have to see the original absolute income statement of the organization and the income statement is changed into the common size income statement by converting every element of the income statement into the percentages of the total sales revenue of the income statement. Then it will be easier to compare the trend of the different figures of the income statement and to analyze them. So, first of all the original income statement of the NEA is presented as follows:

**Table 4.19 Income Statement of NEA (Rupees in Millions)**

Particulars	2010	2009	2008	2007	2006
Sales	17586	14405	15041	14449	13331
<b>Cost of Sales</b>	<b>12135</b>	<b>9935</b>	<b>9530</b>	<b>9034</b>	<b>8332</b>
Generation	1823	1119	979	855	811
Power Purchase	9078	7691	7437	6967	6391
Royalty	888	796	839	970	897
Transmission	345	328	274	240	232
<b>Gross Profit</b>	<b>5451</b>	<b>4470</b>	<b>5510</b>	<b>5415</b>	<b>4999</b>
Other Income	1124	1601	934	1016	639
Distribution Expenses	2867	2575	2110	1834	1703
Administration Expenses	797	651	683	479	419
<b>Profit from Operation</b>	<b>2910</b>	<b>2845</b>	<b>3651</b>	<b>4117</b>	<b>3515</b>
Interest	3204	2492	2274	2385	3050
Depreciation	2498	2361	1895	1856	1816
(Profit) Loss on Foreign Exchange	809	813	484	(493)	42
Street Light Dues Written Off	-	863	-	-	-
Provision for Losses on Property, Plant and Equipment	-	-	60	60	65
Provisions( including employees retirement benefits)	1550	1246	1354	-	-
Deferred Revenue Expenses Written Off	150	96	108	42	105
<b>Sub-Total</b>	<b>8211</b>	<b>7873</b>	<b>6176</b>	<b>3851</b>	<b>5080</b>
<i>Profit (Loss) from Operation in Current Year</i>	(5300)	(5027)	(2524)	266	(1565)
Prior Years (income) Expenses	50	163	(151)	(47)	(297)
<b>Net Profit (Loss) Before tax</b>	<b>(5350)</b>	<b>(5191)</b>	<b>(2372)</b>	<b>314</b>	<b>(1267)</b>
Provision For Tax	-	-	-	-	-
Deferred Tax Expenses ( Income)	-	(97)	(57)	73	-
<b>Net Profit (Loss) After Tax</b>	<b>(5350)</b>	<b>(5093)</b>	<b>(2315)</b>	<b>240</b>	<b>(1267)</b>

Source: Annual Report, NEA

Here in the above table the income statement of the NEA of the previous five years is presented. The figure after the decimal is ignored to make the calculation easier. This will not affect in the outcome of the analysis. Now from this income statement the common size income statement is prepared by comparing all the element of the income statement with the sales revenue. The figures calculated are the percentages of the total sales revenue. From

this analysis we will be able to find out the trend of the various items in the income statement and see their contribution pattern.

The income statement includes the figures up to the net profit after tax only because the figures after wards are not important in this thesis for analysis.

The common size income statement of the NEA is prepared and presented in the following table:

**Table 4.20 Common Size Income Statement of NEA**

Particulars	2010	2009	2008	2007	2006
Sales	100	100	100	100	100
<b>Cost of Sales</b>	<b>69</b>	<b>68.97</b>	<b>63.36</b>	<b>62.52</b>	<b>62.5</b>
Generation	10.37	7.77	6.51	5.92	6.08
Power Purchase	51.62	53.39	49.44	48.22	47.94
Royalty	5.05	5.53	5.58	6.71	6.73
Transmission	1.96	2.28	1.82	1.66	1.74
<b>Gross Profit</b>	<b>30.99</b>	<b>31.03</b>	<b>36.63</b>	<b>37.48</b>	<b>37.50</b>
Other Income	6.39	11.11	6.21	7.03	4.79
Distribution Expenses	16.30	17.88	14.03	12.69	12.77
Administration Expenses	4.53	4.52	4.54	3.32	3.14
<b>Profit from Operation</b>	<b>16.54</b>	<b>19.75</b>	<b>24.27</b>	<b>28.49</b>	<b>26.37</b>
Interest	18.21	17.29	15.12	19.62	22.88
Depreciation	14.2	16.39	12.60	12.85	13.62
(Profit) Loss on Foreign Exchange	4.6	5.64	3.22	(3.41)	0.32
Street Light Dues Written Off	-	5.99	-	-	-
Provision for Losses on Property, Plant and Equipment	-	-	0.39	0.42	0.49
Provisions( including employees retirement benefits)	8.81	8.65	9	-	-
Deferred Revenue Expenses Written Off	0.85	0.67	0.72	0.29	0.79
<b>Sub-Total</b>	<b>46.69</b>	<b>54.65</b>	<b>41.06</b>	<b>26.65</b>	<b>38.11</b>
<i>Profit (Loss) from Operation in Current Year</i>	(30.14)	(34.89)	(16.78)	1.84	(11.74)
Prior Years (income) Expenses	0.28	1.13	(1.01)	(0.33)	(2.23)
<b>Net Profit (Loss) Before tax</b>	<b>(30.42)</b>	<b>(36.04)</b>	<b>(18.16)</b>	<b>2.17</b>	<b>(9.51)</b>
Provision For Tax	-	-	-	-	-
Deferred Tax Expenses (Income)	-	(0.67)	(0.28)	0.51	-
<b>Net Profit (Loss) after Tax</b>	<b>(30.42)</b>	<b>(35.36)</b>	<b>(15.39)</b>	<b>1.67</b>	<b>(9.51)</b>

From the analysis of the common size income statement and the absolute figures as well the following things are noted.

- Among the cost of sales of NEA which is in average 65.27% of sales, the heaviest expense is the power purchase expenses. This expense is 50.12 in average. This expense is also rising and increasing

continually. The trend of generation expenses is fluctuating. It is highest in the year 2010. But in the absolute figure, it is continually increasing. The composition of royalty in the income statement is decreasing trend. In the year 2006, it was 6.73 and now it has reached to 5.05. In the absolute figure the transmission expense is increasing but in the percentages it is fluctuating. But it has a small contribution in the income statement. It is 1.89 in average.

- The amount of gross profit is in a decreasing trend. It is 37.5 in the year 2006 and in the year 2010, it is 30.99. In the absolute figure it is fluctuating. The other income in the income statement is also fluctuating. The highest is in the year 2009 with 11.11 and the lowest is in the year 2006 with 4.79. So this is the case of distribution expenses. It is 17.88 in 2007 and in the year 2006 it is 12.77.
- The administration expenses have remained consistent in the later years. Whereas in the year 2007, it has increased slightly. The amount of operating profit is decreasing continually from year 2007. In that year it has gained an increment. The amount of interest is heavy in the income statement. In the latest year it is even more than operating profit. But the largest is in the year 2006 with 22.88 but in that year there the operation profit was greater than the interest.
- There is the fluctuation in the amount of depreciation from year to year. In the year 2010 it is 14.2. The case of profit from foreign exchange is also very queer. In all the years it has loss except in the year 2007, there is profit and the amount of profit is similar to the previous year losses.
- The loss from the operation is increasing each year. It has doubled in the year 2009 as compare to the year 2008. The loss has decreased in the percentage in the year 2010, whereas in the absolute figure it has increased. Year 2007 has small profit from operation with 1.84.
- The organization has no tax payment so the condition of NPAT is also similar to the NPBT and the profit from operation.

#### **4.7 Sales Forecast of NEA Using Time Series.**

Time series forecast is used to create the forecast of any variables as taking the time as the independent variable and the other variable as a dependent

variable. This forecast assumes that the trend of the variables will continue in the future as past. This forecast helps to predict the future by the help of the past.

The sales forecast of the NEA is important because this helps us to know what will be the financial position of the NEA in the future and how it should cope with the change. Sales is the primary figure, by the help of the sales amount we can find out the other figures. Sales is used as the base of the prediction of the other variables in the financial analysis such as profit etc.

Here the sales forecast of the NEA is done by the help of the time series analysis of the figures:

**Table 4.21 Sales Forecast of NEA Using Time Series**

Year (X)	Sales(y)	x(X-2006)	x <sup>2</sup>	xy
2001	8160	-5	25	-40800
2002	9476	-4	16	-37904
2003	11012	-3	9	-33036
2004	11874	-2	4	-23748
2005	12605	-1	1	-12605
2006	13331	0	0	0
2007	14449	1	1	14449
2008	15041	2	4	30084
2009	14405	3	6	43215
2010	17586	4	16	70344
n =10	∑y= 127939	∑x= -5	∑x <sup>2</sup> = 85	∑xy= 9999

To forecast the sales of the NEA by the help of the time series first of all we have to find out the straight line trend of the sales and year. So the straight line trend of the sales on the independent variable of time is given by:

$$y = a+bx..... (1)$$

Where y is the dependent variable or the sales, x is the independent variable or the time in this case, a and b are the parameters of this equation. So to forecast the value of y by knowing the value of x first of all we must find out the values of a and b of this equation.

The values of a and b is found out by using the following formula:

$$a = \frac{\sum y}{n}$$

$$= \frac{127939}{10}$$

$$= 12793.9$$

$$b = \frac{\sum xy}{\sum x^2}$$

$$= \frac{9999}{85}$$

$$= 117.63$$

Therefore the regression equation of Y on X becomes:

$$y = 12793.9 + 117.63x$$

By the help of this equation we can forecast the value of Y if we have the value of x. here the X is time or year. The y is the sales revenue of the organization. In the following table we are going to find out the value of sales revenue by using the equation that we have find out using time series straight line trend.

**Table 4.22 Forecast of Sales Revenue of NEA using Trend Line**

Year ( X)	x ( X-2006)	y= 12793.9+117.63x
2011	5	13382
2012	6	13499
2013	7	13617
2014	8	13735
2015	9	13853

In the above table we have seen the amount of sales revenue predicted in the future five years with the help of the time series analysis. The amount of sales is increasing in the table. But the ratio of the increment is very low. This trend is not fruitful to the organization because the organization is in heavy loss condition and the sales increment is not enough to cover the losses.

#### 4.8 Prediction of the Future Profit of the Organization with the Help of Regression Analysis

This figure of sales forecast can be used to predict the net profit of the organization in the future. The organization currently has net loss. By the prediction we can be able to know whether the organization continually suffers from loss or it will be able to generate profit in next coming years.

To predict the net loss or profit from the sales forecast of the organization we need the regression equation between the sales and the net profit of the organization. So in the following table the regression equation between the sales and the net profit is calculated.

**Table 4.23 Regression Equation between Sales and NPAT**

Year	Sales(X)	NPAT (Y)	XY	X <sup>2</sup>
2001	8160	(51)	(416160)	66585600
2002	9476	(860)	(8149360)	89794576
2003	11012	(1953)	(21514144)	121264144
2004	11874	(1760)	(20898240)	140991876
2005	12605	(1312)	(16537760)	158886025
2006	13331	(1267)	(16890377)	177715561
2007	14449	240	3467760	208773601
2008	15041	(2315)	(34819915)	226231681
2009	14405	(5093)	(73364665)	207504025
2010	17586	(5350)	(94085100)	309267396
N =10	∑X= 127939	∑Y= (19721)	∑XY= (283207961)	∑ X <sup>2</sup> = 1707014485

First of all let the regression equation of Y on X be

$$Y = a+bX..... (1)$$

Where Y represents the net profit of NEA and X represents the sales revenue of NEA. A and b are the parameters of this equation. To calculate the value of a and b of this equation we may find the two more equation from the equation 1 with the help of least squares method. The two equations are presented below:

$$\sum Y = na + b\sum x..... (2)$$

$$\sum XY = a\sum X + b\sum X^2..... (3)$$

Here putting the values in the equation 2 and 3 it becomes as follows:

$$(19721) = 10a + 127939b \dots\dots\dots (2)$$

$$(283207961) = 127939a + 1707014485b \dots\dots\dots (3)$$

Then by solving the equations 2 and 3 we get the values of a and b.

To solve the above equations first of all multiply the equation 3 by 10 and equation 2 by 127939 and subtract the equation 3 from 2 we get the following:

$$(2523085019) = 1279390a + 16368387720b$$

$$\begin{array}{r} (2832079610) = 1279390a + 17070144850b \\ \hline 308994591 = -701757130b \end{array}$$

Therefore,  $b = -0.4403$

Again  $a = 3661$

Then the required regression equation of Y on X becomes:

$$Y = 3661 - 0.4403X$$

By the help of this regression equation the future profit of the organization can be forecasted. The sales forecast is already done with the help of time series analysis. The forecasted profit of NEA is given below in the following table:

**Table 4.24 Forecast of Future Profit of NEA with the Help of Regression Equation**

Year	Forecasted Sales	Forecasted Profit
2011	13382	(2231)
2012	13499	(2283)
2013	13617	(2335)
2014	13735	(2386)
2015	13853	(2438)

From the above table we can find out that the future profit will be in negative throughout the five years. That means there will be loss in the organization in the future. The loss is continuing to increase in the future. This situation shows that the organization should focus in improving the cost condition of the organization and increase in the sales volume of the company. The main problem is that no matter how much the sales increase, the regression equation shows that it will increase the loss. So there is a dysfunction in the cost structure of the organization. The organization should improve this situation.

#### **4.9 Findings of the Study**

The major findings of the studies are as follows:

1. The liquidity position of the NEA is found out to be as follows:
  - The current ratio is 0.539:1 in average. The amount of current assets is less than the current liabilities in all of the last ten years. This ratio is in decreasing trend
  - The quick ratio of the NEA is 0.292:1 in average. This ratio is much lower than the ideal quick ratio of 1:1 in all the last ten years. This ratio is also in the decreasing trend.

In general the organization has a poor liquidity position. The organization has a risk of being insolvent at any time if any corrective major is not taken very soon.

2. The leverage ratios of NEA or the situation of the long term financial position of the organization is as follows:
  - The debt equity ratio of NEA is 2.546:1 in average. It shows that the organization has used debt as a major source of funding in all the last ten years. This ratio is highest in the last year with a ratio of 3.053:1.
  - The debt to total capital ratio is 71.1% in average. This ratio is also increasing in the later years.
  - The interest coverage ratio is 0.305:1 in average. The organization is unable to earn profit even to cover its interest expenses. This ratio is negative in the past three years.

3. The activity ratios or the asset management of NEA or the resource utilization of the organization:

- The receivables turnover ratio of the organization is 2.34 times in average. At the beginning of the year 2001, it is 4.9 times and at the end of the year 2010 it has reached to 2.7. So we can say that it is decreasing from year to year.
- The fixed assets turnover ratio of the organization is 0.17 in average. This ratio is relatively consistent in every year. The investment in the fixed assets is doubled in these 10 years. It is unable to produce adequate sales.
- The capital employed turnover ratio of the NEA is 0.197 in average. This is a low ratio. The ratio is increasing trend but this is not enough because the actual ratio itself is so low that this increment will not help for a long time.

4. Profitability Position of NEA

- The gross profit ratio of the organization is 39.18% in average. The highest percentage is 51.4% in the year 2003 and the lowest percentage is 31% in the year 2010. There is a high fluctuation in this ratio over the years.
- The net profit ratio of the organization is -12.4% in average. So there is a net loss in this organization. In the year 2007, the ratio is 2.2%. Whereas in all the other years of the last ten years, it is negative. This is a very unusual phenomenon. The profit from foreign exchange has played an important part to create profit in that year.
- The return on assets of the NEA is -2.13 % in average. This ratio is negative in all the years in the past ten years except in the year 2007. The negative return is increasing from year to year. It has reached up to -4.46% in the year 2010.
- The return on equity of the NEA is -10.55% in average. There is less increase in the equity but high decrease in the profit. This ratio has reached up to -26.74% in the year 2010.

## 5. Growth Possibility of the NEA

- The sales growth rate of the organization is 1.092 in average. This is a poor growth rate for a large organization like this which has a large scope for growth. This ratio is relatively consistent over the years which show that the organization has done no extra effort to increase its sales in the last ten years.
- The total capital increase rate of the NEA is 1.047 in average. This ratio is increasing consistently. This means that the organization is focusing in increasing in its capital whether it gives some benefit or not.
- The net profit increase rate of the NEA is not possible because the organization has net loss in almost of the years observed. Therefore the calculated figure is the net loss increase rate of the organization. The net loss increase rate is 1.683 in average. This is huge growth rate as compared to the other growth rates of the organization. This ratio is highly inconsistent. In the year 2002, the net loss is increased by 16.86 times whereas in the year 2007, there is a small amount of profit so the growth rate is in negative.
- The consumers increase rate of the NEA is 1.107 in average. It is consistent and almost seems automatic. This shows that the organization does not have any campaign to increase its consumers and there is not any effort.

6. There is a negative and a very less correlation between the sales growth rate and the total capital increase rate. The correlation coefficient is -0.061. So the effect of capital increment is not seen in the increment of the sales volume.

7. The sales forecast of the NEA shows that the sales of the NEA will to continue to grow at a slow rate in the future. According to the straight line trend prediction, it will reach up to 13853 millions in the year 2015.

8. The regression equation between the sales and the NPAT shows that the increase in the sales will continue to increase in the net loss of the organization. So there is a cost dysfunction in the organization. The net loss will continue to increase no matter how much will be the sales. The net loss will increase up to 2483 million in the year 2015.
  
9. The common size analysis of the NEA's balance sheet and the income statement presented the following findings:
  - The balance sheet of the NEA has a heavy contribution of secured long term loan averaging about 71%. It is more than the share capital of the organization. It is also increasing rapidly in the later years.
  - The portion of capital work in progress in the balance sheet is fluctuating. The portion of investment in the balance sheet is very small.
  - The organization has very small amount of cash and bank reserve. The weakest is in the year 2010 with 0.79%.
  - The organization has double amount of current liabilities as compared to its current assets. Among the current liabilities the largest is the sundry creditors and payables.
  - NEA has power purchase expenses heavier than the generation expenses among the cost of sales. It is about 50.12 in average.
  - The gross profit of NEA is decreasing; the operating profit is also decreasing.
  - NEA has a high amount of interest in the balance sheet. In the later years, it is more than the profit from operation.
  - The profit from the foreign exchange plays an important part in the profit from the operation.
  - The organization has a negative NPBT and NPAT in almost of all years. It is increasing rapidly.

## **Chapter 5**

### **Summary, Conclusions and Recommendations**

In the previous chapters in this report the introduction of the study and the general background of the study are found out. In that chapter itself the research problems, the objectives of the study, the significance of the study is also presented with some of the limitations of the study. Again some of the review of the previous studies and the conceptual reviews are presented in the second chapter named literature review. Then the research methodology used in this report is highlighted in the third chapter research methodology. After doing all this, the main body of the report the data presentation and analysis is done in the fourth chapter. In that chapter the ratio analysis of the organization is done with various ratios. Then the ratios are analyzed by correlation, regression, and trend analysis. The common size analysis of the organization is also done to find out the trends of the different items in the balance sheet and the income statement of the organization. So after completing all the works the findings of the report is also presented in the same chapter.

Now the following chapter aims to present the summary of the report, the conclusions drawn from the analysis and the recommendations given based on the findings of the analysis. These are shown below in the separate headings:

#### **5.1 Summary**

The financial analysis meaning the analysis of the financial statements of the organization which comprises of the balance sheet and the income statement is useful for the periodical review of the activities of the organization and results achieved by it. This analysis is useful to various parties involved in the organization. And the type of analysis varies according to the specific interests of the party involved. One of the major tools of financial analysis is ratio analysis. This analysis helps to find out the liquidity position, the assets management position, the leverage risk situation, the profitability position and other many analysis of the management performance of the

organization. Another tool of analysis the common size analysis is also used simultaneously with ratio analysis to find out the trend of the different figures of the organization.

Nepal used to have a large number of public enterprises which are gradually being privatized. Among them the NEA is one of the public enterprises which are going through a financial crisis and poor management. It is also suffering from heavy political interference. Even though it has monopoly in the business, it is in a verge of collapse due to heavy loss suffered by it in the recent years. This situation can't be borne by Nepal as all the Nepalese are dependent on this organization. NEA has a potential to grow but it is being unable to grasp this opportunity. There is a huge public disappointment in this organization due to the ever growing problem of load shedding. The government also couldn't support this organization continually. So the organization itself should find the solution for this problem. Established in the year 2042 B.S. the organization has clear-cut objectives and responsibilities but it is not sure whether it has fulfilled its objectives and responsibilities or not.

So this study is done to analyze the financial performance of the NEA. The performance in terms of the profitability, liquidity, assets management or activity, leverage risk, growth possibility is analyzed with the help of ratio analysis and common size analysis. The future performance of the organization is also predicted. This became very important in this study because the questions about the true present performance of the organization and the future financial performance of the organization became vital. So to analyze, predict and to recommend on the basis of the findings was the main objectives of the research.

The previous studies about the same topic of the same organization all the researchers has used the ratio analysis only for the analysis of the financial condition. The previous researchers has used only limited ratio. They have not touched the growth possibility ratios which this report has touched. The previous researchers has not done the common size analysis of the organization so in this report the common size analysis of the balance sheet and the income statement is also touched. The previous reports have the similar kinds of findings and the recommendations which is tried to expand in this report.

To analyze the financial ratios the statistical tools such as the mean, standard deviation, the correlation, the regression analysis and the trend projection is used.

First of all the liquidity ratio of the organization is analyzed. In that analysis the current ratios and the quick ratios are analyzed. The current ratio of the organization is found out to be 0.539:1 in average. The current ratio of the organization is in a continuously decreasing trend. The lowest ratio is found out to be in the year 2010 with a ratio of 0.324:1. In almost of all the years the current assets is found to be less than the current liabilities. Then the quick ratio of the organization is analyzed. The quick ratio of the organization is found out to be in average 0.292:1. The highest quick ratio is in the year 2001 with a ratio of 0.455:1 and the lowest quick ratio is in the year 2010 with a ratio of 0.184:1. The quick ratio is in a decreasing trend just as the current ratio of the organization. In none of the years the quick ratio has meet the standard ratio of 1:1.

Then the leverage position of the organization is analyzed by the help of different leverage ratios such as the debt equity ratio, debt to total capital ratio, the interest coverage ratio. The leverage position is analyzed to find out the risk of being insolvent to pay the interest and the principal of the organization. The debt equity ratio of the organization is found out to be 2.546:1 in average. This ratio is in continuously increasing trend. The significant features of this ratio is that amount of debt has tripled in the year 2010 as compared to the year 2001. The debt to total capital ratio is found out to be 0.711. in average. The ratio has a consistent increasing trend since the year 2006. Before this year the ratio has been fluctuating in the year 2003 to the year 2006. The interest coverage ratio of the organization is found out to be 0.305 in average. This ratio has a continuously decreasing trend throughout the years. The ratio has reached to the negative in the later 3 years.

The activity or the assets management position of the organization is analyzed by using the ratios such as the debtors turnover ratio, the fixed assets turnover ratio and the capital employed turnover ratio. The debtors turnover ratio shows that the average debtors turnover ratio is 3.34. This ratio has shown a decreasing trend. In the year 2001 it was 4.9 and up to the year 2010 it has reached to the 2.7. The fixed assets turnover ratio is found

out to be 0.17 times in average. This ratio has shown a relatively consistent trend. This ratio ranges from 0.15 to 0.19 on all these ten years. The capital employed turnover ratio is found out to be 0.197 in average. This ratio shows the consistent trend. The ratio fluctuates in between the 0.15 to 0.22 from start of the ten years to the latest.

The profitability position of the organization is shown by calculating the gross profit ratio, the net profit ratio, the return on assets and the return on equity. The gross profit ratio of NEA is found out to be 39.18% in average. In the beginning of the year 2001 the ratio is 45.1%. The ratio reaches to its maximum in the year 2003 with a ratio of 51.4%. This ratio then starts to fluctuate and decline. The net profit ratio of NEA is found out to be -12.4% in average. In the year 2001 the ratio was -0.02%. The ratio has become positive in only one year that is the year 2007 in that year it is 2.2%. The highest negative ratio is in the year 2009 with a ratio of -36%. In the later years the amount of net loss is decreasing rapidly so the negative ratio is increasing rapidly. The return on assets of the NEA is -2.13% in average. The ratio is found to be in negative in almost of all years except the year 2007. In that year the ratio has found out to be 0.26%. The largest negative ratio is in the year 2009 with a ratio of -4.71%. The ratio is equal to -4.46% in the latest year that is the year 2010. So we can see that the ratio is decreasing rapidly. Just like the return on assets the case of the return on equity is also similar. The return on equity is -10.55% in average. The highest ratio is in the year 2010 with a ratio of -26.24%. The ratio is in positive in only one year which is the year 2007 with a ratio of 1.16%. The ratio is in continuously increasing in negative figures up to the year 2007. In that year it has become positive and from then the ratio again starts to increase in the negative figures.

The growth possibility of the NEA is found out by calculating some ratios such as the sales increase rate, the total capital increase rate, the net profit increase rate and the consumers increase rate. The sales growth rate of the NEA is found out to be 1.092 in average. The ratio was 1.16 in the year 2002 and in the year 2010 the ratio has become 1.22 which is the highest ratio. The ratio is then found out to be rather consistent and on a small figure. The total capital increase rate of the NEA is found out to be 1.047 in average. The ratio was 1.017 in the year 2002 and in the year 2010 the ratio has become 1.073. The highest ratio is in the year 2006 with a ratio of 1.091. So

this ratio is also found out to be relatively consistent. The net profit increase rate of the organization is found out to be 1.683 in average. In the year 2002 the ratio was 16.86. In the year 2007 the ratio was -0.189. Because the organization has net loss except of the net profit in almost of all year the calculated figure is the net loss increase rate. The ratio has shown a high fluctuation because in one year the organization has earned profit and in all of the other years in the last five years the organization has born loss. The consumers increase rate of the NEA is found out to be 1.017 in average. In the year 2002 the ratio was found out to be 1.186 which is the highest ratio and in the year 2010 the ratio has become 1.11. This ratio is found out to be relatively consistent throughout the last ten years.

To see the relationship between the sales growth rate and the total capital increase rate the correlation coefficient between the two figures are calculated. The correlation coefficient of the two variables is -0.398. This shows that the two variables have a negative correlation that means if there is an increase in one variable there will be decrease in the other variables. The coefficient is a very small figure so that we can say that the variables do not correlate to each other as the calculated coefficient is near to the 0.

To find out the trend of the other items in the balance sheet which are not covered by the ratio analysis the common size analysis is done. In this analysis first of all the common size balance sheet and the common size income statement is prepared. Then the figures in them are analyzed finding out the trend of the figures and also looking at the absolute figures of the original balance sheet and income statement. The common size analysis is done for the last 5 years ending the year 2010. In the common size balance sheet the amount of the share capital is found out to be 46% in average. This figure is increasing from year to year. The amount of loss in the balance sheet has tripled since the year 2006 to the year 2010. The amount of loss is increasing in the years rapidly. The contribution of the long term loan is found out to be 71% in average of all the years. This is fluctuating in all the years. The contribution of the plant and equipment has increased dramatically in the balance sheet. The percentage of the capital work in progress is fluctuating highly.

The portion of the investment is small in the balance sheet. It is 1.28 in the year 2006 and 3.93 in the year 2010. The figures of inventories, debtors or

receivables are on small figures in the balance sheet and there values are fluctuating. The organization is maintaining a very small amount of cash and bank balance. The percentage of the prepaid is very consistent in the balance sheet. The balance sheet has a very high amount of current liabilities and a very low amount of current assets. The current liability is 38.54 in average and the current assets are 14.93 in average. The amount of current liabilities is increasing rapidly. Among the items of the current liabilities the sundry creditors is the biggest. The contribution of the provision in the balance sheet has increased six times in the balance sheet in the last five years.

In the common size income statement of the NEA the cost of sales has a contribution of 65.2%. Among the cost of sales the power purchase expense is the heaviest. It is 50.12 and it is increasing every year. The amount of gross profit in the income statement is decreasing each year. The percentage of other income is fluctuating in the income statement and so is the case of the distribution expenses. The administration expense in the income statement is relatively consistent. The operating profit is decreasing each year. The interest expense is heavy. It is more than the operating profit in the later year. The amount of depreciation is fluctuating. The foreign exchange gain is also queer. It is loss in almost all years except in one year it is profit. The organization has not paid any tax in the last five years. So the NPBT and the NPAT both are in negative and it is increasing every year.

To find out the future financial position of the NEA the sales forecast of this organization is done. This forecast shows that the sales will increase in a slow pace every year. The amount of sales will reach up to 13853 million in the year 2015. To predict the future profit of the organization the regression equation between the sales and the net profit is found out. The equation was found out to be  $y = 3661 - 0.4403x$ . In this equation the y refers to net profit and x refers to the sales. By using the same equation the future profit of the organization will be -2438 million in the year 2015. This loss will continue to increase each year.

## **5.2 Conclusion**

The liquidity position of the NEA is very weak. The current ratio is generally accepted as 2:1 but here in this organization it is not even half of it and it is continuously decreasing. So is the case of quick ratio. It is much less than the

accepted standard. The organization is running in a high risk of insolvency. At any time the organization can face a crisis situation. It unexpected and sudden change occurs in the organization then the organization will be unable to meet the requirement. There is a danger of hamper in the day to day operation. The organization should maintain a good liquidity position that it should invest in the current assets much ad try to pay the current liabilities as soon as possible. But in the near future it seems impossible because the organization currently running from heavy loss and it will be difficult for this organization to collect fund to invest in the current assets and short term assets.

Again not only in the case of short term obligations, the organization is at risk even in the long term debt of the organization. According to the analysis of the leverage ratios, the organization is using a heavy amount of debt. It is more than double and even triple in the last year as compared to the portion of the equity of the organization. This situation further adds the risk of insolvency and danger of liquidation. The management might get a pressure from the provider of outside capital and due to the heavy losses it is certainly not will be able to repay the principal in time. This will create problem to the organization. By the analysis it is clear that the organization is currently not earning enough profit even to pay the annual interest. The organization is in loss even before payment of interest in the later years. And the heavy portion of interest in the organization further increases the loss and it is drastically reducing the net worth of the organization.

The organization is weak in the assets management area as well. The assets of the organization are being unable to produce adequate sales. The debtors turnover ratio of the organization is decreasing each year. It has become almost half during the last ten years. This shows that the organization is losing its capabilities to collect its receivables in time. If this situation continues further then there may arise some problem in the organization. The organization has a huge investment in the fixed assets but the return is very low as compare to it. So it seems that most of the assets invested remain idle and useless. The composition of assets is dominated by the idle property. The organization has to invest in those assets which give maximum return. This case is similar in the capital employed turnover. The return is low. The organization is unable to generate as much sales as it should minding it is a large organization with a huge investment.

The profitability condition of the organization is the weakest. Earlier in the ten years the organization used to have a good gross profit margin. But this has reduced in the later years. And it is continually decreasing. There is a situation of net loss in every year. The amount of net loss is increasing every year. There is a negative return on the assets and the equity due to this. In one year there is profit but that is due to gain from the foreign exchange. This will not help in earning profit every year. If we see the cost structure of the organization; it is unable to cover cost from sales. The revenue is much less than the cost. The amount of cost is increasing each year so the situation tends to worsen more in the future. The future of the organization seems gloomy in the case of financial health.

To have a better future an organization must have a good growth possibility. It seems from the outside that this organization has a large market uncovered. It is a sole monopoly in this business and it has a great possibility to grow and expand. But in reality the organization is unable to capture this opportunity. The sales of the organization is growing invisibly. The total capital is increasing at a constant low rate and instead of net profit the net loss of the organization is increasing rapidly. Even the number of consumers of the organization is not increasing satisfactorily minding the fact that a large number of Nepalese people stay in darkness (there is no electricity). The increase seems automatic and no effort from the side of the organization. There seems a negative and a very low correlation between the sales growth and the total capital increase rate which is rather unusual because it is supposed that the increase in the capital should lead in the increase of the sales of the organization.

The organization has a heavy portion of debt as long term loan in its balance sheet. The accumulated loss is increasing year by year. The organization has a less balance of cash; the amount of current liabilities is huge in the balance sheet. The power purchase expense is heavy than all other cost of sales. The amount of gross profit is decreasing whereas the net loss of the organization is decreasing rapidly. This entire situation shows that the organization is in a bad financial condition. It is even hard to believe how it has survived all these years. The continuous degradation in the situation shows negligence in this matter fact. This kind of attitude of the management to this very important organization of this nation is depressing. The sales forecast shows that the sales will grow at a slow pace as usual and the regression equation

between the sales and the NPAT shows that the loss will continue how much there will be sales because the per unit cost of the sales is higher than the per unit selling price of the sales.. This situation is the worst because to survive either the organization has to increase the selling price or either it should reduce its cost. By far, the both options seem impossible. The increment in the selling price will burden in consumers who are already in suffering. The reduction in cost is impractical because it is in an increasing trend.

Overall the organization is surely growing through a heavy financial crisis. Just like the public guessed the organization has a serious problem inside. There should be a rapid crash action to be taken to solve this problem. The organization cannot do this alone. It needs the help of the government. The government has announced a plan. It should be sincerely followed. The organization need financial support from the government otherwise there is a danger of chaos and risk of bankruptcy. The organization should have a corporate and management restructuring. The management practice should be swift and professional. This is not led by the beaurocracy. This is the most important time for this organization. The repair and renovation should have started much earlier and it has not happened. At this time it has become absolutely necessary. The organization cannot survive another decade of loss and failure. The organization should prepare a master plan to this improve situation and then strictly follow that otherwise this chaotic situation will further lead this organization towards danger.

### **5.3 Recommendations**

Based on the findings of the study and the conclusions drawn out from it, there are the following recommendations provided to the organization.

#### **1) Improvement in the liquidity position**

To improve the liquidity position of the organization the organization should invest more in the current assets. The organization should pay the excess current liabilities. It should keep more cash and bank balance. The organization should focus in the collection of the account receivables in time. For this a receivable collection plan can be prepared. The swift management of inventories can also help.

## **2) Capital Restructuring**

The organization should urgently reduce the loan portion in the balance sheet. For this the organization capital restructuring will help. The organization should increase the equity. The loan should either be paid off or converted into the equity. From that the organization will reduce burden of interest and capital repayment.

## **3) Improvement in Receivables Collection**

The organization can increase the receivables turnover by employing a better receivables collection technique. It can employ the use of discounts and rebates, fine and penalties, the system of power cut at once, focusing in big corporate users and government users which are delaying the payment etc.

## **4) Better Capital Budgeting**

To generate more sales from the fixed assets the organization can use a capital budgeting technique. By this method the organization can invest only on those projects which yields more income or which income exceed its cost. The organization is suffering from high unit cost of production. This problem can all be solved through this.

## **5) Use of Profit Planning**

The organization can use an intensive profit planning and control system and strictly apply this which will help the organization to focus in generating profit.

## **6) Use of Standard Costing**

The organization should use a standard costing system to control the unnecessary cost and to reduce it to a minimum.

## **7) Minimize Leakage and Theft**

The organization should focus in minimizing the electricity leakage and theft. It should strictly monitor it and establish a strict system of punishment.

**8) Free from Government Interference**

The organization should be free from government interference. It should work and operate freely. The government should stay as a care taker and facilitator and help it when necessary.

**9) Use of Professional Management**

The organization should use a professional management. The executives should be chosen from competition. There should be no or minimal use of beaurocracy in this organization.

**10) Better Market Coverage**

To cover the remote market, the rural electrification plan should be extensively used. All the Nepalese should have the access to the electricity.

**11) Focus in Size of the Projects**

The organization should focus on the small and medium scale power plants which have a small gestation period and low capital need. In order to solve the load shedding problem currently and focus and plan on large projects for future.

**12) Concentrate on the Cost Of Sales**

The organization should focus on generation power itself as the generation expenses is much lower than the purchase expense. It should try to generate power through internal capital as far as practicable.

**13) Alternative Use of Assets**

The organization can find an alternative use of its idle assets as it has a large investment in property and earn some revenue from it.

**14) Better HRM**

The employee and human resource management system of the organization be related to the goals of the organization. It should not be taken as a place to hire unrelated people through influence.

**15) Adjustment in the Sales Price**

The sales price of the organization should be adjusted accordingly. It should be modified in a regular basis because this practice will increase less and will be beneficial to cover cost rather than increasing heavily in large gap and creating public rivalry. The selling price should be able to cover all costs.

**16) Improvement in the Staffing Technique**

The organization should use minimal and quality staff and reduce overstaffing. Rather it can increase the employee benefits and fringes which will motivate them to work had.

**17) Create Consumer Satisfaction**

The organization can employ a consumer awareness campaign to create consumer satisfaction. For this the organizational operation should be consumer friendly.

## BIBLIOGRAPHY

### Books

Bajracharya, P., Ojha, K.P., Goet, J., & Sharma, S.(2004). *Management Accounting*. Kathmandu: Asmita Books Publishers and Distributors.

Dangol, R., & Dangol, J.(2061). *Management accounting*. Kathmandu: Teleju Prakashan.

Dangol, R., & Dangol, J.(2063). *Accounting for financial analysis and planning*. Kathmandu: Taleju Prakashan.

Joshi, P.R.(2063). *Research methodology*. Kathmandu: Buddha Academic Publication.

Kaplan, R.S., & Atkinson, A.(2000). *Advanced management accounting*. New Delhi: Prentice Hall of India Pvt. Ltd.

Munamkarmi, S.P.(2003). *Accounting for financial analysis and planning*. Kathmandu: Educational Publication House.

Munamkarmi, S.P.(2003). *Management accounting*. Kathmandu: Buddha Academic Publishers and Distributors.

Pandey, I. M.(1995). *Financial management*. New Delhi: Vikas publishing House Pvt. Ltd.

Parsons, C.J.(1973). *Thesis and project work: A guide to research and writing*. London: George Allen and Unwin.

Pradhan, R.S.(2004). *Financial management*. Kathmandu: Buddha Academic Publishers and Distributors Pvt. Ltd.

Saunders, M., Lewis, P., & Thornhill, A.(2003). *Research methods for business studies*. New Delhi: Pearson Education.

Sharma, P.K., & Chaudhary, A.K.(2064). *Statistical methods*. Kathmandu: Khanal Books and Stationary.

Van horne, J.C. & Wacholwick, J.M. *Fundamentals of financial management*. Delhi: Pearson Education.

Wagle, K.N., & Dahal, R.K.(2004). *Management accounting*. Kathmandu: Khanal Books and Stationary.

Weston. J., Scott, B., & Brigham, E.F.(1996). *Essentials of managerial finance*. Fartworth :The Dryden Press.

Wolff, H.K., & Pant, P.R.(2008). *Social science research and thesis writing*. Kathmandu: Buddha academic Publications.

### **Master Degree Thesis (Unpublished)**

Aryal, Pratima. (2008). *A comparative ratio analysis of public utility sectors with reference to Nepal Electricity Authority and Kathmandu Upatyaka Khanepani Limited*, T.U, Kathmandu, Nepal

Gaire, Bishnu .(2009). *A study on financial performance of Nepal Electricity Authority*. T.U, Kathmandu, Nepal

Jha, Sanjit Kumar. ( 2008). *Profitability analysis of Nepalese public utility enterprises with special reference to Nepal Electricity Authority, Nepal Water Supply Company and Nepal Telecom*. T.U, Kathmandu, Nepal

Kandel, Narendra.(2001), *Profit planning in Nepalese utility concern ‘ A case study of Nepal Electricity Authority*. T.U, Kathmandu, Nepal

Karn, Diwakar Lal.(2004), *Profit planning and control: A case study of Nepal Electricity Authority*. T.U, Kathmandu, Nepal

Kayastha, Rijhuma. (2010), *A Study on customer satisfaction of Nepal Electricity Authority (NEA)*. T.U, Kathmandu, Nepal

Khatri, Dipak .(2009).*A study on revenue planning and cash management in Nepal Electricity Authority*. T.U, Kathmandu, Nepal

Phokharel, Kaushila.(2009). *Financial performance analysis of Nepal Electricity Authority*. T.U, Kathmandu, Nepal

Shrestha, Suraj .(2010). *A study on cash flow analysis of Nepal Electricity Authority*. T.U, Kathmandu, Nepal

## Appendices

### 1. Calculation of Shareholder's Equity of NEA

Year (1)	Share capital (2)	Reserve and Accumulated Profit (3)	Shareholders' equity (4= 2+3)
2001	15360	1626	16986
2002	16601	696	17297
2003	16976	(1269)	15707
2004	18215	(2997)	15218
2005	20161	(4294)	15867
2006	2343	(5545)	17568
2007	26382	(5651)	20731
2008	28609	(7577)	21032
2009	33659	(12600)	21059
2010	37953	(17951)	20002

Source: Annual Report, NEA

### 2. Calculation of Long Term Debt of NEA

Year (1)	Secured Long Term Loan (2)	Deferred Tax (3)	Long Term Debt (4= 2+3)
2001	36707	-	36707
2002	37325	-	37325
2003	39637	-	39637
2004	41103	-	41103
2005	44537	-	44537
2006	46487	-	46487
2007	47616	848	48464
2008	51368	791	52159
2009	53788	693	54481
2010	60381	693	61074

Source: Annual Report, NEA

### 3. Calculation of Capital Employed of NEA

Year (1)	Share Capital (2)	Reserve and Accumulated Profit (3)	Long Term Debt (4)	Capital Employed (5= 2+3+4)
2001	15360	1626	36707	53693
2002	16601	696	37325	54622
2003	16976	(1269)	39637	55344
2004	18215	(2997)	41103	56321
2005	20161	(4294)	44537	60404
2006	23113	(5545)	46487	65956
2007	26382	(5651)	48464	69195
2008	28609	(7577)	52159	73191
2009	33659	(12600)	54481	75540
2010	37953	(17951)	61074	81076

Source: Annual Report, NEA

### 4. Calculation of Total Assets of NEA

Year (1)	Fixed Assets (2)	Current Assets (3)	Total Assets (4= 2+3)
2001	52395	6313	58708
2002	56471	7322	63793
2003	59363	7690	67053
2004	62747	7883	70630
2005	69003	8491	77494
2006	74554	8995	83549
2007	81809	10322	92131
2008	89350	11178	100528
2009	96928	11233	108161
2010	107441	12601	120042

Source: Annual Report, NEA