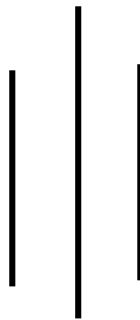


**REVENUE PLANNING AND ITS IMPACT ON PROFITABILITY  
A CASE STUDY OF NEPAL ELECTRICITY AUTHORITY**

**By**

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**A Thesis Submitted to:  
Office of the Dean  
Faculty of Management  
Tribhuvan University**



***In partial fulfillment of the requirement for the Degree of Master of  
Business Studies  
(M.B.S.)***

**Janakpur Dham, Nepal  
June, 2009**

# **RECOMMENDATION**

This is to certify that the Thesis

**Submitted By**

**Gobinda Kumar Sah**

Entitled

**Revenue Planning and its Impact on Profitability**

**A Case Study of Nepal Electricity Authority**

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

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**Revenue Planning and its Impact on Profitability**

**A Case Study of Nepal Electricity Authority**

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

**Master's Degree in Business Studies (MBS)**

Viva-Voce Committee

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Date:

## **DECLARATION**

I hereby declare that the work reported in this thesis entitled “**Revenue Planning and its Impact on Profitability A Case Study of Nepal Electricity Authority**” submitted to office of the dean, Faculty of Management, R.R.M. Campus Janakpur Dham, Tribhuvan University is my original work done in the form of partial fulfillment of the requirement for the Master’s Degree in Business Studies (MBS) under the supervision of Mr. Binod Shah, Lecturer of R.R.M. Campus, Janakpur.

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Finally, I do not want to declare that the study is perfectly satisfactory and complete, as there may be limitations and shortcomings because of the limited time and resources. I, hereby take the responsibility of all those.

June, 2009

**Gobinda Kumar Sah**  
Janakpur

## **ABBREVIATIONS USED**

C.V.	- Coefficient of Variance
Com. Ltd.	- Company Limited
FY	- Fiscal Year
GWH	- Giga Walt Hour
HMG	- His Majesty Government
HMG/N	- His Majesty Government Nepal
i.e.	- That is
KW	- Kilo Watt
KWH	- Kilo Watt Hour
MBO	- Management by Objectives
MBS	- Master in Business Students
MW	- Mega Watt
NEA	- Nepal Electricity Authority
No.	- Number
PE	- Public Enterprise
PPC	- Profit Planning and Central
Ref.	- Reference
Rs.	- Nepali Rupees
S.D.	- Standard Deviation
T.U.	- Tribhuvan University

## CONTENTS

### Acknowledgement

### Table of Contents

### List of Tables

### List of Figures

### Abbreviations

<b>Chapter One</b>	<b>1</b>
<b>Introduction</b>	<b>12</b>
1.1 Background of the study	12
1.2 Focus of the study	13
1.3 Statement of the problem	14
1.4 Objective of the study	15
1.5 Significance of the study	16
1.6 Research Methodology	16
1.6.1 Research Design	16
1.6.2 Nature and Source of Data	16
1.6.3 Data Processing and Analysis	16
1.7 Limitation of the Study	17
1.8 Organization of the study	17
<b>Chapter Two</b>	<b>19</b>
<b>Review of Literature</b>	<b>19</b>
2.1 Concept of Planning	19
2.2 Characteristics of Planning	20
2.3 Profit Planning	22
2.4 Budgeting: As a Tool of Profit Planning	23
2.5 Planning and Forecasting	25
2.6 Profit Planning and Control	26
2.7 Classification of Budget	27
2.8 Revenue Planning	29
2.9 Credit Policy	31
2.10 Collection Policy	32

2.11 Review of Previous Research	33
2.11.1 Mr. Khagendra Prasad Ojha (1995)	33
2.11.2 Mr. Gunaker Bhatta (1998)	34
2.11.3 Mr Joginder Goet (1999)	35
2.11.4 Mr. Ghana Shyam Thapa (2004)	37
2.11.5 Ms. Ichchha Shakya (2004)	38
2.11.6 Mr. Shashti Kumar Shrestha (2006)	39
2.11.7 Mr. Thakur Prasad Acharya (2007)	41
2.11.8 Ms Bhabani Joshi (2008)	43
2.12 Research Gap	44
2.13 Revenue Policies and Strategies of NEA	44
2.14 Accounting Policies of NEA	47
2.15 Credit Policy of NEA	51
<b>Chapter Three</b>	<b>52</b>
<b>Research Methodology</b>	<b>52</b>
3.1 Introduction	52
3.2 Research Design	52
3.3 Nature and Source of Data	52
3.4 Period Covered	53
3.5 Research Variables	53
3.6 Tools of Analysis	53
3.7 Research Procedure	54
<b>Chapter- Four</b>	<b>55</b>
<b>Data Presentation and Analysis</b>	<b>55</b>
4.1 Revenue Trend of NEA	55
4.2 Category wise Analysis of Revenue	63
4.2.1 Category wise achievement of sales unit and revenue	63
4.2.2 Contribution of each Category in total sale	68
4.2.3 Category wise Analysis of selling price	71
4.3 Production Budget of NEA	72
4.4 Loss Analysis	73
4.5 Analysis of Relations Between Sales and Number of Customer	76



4.6 Analysis of Actual Sales, Energy Available, Operating Expenses and Operation Profit.	77
4.7 Categorywise Analysis of Average Consumption and Average Revenue per Customer	79
4.8 Analysis of Accounts Receivable	81
4.9 Variance Analysis	84
4.10 Sales and Profitability of NEA	84
4.11 Profitability Ratio	87
4.11.1 Gross Profit Ratio	87
4.11.2 Net Profit Ratio	88
4.12 Major Findings	90
<b>Chapter-Five</b>	<b>93</b>
<b>Summary, Conclusion and Recommendation</b>	<b>93</b>
5.1 Summary	93
5.2 Conclusion	95
5.3 Recommendations	96
<b>BIBLIOGRAPHY</b>	
<b>APPENDICES</b>	

## **List of Tables**

Table 4.1: Revenue Trends of NEA for FY 2057/58 to 2063/64	44
Table 4.2: Planned and Actual Sales and Achievement of NEA for 2057/58 to 2063/64	45
Table 4.3: Standard Deviation and Co-efficient of Variation of NEA Performance for 2057/58 to 2063/64	49
Table 4.4: Correlation Co-efficient Analysis Table for Actual and Budget Sales Unit and Revenue	50
Table 4.5: Straight Line Trend of Sales Unit and Revenue of NEA	51
Table 4.6: Categorywise Achievement of Sales Unit of NEA	53
Table 4.7: Categorywise Achievement of Sales Revenue of NEA	54
Table 4.8: Contribution of Each Category in Sales Unit	57
Table 4.9: Contribution of Each Category in Sales Revenue	58
Table 4.10: Summary of Budgeted and actual Selling price in the Fiscal Year 2063/64	60
Table 4.11: Budgeted Production and Actual Production FY 2057/58 to 2063/64	61
Table 4.12: Planned and Actual Transmission Loss of NEA	63
Table 4.13: Percentage Increase in Actual Sales and Number of Customer	65
Table 4.14: Percentage Increase in Sales, Energy Available, Operating Expenses and Operating Profit	66
Table 4.15: Average consumption per customer of each category	68
Table 4.16: Average Revenue Per Customer of Each Category	69
Table 4.17: Accounts Receivables, Sales Revenue, Collection Period and Debtor's Turnover	71
Table 4.18: Sales Variance of NEA FY 2057/58 to 2063/64	73
Table 4.19: Sales and Profit (loss) of NEA	74
Table 4.20: Gross Profit Ratio	77
Table 4.21: Net Profit Ratio	78

## **List of Figure**

Graph No. 1: Planned and Actual Sales Unit	47
Graph No. 2: Planned and Actual Revenue	48
Graph No. 3: Planned and Actual Transmission Loss	64
Graph No. 4: Sales and Profit (Loss) NEA	75

# Chapter One

## Introduction

### 1.1 Background of the study

Nepal is one of the developing countries. Public enterprises play a very important role in most of the developing countries. The role of the Public Enterprises differs from country to country basically due to political philosophy of existing governments. It came into existence either by the way of deliberate policy of the government to bring certain activities under strict government control by creating new institution or by nationalizing them from private sector. When we see the history of Public Enterprises we find that most of them well created by the government themselves to manage certain key sectors of the economy.

Especially after the dawn of democracy in 1951 the government of Nepal has put emphasis on the growth and development of national economy. For this Nepal adopted the 'mixed economy model' where both the public and the private sector were expected to work harmoniously (Pathak, 1983; 39) . Nepal started its planned economic development in 1956 with the launching of the first five year plan. Since then the number of Public Enterprises has increased substantially in the various fields of national economy.

Nepal Electricity Authority is the largest government enterprise in Nepal with the country's highest capital investment, assets and human resources. Nepal electricity corporation (NEC) was established in august 16, 1962 under Nepal electricity corporate act, 1962, to generate and distribute electricity in secured, efficient economic and orderly manner in Bagmati zone and Bhimfedi town in Makawanpur. Nepal Electricity Authority was established in 1985 under Nepal

Electricity Authority Act 1984 in order to make effective, dependent and economical production, transmission and distribution of electricity and to manage proper electricity supply. (Nepal Electricity Act,1984;7-8)

Business budgeting or profit planning and controlling is a process of careful and systematic planning of future activities. In some companies plans for the future exist only in the mind of one or one top executive but in more progressively managed companies formal budgets are prepared and approved by executive management in advance of actual operations. (Seiler,196;655)

The initiating management decisions in developing the plan were the statements of broad objectives, specific goals, basic strategies and planning premises. Following those activities and decision, the strategic and tactical profit plans are developed. These profit plans are based on a structured planning process that includes a series of sequential steps. The end result is called a comprehensive profit plan. (Welsch, et.al.,2006;171)

Revenue planning is starting point of over all planning process. Sales is the primary sources of revenue. It is also the determinant of manpower requirement, production level and capital additional plan, expenditure plan and other important operational expects.

## **1.2 Focus of the study**

Profit is the key for measuring efficiency of Public Enterprises in the free market economy. Public Enterprises must be managed commercially so that they can generate profit and can survive in competition with private sector. But in the context of Nepal most of the public enterprises are suffering losses and have become the fiscal burden of government. So the study of Public Enterprises is an interesting matter.

Budgeting is the key to productive financial planning and control. Profit planning is the essence of management and revenue planning is starting point of over all planning process. So the study is focused in evaluating and analyzing the revenue planning system and its application in Nepal Electricity Authority. This analytical paper studies the strategic and tactical profit plan as sales budget, category-wise analysis of revenue, plan and actual transmission loss, analysis of accounts receivable and profitability of Nepal Electricity Authority.

### **1.3 Statement of the problem**

Nepal Electricity Authority is the largest government enterprises in Nepal with country's high capital investment, is a leading public enterprise functioning in public utility sector. Nepal Electricity Authority has a pure monopoly in the market and its product has becomes a basic need of all. For this sense, as per the other public enterprises it has no difficulty in selling its products and services as demand of electricity in the nation exceeds supply many times.

Although Nepal Electricity Authority is successful to increase sales and number of customers, its financial position has not been up to the expectation. Government has invested the huge amount in Nepal Electricity Authority aiming to provide its service to common people and generate sufficient amount of dividend to fulfill the national economic goal. However, it is unable to fulfill the increasing demand of electricity.

Instead of constructing new project, Nepal Electricity Authority is not able to maintain even existing project. The problem of liquidity and need of cash for investment has always been solved by foreign aid and loans. But the increasing trend of foreign loan can have negative impact on national economy. If Nepal Electricity Authority had been effective in its revenue management the amount of foreign loan

would have increased less rapidly. Therefore, for Nepal Electricity Authority it is better to be effective in revenue management.

This research work has tried to find out the following basic research question with respect to Nepal Electricity Authority.

- ) What kinds of tools and techniques are adopted for revenue planning?
- ) What is the credit collation policy of Nepal Electricity Authority?
- ) What are the variances between budgets and actual performance of the authority?
- ) What is the relationship between sales, production, and losses in transmission?
- ) What are the major problem faced by the Nepal Electricity Authority in developing and implementing revenue plan?

#### **1.4 Objective of the study**

The general objective of the study is to analyze revenue management and planning process in Nepal Electricity Authority in order to identify problem and recommend possible remedial measures. This research will focus on the following specific objective.

- ) To examine revenue planning, polices and practice of Nepal Electricity Authority.
- ) To analyze the relationship between sales, production and losses in transmission.
- ) To examine the credit collection policy of Nepal Electricity Authority.
- ) To analyze the variance between budgets and actual performance of the authority.
- ) To examine profitability.
- ) To provide the valuable suggestion and recommendation to the management of Nepal Electricity Authority on the basis of research.

## **1.5 Significance of the study**

Analysis of revenue planning and management is a crucial part of overall profit planning of business enterprises. Thus, periodical analysis and review of revenue planning is necessary in order to ensure functioning of an enterprise. As revenue planning is the corner stone for every planning, proper planning for revenue is necessary for the organization.

This study will be useful to provide information and to draw attention of Nepal Electricity Authority management regarding what can be done for future planning of revenue. The study will also be significant to all interested parties concerned with revenue planning like further researcher, university students who are new generation, NGO and INGO and all other interested individuals and parties.

## **1.6 Research Methodology**

### **1.6.1 Research Design**

The proposed study will be based on descriptive and analytical research design. The case study method will be used to evaluate revenue collection and existing problems of Nepal Electricity Authority.

### **1.6.2 Nature and Source of Data**

Secondary data has been used for the study. They are taken from Nepal Electricity Authority's records, Nepal Electricity Authority's publications and other relevant sources. The period covered is 2000/01 to 2006/07 (2057/58 to 2063/64)

### **1.6.3 Data Processing and Analysis**

The data collected is presented in tables, charts and graph. The collected data are analyzed using financial and statistical tools. The financial tools used are debtors turn over ratio, collection period. The statistical tools used are percentage, standard deviation, coefficient of variation, correlation, regression and time series analysis.



## **1.7 Limitation of the Study**

Following are the limitation of the study.

- ) The study covers the analysis of only 5 years period i.e. fiscal year 2000/01 to 2006/07 (2057/58 to 2063/64).
- ) The study is only related with revenue planning and related fields.
- ) The study is mainly based in secondary data.
- ) The accuracy and reliability is based on the data available from management of Nepal Electricity Authority and various published documents of Nepal Electricity Authority.
- ) This study is only the case study. It deals with Nepal Electricity Authority, thus the conclusion drawn from the study may or may not applicable to the other public enterprises.

## **1.8 Organization of the study**

Organized form of proposed study will includes different chapters and sub-chapters.

### **Chapter I : Introduction**

This chapter includes objectives of the study, statement of the problem, significance of the study, limitation of the study.

### **Chapter II : Review of Literature**

These chapters concerns about the conceptual review and review of related thesis to highlight the related terms and to present the available information about previous related studies.

### **Chapter III : Research Methodology**

This chapter includes introduction, research design, sources and nature of data, data collection instruments, statistical tools that are used for the study.

#### Chapter IV : Data Presentation and Analysis and Interpretation

In this chapter, the data collected are presented, tabulated as required by the research objectives. Data are here interpreted and analyzed with the help of various analytical tools and techniques.

#### Chapter V : Summary, Conclusions and Recommendations

This chapter is the last chapter for this research. In this chapter, summary and conclusion are drawn from the study. It also includes valuable recommendations and suggestions to the enterprise on the basis of the study.

## Chapter Two

### Review of Literature

#### 2.1 Concept of Planning

Planning is to or large extent the job of making things happen that would not otherwise occur. Translating goal and objectives into the specific activities and resources required achieving those goal and objective is call planning. Organization should be developing three types of plans short term, intermediate term and long term. Business managerial are continually involved in organizing, planning and controlling the operations of both large and small business organizations.

Planning is the process of developing enterprises objectives and selecting a future course of action to accomplish them. It includes (a) establishing enterprise objectives, (b) developing premises about the environment in which they are to be accomplished (c) selecting a course of action for accomplishing the objectives (d) initiating activities necessary to translate plans into action and (e) current replanning to current deficiencies (Welsch,et.al.,2006;3)

It is some times said that planning is the primary managerial functions which logically precedes all other functions since without planning a managerial would not have activities to organize would not require a staff, would have no one to direct and would have no need to control. However, the manageria job is actually one which takes place simultaneously rather than rerially. Planning is one of functions of the manager and as such involves the selection, from among alternatives of enterprises objectives policies, procedures and programs. It is thus decision making affecting the future course of an enterprises. (Koontz and Donnel,1990;21)

Planning is the first function of management. It is performed continuously because the passage of time demands both replanning and making new plans. Moreover, current feedback often necessitates newly planned actions to (a) correct performance deficiencies (b) cope with unanticipated events that are unfavorable, and (c) take advantage of new developments, management planning is a process that includes the following five phases:

- (1) Establishing enterprise objectives and goals
- (2) Developing premises about the environment of the entity
- (3) Making decisions about course of action
- (4) Initiating actions to activate the plans, and
- (5) Evaluating performance feedback for replanning.

Management planning provides the basis for performing the four other functions- organizing staffing leading and controlling. (Welsch, et.al., 2006; 4-5)

## **2.2 Characteristics of Planning**

There are certain characteristics in common planning. These characteristics should be helpful in understanding the fundamental nature of planning process. They are

### **A. Uncertainty and Risk**

Simply stated, planning involves predicating the future. Thus the manager is faced with the situation of acting rationally in the face of uncertainty about the future. It is therefore useful to classify decision making according to its degree of certainty. Three levels can be identified.

#### **1) Decision Making Under Certainty**

Decision making under conditions of certainty takes place when there is no doubt regarding the condition that will be encountered. In these cases cost and benefit

of the various options are usually determined. The manager must merely select the choice that will be least costly or that will provide the maximum benefit.

## 2) Decision Making Under Risk

A condition of risk exist where there is uncertainly, but the manager has some basis for anticipating what will happen.

## 3) Decision Making Under Uncertainty

A condition of uncertainty exists where previous experience provides a basis for making the choice. Consequently, no single criterion is available that can identify the best choice. Therefore decision making under condition of uncertainty relies heavily on the personality, attitudes and intuition of the manager.

## B. Use of Information

Planning require forecasting. Instead of using historical events as the basis for choice, the data must be converted to role from of prediction. For example, where an operating plan in the form of budget is being developed, the past sales would be the starting point for setting the future sale goal. Other consideration would include the volume and sales price expected in the future, the economic environment, population trend credit availability, and so far. The successful manager, when he is planning, is concerned with information that will help him to determine the real difference among the options.

## C. Simplifying

Planning provide the possibility of identifying and extremely large number of options for dealing with one issue In addition, there can be a very large number of goals toward which to aspire. Plans can not be made once and for all. Instead, they must be made with the understanding threat they may not succeed. Further more, new

insights and information may require and change in the goals. To deal with this problem in planning a series of decisions must be made.

On the other hand the commitment of resources over some reasonable time span serves to simplify the planning job. (Thacker and Ellis,1981;164)

## **2.3 Profit Planning**

Business budgeting or profit planning and control is a process of carefully and systematically planning future activities. In some companies plans for the future exist only in the minds of one or two top executives, but in more progressively managed companies formal budget are prepared and approved by executive management in advance of actual operations. (Seiler,1964;665)

A budget is the means by which management plans are reduced to amounts. By means of departmental breakdown the budgetary scheduling is communicated to each operating supervisor who is affected. When correctly applied, the budgetary system can be a means of motivating employees to more efficient operations or to improved individual performance. (Seiler,1964;665)

The business budget has three fundamental purposes:

- (1) Planning future operations,
- (2) Coordinating all the companies activities and
- (3) Controlling.

Comprehensive profit planning and control is viewed as a process to help management effectively perform significant phases of the planning and control functions. The PPC model involves

- (1) Development and application of broad and long range objectives of the enterprises
- (2) Specification of Enterprises goals
- (3) Development of a strategic long-range profit plan in board terms

(4) Specification of a tactical short range profit plan detailed by assigned responsibilities (divisions, departments, projects).

(5) Establishment of a system of periodic performance reports detailed by assigned responsibilities: and

(6) Development of follow-up procedures. (Welsch,et.al.,2006;30)

Thus, a budget is a plan for the future expressed in financial terms. In business units, budgets represent an operating plan with two primary objectives;

(1) To provide a financial forecast of future operation and

(2) To provide standards for the measurement of performance.

A company budget is therefore, both a plan for the future and a means of composing actual results with the standards established in the budgets.

## **2.4 Budgeting: As a Tool of Profit Planning**

A budget is as quantitative expression of a plan of action and an aid to coordination and implementation. Budget may be formulated for the organization as a whole or for any sub unit. Budgeting includes sales. Production, distribution and financial aspect of an organization. Budget program is designed to carry out a variety of functions planning, evaluating performance, coordinating activities, implementing plans, communicating, motivating and authorizing action. (Horngren,1977;123)

Budget as a tool of planning and control is closely related to the boarder system of planning and control in an organization. Planning involves the specification of the basic objectives that will guide it. In operational terms it involves the step of setting objectives, specifying goals, formulating strategies and expressing budgets. A budget is a comprehensive and coordinated plan expressed in financial terms, for the operations and resources of an enterprise for some specified period in future.(Khan & Jain,1989;296)

Budgetary control is a system of controlling costs which includes the preparation of budgets, coordinating the departments and establishing the responsibilities. It is also comparing actual performance with budgeted standards and acting upon results to achieve maximum profitability. (Goyal and Goyal,1992;23)

Budgeting is a comprehensive plan of action prepared for achieving objectives. Budget is plan quantified in monetary term prepared and approved to defined period of time usually showing planned income to be generated expenditure to be incurred during that period of the capital to be employed to attain a given objectives CIMA official terminology. It express and organizations commitment to planned activities and resource acquisition and use. It is vital part of good planning. It is a formal statement of future plan usually expressed monetary terms.

Therefore, a budget is:

1. Essentially a plan (quantified in momentary terms) to attain a given objective.
2. prepared and approved
3. prior to defined period of time
4. usually showing planned income to be generated
5. expenditure to be incurred, and
6. Capital to be employed during the period.

The process of preparing budget in known as budgeting. This is the process of planning future business action and expressing that plan in a formal manner is called budgeting. (Munakarmi,2002;215)

Thus budget is concerned with policy making while budgetary control results from the implementation of the policy. The common objective of budgetary control is to formulate policies aimed at objectives established after the consideration of the



possible course of events in the future and to provide a means for the constant comparison of actual progress to words this goal against the preconceived results. Budgeting is selecting appropriate concepts and techniques for different situations in developing and applying an effective profit planning.

## **2.5 Planning and Forecasting**

Forecasting and planning are not the same meaning forecasting is the prerequisite for planning. Forecasts are the statement of expected future conditions. These expectations depend upon the assumptions made.

Planning entails regular measurement of progress toward objectives and goals and the execution of strategic and action program, yet it is clearly recognized that plan often have to be altered in the light of new circumstances. It should be continuous process and not a once a year experience. It should involve all those, whose jobs have a significant effect on the for tames of the company.

The distinction between forecasting and planning is not an easy one. Webster gives- "To plan ahead" as the leading definition for forecast. Forecasting is our best thinking about what will happen to us in the future. In forecasting we define situations and recognize problems and opportunities. In planning we develop our objectives in practical attain and we correspondingly develop schemes of action to achieve these objectives. (American accounting association,1980;52)

Forecasting is not a plan; rather it is a statement and or a quantified assessment of future condition about a particular subject based on one or more explicit assumptions a forecasting should always state the assumption upon which it is based. A forecasting should be viewed as only one input into the development of a plan. The management of a company may accept, modify or reject the forecast says planning incorporates management divisions that are based on the forecasting, other inputs, and

management judgment about such related item as sales volume prices, sales efforts, production and financing. It is important to make a distinction between the forecast and plan primarily because the internal technical staff should not be expected or permitted to make the fundamental management decision and judgments implicit in every plan. Forecasting as only one step in planning is that forecasting is conditional. (Welsch,et.al.,2006;172)

## **2.6 Profit Planning and Control**

The fundamental concept of PPC include the underlying activities tasks that must generally be carried out to attain maximum usefulness from PPC. These fundamentals have never been fully condified. As a basis for discussion with PPC is given below.

1. A management process that includes planning, organizing staffing, leading and controlling.
2. A managerial commitment to effective management participation by all levels in the entity.
3. An organization structure that clearly specifies assignments of management authority and responsibility of all organization levels.
4. A management planning process.
5. A management control process.
6. A continuous and consistent coordination of all the management functions.
7. Continuous feed forward, feedback, follow-up, and replanning through defined communication channels (Both downward and upward).
8. A strategic (long range) profit plan.
9. A tactical (short-range) profit plan.
10. A responsibility accounting system.

11. A continuous use of the exception principles
12. A Behavioral management program. (Welsch,et.al.,2006;31-32)

## **2.7 Classification of Budget**

Broadly speaking, budgets can be classified as follows:

### **A. On the basis of time**

1. Long term budget,

These budgets are related to planning the operations of an organization for a period of 5 to 10 years. They are usually expressed in physical qualities.

2. Short-term Budget

These budgets are drawn usually for a period of one or two years. They are usually quantified and expressed in monetary terms.

3. Current Budgets :

These budgets cover a period of one month or more and the short-term budgets are modified according to current conditions or prevailing situations.

### **B. On the Basis of Function**

1. Sales Budget

This is forecast of total sales classified according to groups of products; salesman and geographical locations.

2. Selling and distribution cost budget.

This is concerned with forecast of at the selling and distribution cost.

3. Production budget

This is a forecast of production in terms of quantity.

4. Production cost budget

This is a forecast of production in terms of quantity.

This is related to the cost of production including direct material cost, direct labour cost.

5. Purchase budget

It deals with purchases that are required for planned production.

6. Personnel budget

This deals with labor employed in production activity. This would be split up between direct and indirect labor.

7. Research budget

It relates to research activities.

8. Cash budget

It is a sum of the requirements of cash in respect of various functional budgets as well as of anticipated cash receipts.

9. Office and administration budget

This budget represents cost of all administrative expenses such as salary and expenses of office management like lighting and cleaning.

10. Capital budget

It is forecast of outlay on fixed assets as also of the sources of capital required.

**C. Classification According to Flexibility**

1. Fixed Budget

It is a budget in which targets are rigidly fixed.

2. Flexible Budget

This budget provides flexible targets and is resorted to by all business concerns where sales forecasts for the future could not be effected with certainty. (Vinayak and Sinha, 1992; 25-26)

## 2.8 Revenue Planning

Revenue results from the sale of good and the rendering of services and is measured by the charge made to customers, clients or tenants for goods and services furnished to them. It also includes gains from the sale or exchange of assets other than stick in trade, interest and dividends earned on investments and other increases in the owners equity except those arising from capital contributions and capital adjustments. Revenue from ordinary sales or from other transaction in the ordinary course of Business is some times described as operating revenue. (Bhattacharya and Dearden, 1980;137)

The sales revenue planning process is a necessary part of PPC because (a) it provides for the basic for the basic management decisions about marketing, and (b) based on those decisions, it is an organized approach for developing a comprehensive sales plan. If the sales plan is not realistic, most if not all of the other parts of the overall profit plan also are not realistic. Therefore, if the management believes that a realistic sales plan cannot be developed, there is little justification for PPC. Simply, if it is really impossible to assess the future revenue potential of a business, there would be little incentive for investment in the business initially or for continuation of it accept for purely speculative natures that most managers and investors prefer to avoid. The primary purpose of sales plan are:

- a. To reduce uncertainty about future revenue,
- b. To incorporate management judgments can decisions into the planning process (e.g., in the marketing plans)
- c. to provide necessary in formation for developing other demands of a comprehensive profit plan, and

d. to facilitate management's control of sales activities.

(Welsch,et.al.,2006;171-172)

The factors influencing the level of revenue may be classified as external and internal

#### 1. External Factors

These include the fluctuations in the size of population, the general level of prosperity, the extent and severity of complication in the market, government policy and regulation. Changes in fashion and tastes, degree of competition expected from new product etc. Elasticity of demand for the product is of obvious importance if prices are expected to undergo a change.

#### 2. Internal factors

These include promotional aids such as advertising. Incentives to salesman, ability of the organization to satisfy demand, quality of the finished product, changes in price etc. (Varma and Agrawal,1996;29-30)

It is undoubtedly true that past can provide experience and information which will be of assistance in estimating present and future revenue but care must be taken in presenting past facts to management so that incorrect conclusions may not be drawn there from. (Goyal and Goyal,1992;40)

Steps in Revenue Planning Are:

Step-1: Develop management guidelines specific to sales planning responsibilities.

Step-2: Prepare one (or more) sales market, forecasts consistent with specified forecasting guidelines including assumptions.

Step-3: Assemble all the other data that will be relevant in developing a comprehensive sales plan.

Step-4: Based on steps 1, 2, and 3 above, apply management evaluation and judgment to develop a comprehensive sales plan.

Step-5: Secure managerial commitment to attain the goals specified in the comprehensive sales plan. (Welsch,et.al.,2006;176)

## **2.9 Credit Policy**

The term receivables is debt owed to the firm by customers arising from sale of goods or services in the ordinary course of business. When a firm makes an ordinary sales of goods or services and does not receive payment, the firm grants trade credit and creates accounts receivables which would be collected in the future. Thus, accounts receivable represent an extension of credit to customers, allowing them a reasonable period of time in which to pay for the goods on a credit is an essential part of the modern competitive economic system. In fact, credit sales and therefore, receivables, are treated as a marketing tools to aid the sales of goods. The credit policy of a firm provides the framework to determine (a) whether or not to extend credit to customer and (b) how much credit to extend.(Khan and Jain, 1994;706)

Credit and collection policies are interrelated with the pricing of a product or service and must be viewed as part of the overall competitive process. Economic conditions and the firm's credit policies are the chief influence on the level of a firm's accounts receivables. Economic conditions, of course are largely beyond the control of the financial manager. As with other current assets, however, the manager can vary the level of receivables in keeping with the trade off between profitability and risk. (Van Horne,2000;361)

Credit policy can have a significant influence on sales. In theory, the firm should lower its quality standard for accounts accepted as long as the profitability of

sales generated exceeds the added costs of the receivables, what are the costs of relaxing credit standards some arise from an enlarged credit department, the clerical work of checking additional accounts and servicing the added volume of receivables. (Van Horne,2000;362)

The second decision area in accounts receivables management is the credit terms. After the credit standards have been established and credit worthiness of the customers has been established and credit worthiness of the customers has been assessed, the management of a firm must determine the terms and conditions on which trade credit will be made available. The stipulation under which goods are sold on credit are referred to as credit terms. These related to the repayment of the amount under credit sale. Thus credit terms specify the repayment terms of receivables credit terms have three components: (a) credit period, in terms of the duration of time for which trade credit is extended during this period the overdue amount must be paid by the customer; (b) cash discount, if any, which the customer can take advantage of i.e. the overdue amount will reduced by this amount: and (c) cash discount period which refers to the duration during which the discount can be availed of. (Khan and Jain, 1994;714)

## **2.10 Collection Policy**

Collection policy refers to the procedures the firm follows to obtain payment of past due accounts. For example it may send a letter to such accounts when they are ten days past due date; it may use a more threatening letter, followed by a telephone call; and it may turn the amount over to a collection agency. The collection process can be expensive in terms of both out of pocket expenditure and lost goodwill, but at least some firmness in needed to prevent as undue lengthening in the collection period



and to minimize outright losses, again a balance must be struck between the costs and benefits of different collection policies (Weston and Brigham,1981;318)

## **2.11 Review of Previous Research**

### **2.11.1 Mr. Khagendra Prasad Ojha (1995)**

Mr. Khagendra Prasad Ojha's research "Profit planning in Public Enterprise in Nepal: A comparative Study of Royal Drug limited and Herbs Production and Processing Company" has the following findings and recommendations.

#### **Findings:**

1. Objectives of Nepalese public enterprises are not clear conflict between social objectives and profit objectives are hindering profit planning program of PES.
2. Nepalese public enterprises are not successful to maintain coordination within organization. RDL has been suffering from the departmental and staff conflict.
3. One major problem in Nepalese PES is behavioral. But these PE's have made no attempt to solve behavioral problems.
4. Pricing system of Nepalese PE's is not scientific PE's adopt traditional pricing methods.
5. Sales achievements are below sales targets. This also signals that sales plans are not made by considering all components affecting sales.
6. Price-cost-volume relationships are into considered when developing sales and pricing strategy.

#### **Recommendations:**

1. Since external variables exert major influences on the enterprises. HPPC and RDL and all PE's should adequately identify and evaluate these variables.
2. Objectives are the ends which an enterprise seeks to achieve. Nepalese PE's should clearly define their objectives.

3. Profit planning manuals should be communicated from top to lower levels.
4. Nepalese PEs should tackle the behavioral problem in organization.
5. Sales forecasting should be made on the realistic ground. The process of developing realistic sales plan should be unique according to the requirement of the enterprises.
6. Price-cost-volume relationships should be taken into consideration while developing sales plan and pricing strategies.
7. Finally a systematic approach to comprehensive profit planning essential in the PEs in Nepal. To adopt this approach, planning experts should be trained.

#### **2.11.2 Mr. Gunaker Bhatta (1998)**

Mr. Gunaker Bhatta has made research on "Profit Planning a Case study to Nepal Electricity Authority" on 1998, July. In this study Mr. Bhatta has pointed out following major finding and recommendation, which are as follows:

##### **Findings :**

1. Operating profit of NEA is in negative figure. The authority has shown profit after the transfer from revaluation surplus.
2. Transmission loss of NEA is about 20-25%.
3. The authority has not been able to maintain its periodic performance report systematically.
4. Specific goal and objectives are not conveyed to lower level staffs and it denotes the absence of MBO principal of management.

##### **Recommendations:**

1. Budget centers should be regularly monitored.
2. Leakage of the electricity should be controlled by improving meter reading and meter connection system.

3. NEA should develop efficient system of revenue collection.
4. NEA should improve co-ordination between various direct-orates.

### **2.11.3 Mr Joginder Goet (1999)**

Mr. Joginder Goet has made research on "Revenue Planning and Management in Nepal A Case Study of Nepal Electricity Authority", Submitted to Faculty of Management Shanker Dev Campus on 1999, April. In this study Mr. Goet has pointed out following major finding and recommendation, which are as follows:

#### **Findings:**

1. NEA has not considered demand determinants such as family income, price of electricity, connection charges, cost of alternatives available, cost of auto generation of electricity, and reliability of electricity, are reliability of NEA service while forecasting demand.
2. While setting the target sales for next year, NEA has not considered other factor such as growth of consumer and other relevant factor.
3. Target growth in sales revenue is not achieved.
4. There is consistency between planned sales and actual sales as a whole.
5. NEA has not adopted the practice of preparing monthly budget, which is necessary for planning and control.
6. NEA has the practice of using 10% increment over the figures of post year to forecast next year's sales as "bench mark".
7. Analysis of transmission loss suggests that NEA has been making efforts to bring it down to 22 percent since 1993/94 but loss remains about 24.5 percent to 25 percent in the analysis period.
8. NEA's overdue amount of receivables is increasing year by year.

9. NEA has not made collection plans of next year of the basis of previous year's collection.

**Recommendations:**

1. NEA planners should be properly trained about budgeting and revenue planning.
2. NEA should consider demand determinants.
3. To achieve target growth rate in sales revenue, NEA should make realistic forecasts.
4. While preparing central budget of NEA, it should take into account all the suggestions made by branches and sub branches.
5. NEA should start the practice of preparing monthly budget for sales revenue.
6. NEA should introduce programs and action plans for the reduction of transmission loss, both technical and non technical.
7. NEA should put more effort to manage the supply to the profitable sectors such as domestic, industrial, non commercial, commercial and temporary supply.
8. Revenue should be recognized on accrual basis to comply with present accounting manual.
9. NEA should try to reduce overdue amount of receivables NEA should provide incentive to staff to encourage them for collection o overdue amount of receivable. In revenue collection, any kind of pressure, reposition and biases should strictly be discouraged.
10. NEA should have proper coordination regarding budget formulation implementation and evaluation of achievement.

#### **2.11.4 Mr. Ghana Shyam Thapa (2004)**

Mr. Ghana Shyam Thapa had made research on "Profit Planning in Nepalese Public Enterprise A Case Study of Nepal Electricity Authority", submitted to faculty of Management Shanker Dev Campus for the partial fulfillment of MBS on 2004, August. In this study Mr. Thapa has pointed out following major finding and recommendation, which are as follows:

##### **Findings:**

1. NEA prepares both tactical and strategic profit plan but strategic plan is confined only to the level executives.
2. NEA is not successful to achieve sales target during the study period except in FY, 2055/056.
3. Achievement of capital expenditure budget is satisfactory.
4. Operating costs have not been controlled effectively during the study period.
5. NEA has not maintained sound liquidity during the study period.
6. NEA has not prepared plan and program for agriculture sector's consumption of electricity.

##### **Recommendations:**

1. A systematic approach to comprehensive profit planning and control is essential. To adopt these approach existing planners should be trained and new planner should be hired.
2. NEA should reduce the long term loan to reduce the high interest amount. Similarly, NEA should give emphasis in internal financing to reduce excess internal economic burden.
3. Cost volume profit relationship should be considered while developing the sales plan and pricing strategy.

4. It is suggested that NEA should invest in small hydro projects to ensure profitability because such projects do not require much funding and they start to provide return on investment more quickly.
5. NEA should adopt discounted cash flow techniques to evaluate the large projects.

#### **2.11.5 Ms. Ichchha Shakya (2004)**

Ms. Ichchha Shakya had made research on "Revenue Planning and Management of Public Enterprises (A Case Study of Nepal Electricity Authority)" submitted to the Faculty of Management, Shanker Dev Campus for the partial fulfillment of MBS in 2004. This study had the following findings and recommendations.

##### **Findings:**

1. NEA has not considered major demand determinants of electricity such as family income, price of electricity, connection charges, cost of alternative, cost of auto generation and reliability of NEA service.
2. Target in sales units was achieved only in the FY 2056/57 and 2060/61 but in 2057/59, 2059/60 could not be achieved.
3. Target growth in sales revenue were not achieved except in the year 2056/57. This shows that NEA has failed to convert sales unit into sales revenue.
4. The analysis of category wise revenue plan shows that achievements in domestic, non-commercial, commercial and industrial categories are highly consistent. But the achievements in remaining categories are fluctuating.
5. NEA has been making efforts to bring transmission loss down to 22 percent since 2056/57 but actual loss crossed about 40 percent in the analysis period.

##### **Recommendations:**

1. NEA planners should be properly trained about budgeting revenue planning.

2. To achieve target growth rate in sales revenue NEA should make realistic forecast.
3. NEA should introduce programs and action plans for the reduction of transmission loss, both technical and non-technical.
4. NEA should put more effort to manage the supply to the profitable sectors such as domestic, industrial, non commercial, commercial and temporary supply.
5. There should be greater consideration to cost while making power purchase agreement between Nepal and India.
6. NEA should by to reduce overdue amount of receivables. NEA should provide incentives to staffs to encourage them for collection amount of receivable.
7. NEA should have proper co-ordination regarding budget formulation, implementation and evaluation of achievement.

#### **2.11.6 Mr. Shashti Kumar Shrestha (2006)**

Mr. Shashti Kumar Shrestha had made research on "A Study on the Role of Sales Planning A Case Study of NEA" submitted to faculty of management Shanker Dev Campus for the partial fulfillment of MBS on 2006. This study had the following finding and recommendations.

##### **Findings:**

1. With special reference to sales planning, it can be said that NEA has practice of preparing various functional budgets in the process of preparing comprehensive profit plan.
2. The trend value of sales are in increasing trend.
3. There is positive and perfect correlation between budgeted sales and actual achievement of sales.

4. Actual sales is less than actual production. It indicates remarkable loss of power in NEA.
5. NEA is paying a huge amount of interest every year and it is suffering form high fixed cost in FY 2057/2058.
6. NEA has very poor management of costs. Sales has increased each year but due to high costs the authority has suffered form huge loss.
7. NEA has very poor utilization of assets.
8. The profit of NEA has a very high degree of negative correlation with actual sales.
9. Number of consumers is increasing each year. NEA isnot being able to make effort to meet the demand of its customers.
10. The information, communication system of NEA is not effective since lower level personnel were not properly communicated its objectives.
11. Average collection period is increasing each year.

**Recommendations:**

1. There should be continuous follow of information among various departments, directorates, different level of management and various group of employees.
2. NEA needs to hire the experts for planning, implementation and controlling activities of the authority.
3. To reduce the cost is the most suitable tool for the upliftment of NEA. For the efficient control over the costs, the widely accepted cost controlling tool, standard costing will be fruitful for NEA.
4. NEA is paying and huge amount of interest annually for the long term debt and loans. To reduce the contribution of loan financing NEA needs to restructure its capital structure.



5. It is an immediate need for NEA to develop efficient system for collecting revenue in time.
6. NEA has been suffering from huge power loss annually which has great role for the huge loss. So it is recommended that NEA should control leakage of the electricity at any cost with immediate effect.
7. NEA should pay more effort to manage the supply of electricity to the profitable sectors such as domestic industrial, non-commercial sectors.
8. Capacity of installed plants of NEA should be fully utilized. It helps to reduce the operating cost in large extend.
9. NEA has huge investment of fixed assets but the fixed assets turnover ratio shows poor utilization of fixed assets.
10. To make sales planning system more efficient and progressive the effective management is very much essential.

#### **2.11.7 Mr. Thakur Prasad Acharya (2007)**

Mr. Thakur Prasad Acharya had made research on "Revenue Planning and Management in Nepal A Case Study of Nepal Electricity Authority" submitted to faculty of management Shanker Dev Campus for the partial fulfillment of MBS on 2007. This study had the following findings and recommendations.

##### **Findings:**

1. NEA has practice of preparing both strategic and tactical managerial budgeting but tactical plan in prepared for external purpose and strategic plan is prepared for internal purpose.
2. NEA has suffering from loss for the FY 2058/059 to 2062/062.
3. NEA has been paying huge amount of interest on long term loan.

4. There are perfect correlations between budgeted and actual sales and budgeted and actual production.
5. Account receivable and average collection period are in increasing trend during study period.
6. NEA has no practice of cost segregation.
7. NEA was unable to meet its BEP sales therefore it faces loss every year.

**Recommendations:**

1. NEA should have an efficient management system to have control over costs. It must be maintain fixed cost to minimum standard level.
2. Sales budget should be prepared on the realistic ground sales forecasting should be made after analyzing all variable that effect the sales of NEA.
3. NEA should be considering cost volume profit relationship while developing the sales plan and strategy.
4. NEA should be follow light collection policy to collection account receivable in a time. Collection policy should not be influenced by political pressures.
5. NEA should prepare monthly sales budget which help to prepare the sales revenue rightly a year budget.
6. There should be proper forecasting technique to avoid the unfavorable variance of sales revenue.
7. NEA should undertake regular supervision and monitoring from top level management. NEA should try to adopt the managerial budgeting calendar.
8. Till now NEA is suffering from loss. NEA can reduce cost and increase its sales volume. It can generate more profit. On the other hand NEA should be implemented managerial budgeting efficiently and strictly.

### **2.11.8 Ms Bhabani Joshi (2008)**

Ms Bhabani Joshi had made research on "Revenue Planning as a Tool of Budgeting practice of NEA" submitted to faculty of management Shanker Dev Campus for the partial fulfillment of MBS on 2008. This study had the following findings and recommendation.

#### **Findings:**

- 1) NEA has not practiced the international accounting standard
- 2) Actual sales are not more fluctuating than budgeted sales and budgeted production is more fluctuating than actual production.
- 3) NEA has been paying huge amount of interest on long term loan
- 4) Actual sales are always less than actual production due to power loss which is a main problem of NEA, which affects its profit.
- 5) Account receivable and average collection period are in increasing trend during study period.
- 6) NEA was unable to meet BEP sales therefore it faces loss every year.
- 7) Revenues are not recognized on accrual basis.
- 8) Repair and maintenance activities are not regular.

#### **Recommendations:**

1. NEA planner should be properly trained about profit planning.
2. NEA shall give emphasis over cost volume profit relationship while developing the sales plan and strategy. To maintain the level of BEP shall minimize its fixed cost and variable cost as well as increase the sales revenue.
3. To achieve the targeted growth rate in sales revenue, NEA should make realistic forecast.

4. Electricity leakage is increasing each year, which is main cause of reducing sales revenue. So, leakage of the electricity should be controlled promptly.
5. NEA shall maintain a sound liquidity position. Instead of being available huge amount current assets, there is always liquidity crunch.

The authority should develop a proper co-ordination between budget formulation, implementation and evaluation of achievement.

## **2.12 Research Gap**

This study is especially concerned with Nepal electricity authority, which is in its position in group 'A' of public enterprises list. Most of the research studies are concerned with profit planning and revenue planning and management and sales planning of NEA. The finding and conclusion of all studies are generally same. They had not analyzed the profitability of NEA. So this research has tired to measure the revenue planning and its impact on profitability of NEA. This study also works to identify the various cause of suffering loss to analyze them and recommended practical suggestion of NEA.

## **2.13 Revenue Policies and Strategies of NEA**

### **) Long Term Objective of NEA**

NEA is governed by the Nepal electricity authority act 2049. The following are the objectives of NEA.

1. To recommend HMG/N in preparation of long term and short term policy for the supply of electricity.
2. To produce and distribute electricity as per prevailing laws.
3. To prepare work plan for electricity production, transmission and distributions system.
4. To determine the service charge of electricity and other related service.

5. To do or get done the necessary research work for the supply transmission and distribution of electricity.
6. To manage or get managed for higher training and studies about electricity production, transmission and distribution of produce efficient human resource.
7. To provide technical constancy for the work related to electricity production transmission and distribution.

## **) Rights of NEA**

The following are the rights of NEA

1. to get loan from national institution banks and persons.
2. To get loans from international institutions, and foreign government and organizations.
3. To collect electricity and service charge from customers.
4. To sell electricity to foreign countries and buy from them.
5. To invest the fund laying in authority.
6. To control the unauthorized consumption of electricity distributed.
7. To buy electricity produced by provide sector.

## **) Budgeting in Nepal Electricity Authority**

### **1. Preparation of Budget in NEA**

Finance and accounts directorate prepares the guidelines of budget preparation. These guidelines are based the financial rules and regulation of NEA. The initiation of budget formulation is taken by the concerned sections, divisions, departments and directorates respectively on the basis of their past performance and future requirements. While formulating the budget concerned department aspects

- 1) Revenue
- 2) Operation and maintenance expenditure

### 3) Capital expenditure.

All the directorates and departments submit their annual budget to the finance and accounts directorate. Finance and accounts directorate presents the consolidated budget to the budget committee. Budget committee after discussion with the concerned authorities reviews the budget and takes necessary actions so that it can fulfill the objectives of NEA and suit the cash flow position. The budget is presented to the board for approval.

## **2. Implementation of Budget**

When the board approves budget, the process of budget formulation is completed and process of implementation comes into action. The concerned authorities start to implement as per their set programmes, operation and maintenance budget is used in regular work where as capital budget is spent as per approved programmes.

## **3. Evaluation of Budget**

After implement of the budget periodic review is done.

The evaluation of the budget in NEA considers the following:

- i. Is NEA successful to pave the way of infrastructure for the development of the country?
- ii. Are the targets achieved in scheduled time period with fixed amount of money?
- iii. What is the contribution to the nation?
- iv. What is the socio-economic impact?
- v. What is the benefit to the consumer?

## **Forecasting of demand in NEA**

Most planning, construction and operation activities of an enterprise are based on portable future condition. Generally forecast means production of future environmental conditions of which an enterprise is operating so that challenges and opportunities forth coming to the enterprise can be assessed. Assessment of future challenges and opportunities is important to devise plan to minimize the consequences of the challenges. The most important opportunity that environment can provide to the enterprise is the demand of its product. Thus prior assessment of demand which is known as demand forecasting is necessary.

Major demand Determinants of NEA

1. Domestic sector
2. Commercial sectors
3. Industrial sector
4. Agriculture sectors

## **2.14 Accounting Policies of NEA**

### **1. Basis of preparation of Financial Statements**

The financial statements have been prepared on the basis of historical cost convention in accordance with the generally accepted accounting principles.

The financial statements comply with Nepal Accounting Standards (NAS) and presentational requirement of the Companies Act 2063.

### **2. Revenue from Sale of Electricity**

Revenue from sale of electricity is recognized at the time of raising of bills on the customers as per the billing cycle. Revenue from the billing cycle date up to 31 Ashad (15 July) has been accrued taking average rate. Revenue from sale of electricity is shown net of rebate.

(ii) Rebate and surcharge for delayed payments are accounted on cash basis.

### 3. Income from Other Services

Interest on investments and lease rent are recognized on accrual basis.

(ii) Dividend on investment in shares is recognized when received.

(iii) Revenue from other services is recognized on cash basis.

(iv) Revenue from services provided by Engineering Services are accounted for on cash basis on the completion of the relevant job.

### 4. Property, Plant and Equipment

Property plant and equipment are stated at cost of acquisition or cost of construction less accumulated depreciation. The cost of acquisition, construction/erection include interest on loans related to the period of construction/erection up to the date of completion of the project, along with other incidental costs and charges attributable to bringing the asset to its working condition for its intended use. The incidental costs include proportionate overheads relating to the following offices at the rates given below:

(a) Planning	50%
(b) Distribution and Consumer	10%
(c) Engineering	50%
(d) Finance and Administration	10%

### 5. Foreign Currency Loans

Liabilities on foreign currency loans which remained unpaid at the year end are converted at the year end exchange rates. The profit/loss arising there from is recognized as income or expenses in the Income Statement.



## 6. Contribution from Customer/ Local Authority

Contribution from customer or local authorities for property plant and equipment are shown as capital reserve. An amount as depreciation of the contributed amount for the respective assets is charged on capital reserve.

## 7. Investments in Shares

Investment in the shares of subsidiary and other companies held for long term are stated at cost.

## 8. Depreciation

Depreciation is provided on all categories of property, plant and equipment on straight line basis which reflects the estimated useful lives of the assets.

The rate of depreciation on property, plant and equipment is as follows

S.N.	Assets	Historical Cost Basis
1.	Land	-
2.	Buildings	2.00%
3.	Hydro Electric Structures	2.00%-3.00%
4.	Hydro Electric Plant & Machinery	3.00%
5.	Internal Combustion on plant & machinery	2.50%
6.	Transmission lines (66 kV, 132 kV and above)	3.00%
7.	Transmission lines (33 kV)	3.00%
8.	Transmission Substations	3.00%
9.	Distribution system (including below 11 kV Transmission lines)	3.00%-4.00%
10	Solar Power	3.00%
11	Meter & mobile plant metering equipment	10.00%
12	Consumer Services	7.00%
13	Public lighting	3.00%
14	Vehicles, tools and instruments, furniture and fixtures.	20.00%
15	Office Equipment	15.00%
16	Miscellaneous properties	50.00%
17	Additions during the year	At applicable rates for half year

## 9. Inventories

Inventories are valued at cost, using the weighted average method.

## 10. Accounts Receivable

Accounts receivable are stated at book values, less provision as may be considered appropriate by the management.

## 11. Deferred Revenue Expenditure

Certain expenditure incurred on training, investigation, survey, software development, feasibility studies of infrastructure projects and major overhauling etc. which are expected to generate benefits over a period of time, are treated as deferred revenue expenditures and written off over a period of five years, including the year in which the said expenditures are incurred.

## 12. Employees Benefits

Salary, wages, allowances, overtime, paid annual leave and electricity facility are accrued in the financial year in which the services are rendered by the employees NEA's contributions to provident fund is charged to income statement. The provision for Pension and Gratuity is created by 15 % of annual salary less actual amount paid during the year. If any amount appears short fall, then additional provision is made. Liability on account of accumulated home and sick leave has been provided for on an estimated basis to cover the liability. Liability on account of medical reimbursement continues to be accounted for on cash basis.

## 13. Insurance Fund

Insurance fund is created by setting aside a sum of Rs. 20 million every year irrespective of profit/loss for the year to cover any loss of property, plant and equipment, in case of any eventuality.

#### 14. Prior year's figures/ Regrouping

Previous year's figures have been reclassified/ regrouped, where necessary, to make them comparable with current year's figures.

### **2.15 Credit Policy of NEA**

The discount to the amount of the bill except the miscellaneous amount from the date of reading to the 7<sup>th</sup> day would be 3 percent, from 8<sup>th</sup> day to the 22<sup>nd</sup> day of reading customer have to pay the amount as in the bill, from 23<sup>rd</sup> day to 30<sup>th</sup> day 5 percent additional charge, from 31<sup>st</sup> to 40<sup>th</sup> day 10 percent additional charge, and from 41<sup>st</sup> day onwards 25 percent additional charge would be added.

If the customer, who has the minimum charge Rs. 80, pays the amount in time will get 4 percent discount. 4% discount will be given to the industrial customer for rewait. The last date for the payment of the amount is the aforementioned period respectively.

- (a) If the amount is not paid till 60<sup>th</sup> day of reading, the connection would be cut off anytime without any information and the remaining amount would be taken as the government remaining from the related customer.
- (b) The lien will be connected only after the payment of the amount along with the extra charge for the re-connection if the line is disconnected for the amount unpaid but the authority is not compelled to connect the line on the day of payment.

## **Chapter Three**

### **Research Methodology**

#### **3.1 Introduction**

Research methodology means the methods with which data have been extracted and discussed the tools that have been used in interpretation of such data to fulfill the objectives. More specially, research methodology describes about the research design, the population and the sample, nature and sources of data and tools that will be used to analyze the data. The following contents of research methodology are followed to conduct the research on this subject matter.

#### **3.2 Research Design**

Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance. The formidable problem that preparation of design of the research project popularly known as research design.

This should attempted to analyze and evaluate the budgeting procedure in the process of measuring analysis are closely related with various functional budget. It is closely related with budget sales and actual sales, role of sales for profitability and other accounting and financial statements.

#### **3.3 Nature and Source of Data**

The significance of research depends on the nature, availability and accuracy of information. Data are the main arms and weapons for successful analysis. Data may be information, statistics, facts, figures, charts etc. for the successful analysis and to draw meaningful, collection of data is the most important part of any research. Data are two types i.e. primary data and secondary data secondary data are used here for

this research which can be collected through the management, budgeting section and different publications. The data have been collected from the following sources:

- a) Published and unpublished relevant document of NEA.
- b) Annual reports of NEA
- c) Magazines and booklets published half yearly, yearly etc by NEA
- d) Sales budget and plan of NEA
- e) Published and unpublished articles
- f) Previous studies made in the field

### **3.4 Period Covered**

This study covered a period of the fiscal year from 2000/01 to 2006/07 (2057/58 to 2063/64) Data were taken from NEA and the analysis was made on the basis of these five year data.

### **3.5 Research Variables**

The research variables of the study are related with sales statement of NEA, budget sales and actual sales both unit and Rs, transmission loss of NEA, selling price per unit, profit and loss, balance sheet etc. which cover 7 years period.

### **3.6 Tools of Analysis**

Various statistical, financial as well as mathematical tools are used for the analysis of data which is already stated in the research methodology.

The financial tools used are debtors turn over ratio, collection period, and profitability ratio. The statistical tools used are percentage, standard deviation, and coefficient of variation, correlation, regression and time series analysis. The data collected is presented in tables, charts and graph.

### **3.7 Research Procedure**

Following steps are included for research procedure:

1. Collection of various books and other publication which are relevant for study.
2. Assimilation of useful secondary data
3. Description and analysis of collected data in the light of theoretical basis.
4. Presentation of data through tables, charts, graphs etc.
5. Analysis of data using statistical, financial tools.
6. Extraction of valuable conclusion and recommendations.

## Chapter- Four

### Data Presentation and Analysis

#### 4.1 Revenue Trend of NEA

Revenue plan is the key factor in profit planning and control. It is primary step in developing the overall budget producer and it is the primary source of cash and all other functional budget are prepared on the basis of sales budget. Sales plan is prepared on the basis of sales forecast generally sales plan and sales forecast are used as a same sense but they are not same. A sales forecast has to be translated in to sales plan and various factors have to be taken in to consideration.

The starting point for the evaluating of existing revenue planning practices is to analyze past trends of planned sales revenue and its achievement.

**Table 4.1**

**Revenue Trends of NEA for FY 2057/58 to 2063/64**

Year	Budgeted sales		Increase over previous year		Actual sales		Increase over previous year	
	Unit	Amount	Unit%	Amount%	Unit	Amount	Unit%	Amount%
2057/58	1533.516	9101.282	-	-	1407.13	8377.83	-	-
2058/59	1685.487	10515.19	9.91	15.54	1534.32	9687.65	9.04	15.63
2059/60	1804.9	12238.800	7.08	16.39	1696.82	11237.49	10.59	15.99
2060/61	1906.622	12825.732	5.64	4.8	1795.23	11992.61	5.8	6.72
2061/62	1988.850	13275.383	4.31	3.51	1964.39	13103.18	9.4	9.26
2062/63	2066.27	13721.41	3.89	3.36	2032.62	13672.71	3.47	4.35
2063/64	2258.14	15120.66	9.28	10.2	2204.62	14777.26	8.46	8.08

Source: Annual Report and Budget Book of NEA from 2057/58 to 2063/64

Table 4.1 shows NEA'S sales unit and revenue trends both planned revenue and actual revenue for the period of 2057/58 to 2063/64. It is cleared from the table that in the year 2058/59 planned revenue was increased by 15.54% and sales unit 9.91% respectively, which was the result of increase in tariff rate.

In fiscal year 2059/60 planned growth in sales unit and revenue was 7.08% and 16.39 respectively. Actual performance shows that 10.59% in sales unit and only 15.99% in sales revenue was achieved.

Similarly in FY 2060/61 only 5.64% increase in sales unit and 4.8% increase in sales revenue was targeted. But the achievement was 5.8% and 6.72% in sales unit and revenue respectively.

In the same way in the FY 2062/63 the budgeted growth in sales unit and revenue was 3.89% and 3.36 respectively. The achievement in sales revenue was greater than planned and was satisfactory.

In FY 2063/64 the achievement in sales unit and revenue was 8.46% and 8.08% respectively which was less than planned which was 9.28% and 10.2%.

**Table 4.2**

**Planned and Actual Sales and Achievement of NEA for 2057/58 to 2063/64**

**(in million)**

Year	Budgeted sales		Actual sales		Achievement	
	Unit	Amount (Rs)	Unit	Amount (Rs)	Unit%	Amount%
2057/58	1533.516	9101.282	1407.13	8377.83	91.76	92.05
2058/59	1685.487	10515.19	1534.32	9687.65	91.03	92.13
2059/60	1804.9	12238.800	1696.82	11237.49	94.01	91.82
2060/61	1906.622	12825.732	1795.23	11992.61	94.16	93.50
2061/62	1988.850	13275.383	1964.39	13103.18	98.77	98.70
2062/63	2066.27	13721.41	2032.62	13672.71	98.37	99.65
2063/64	2258.14	15120.66	2204.62	14777.26	97.63	97.73

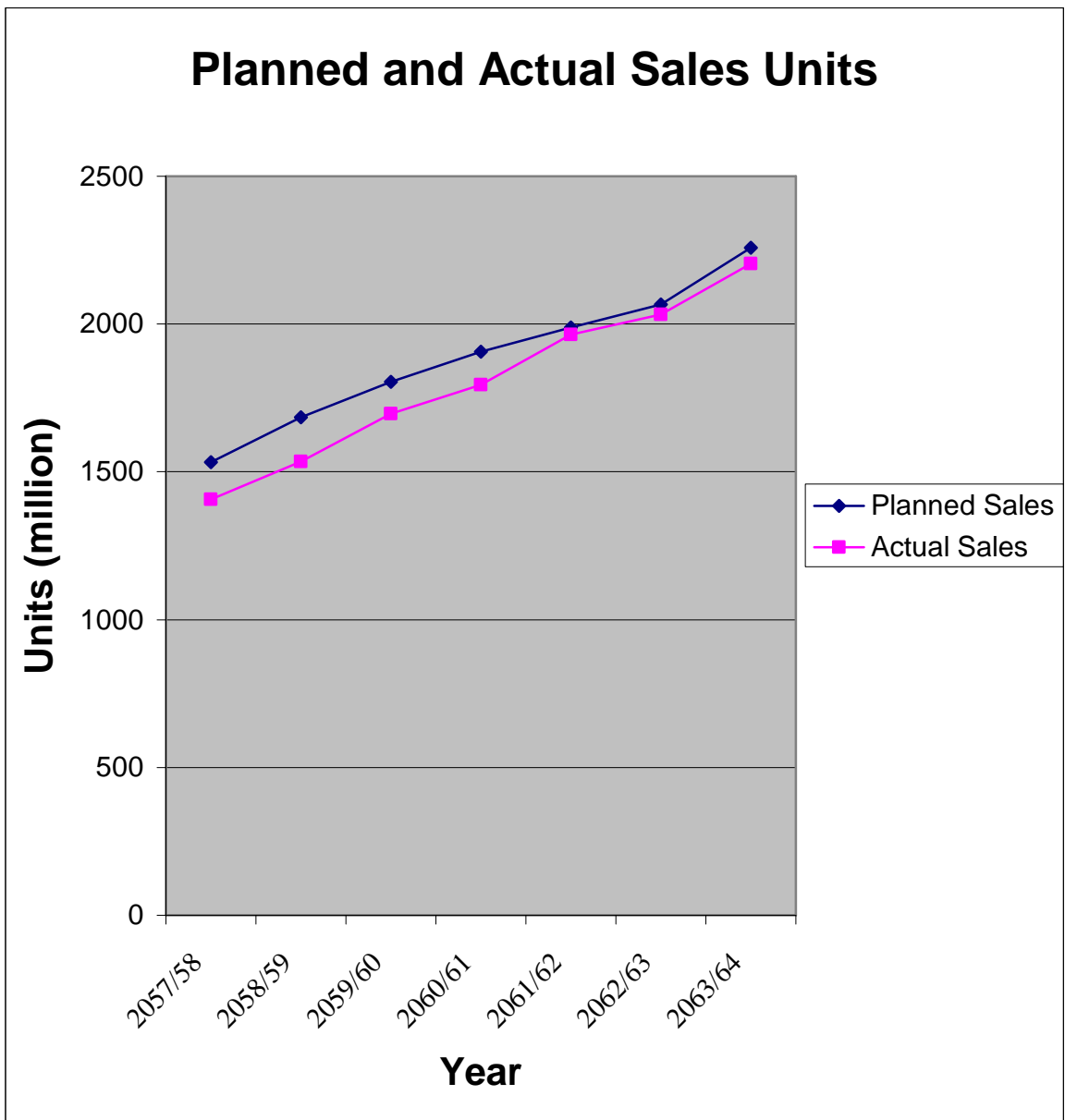
Source: Annual Report and Budget Book of NEA from 2057/58 to 2063/64



Table 4.2 shows the planned sales and actual sales with their respective achievement. The above mentioned table clearly shows budgeted sales, actual sales and achievement of NEA in different years. In the fiscal year 2057/58 budget sales unit was 1533.516 and actual sales was 1407.13 unit which is 91.76 percentage of budgeted sales unit. Similarly budgeted sales was Rs.9101.282 and actual sales was Rs.8377.83 which is 92.05 percentage of budgeted sales amount. It shows that the achievement was not so satisfactory. There was gradual increase in the sales unit and sales amount up to the FY 2063/64. Similarly there was gradual increase in achievement of actual sales unit of NEA upto FY 2062/63. But in the FY 2063/64 it is decrease and becomes 97.63 percent. Again, it gradually increases except in the FY 2059/60 and 2063/64.

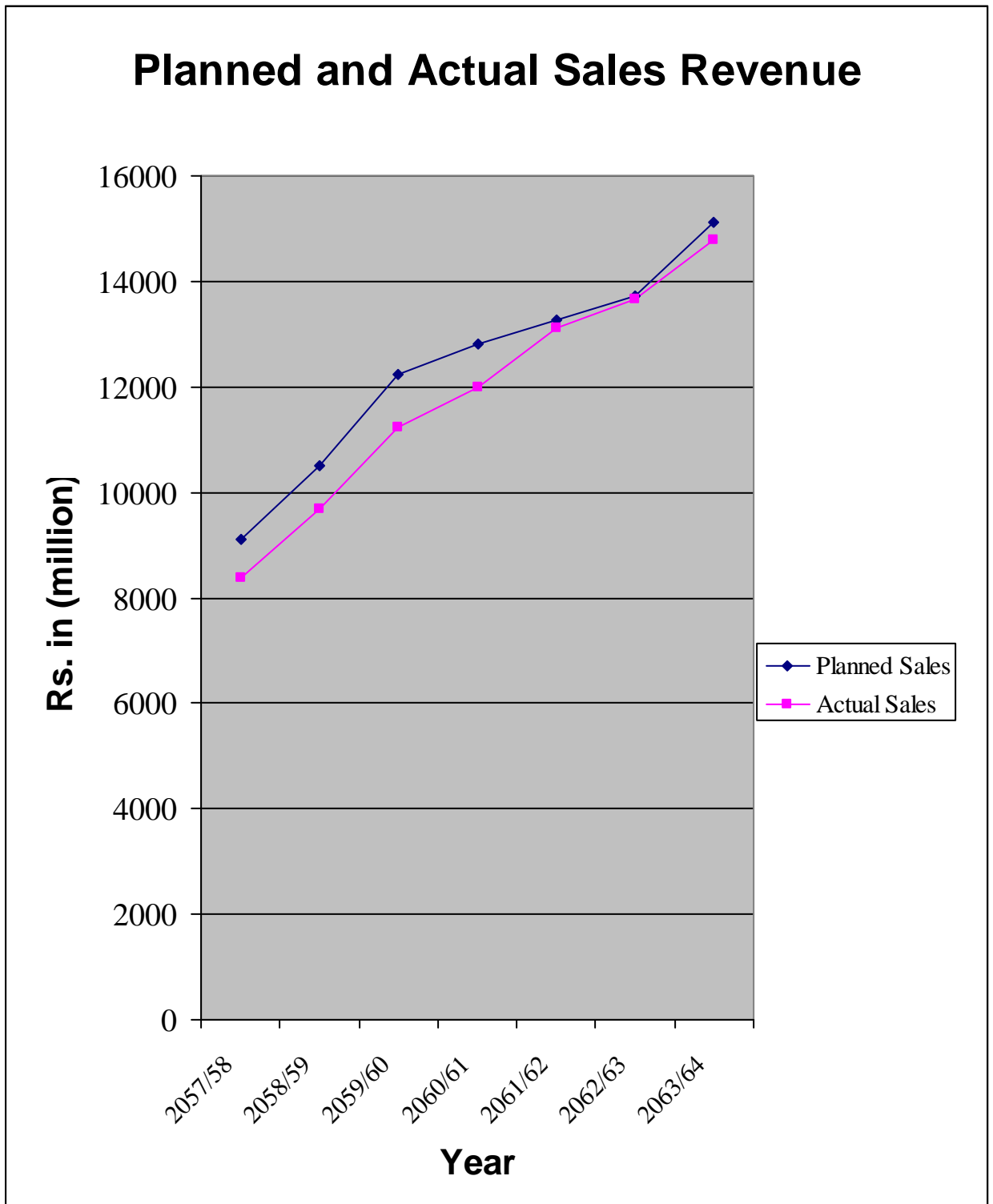
From the analysis of above table it is useful to note that the annual achievement was not less than 91.82 percent and not above than 99.65. The achievements of NEA was not so satisfactory upto 2060/61 but in the FY 2061/62, 2062/63 and 2063/64 it was satisfactory. When analyze the target and actual sales figure of each year, it can say that targets are mainly based on historical sales performance. From the table it can be said that actual sales achievement of NEA is consistent with budgeted sales, the achievement in sales unit and revenue is not less than near about 91%.

Graph No: 1



Graph 1 shows plant and actual sales units. The graph indicates that gap between planned sales unit and actual sales unit is very small.

Graph No: 2



Graph 2 shows planned and actual sales revenue. The Graph indicates that gap between planned sales revenue and actual sales revenue is very small.

**Table 4.3**

**Standard Deviation and Co-efficient of Variation of NEA Performance for 2057/58 to 2063/64(see appendix 1 and 2)**

Statistical Tools	Budgeted sales (unit in GWH)	Actual sales (unit in GWH)	Budget sales revenue (million)	Actual sales revenue (million)
Mean	1891.9693	1805.0186	12399.7796	11835.5329
S.D. († )	224.4889	261.9375	1872.9538	2090.3609
C.V.	11.87%	14.51%	15.1%	17.66

Table 4.3 shows the mean, standard deviation and coefficient of variation of planned sales and actual sales. The calculated mean of budgeted sales is 1891.9693 unit in million where as actual sales is 1805.0186 unit in million. Coefficients of variation of budgeted sales is 11.87 percent and actual sales is 14.51 percent. The variation of actual sales is greater than budgeted sales due to the higher fluctuation in sales of the year 2060/61, 2061/62 and 2063/64. Standard deviation value of actual sales is 261.9375 which is greater than budget sales standard deviation.

The calculate mean of actual sales revenue 11835.5329 which is less than of budgeted. The standard deviations of sales revenue is 1872.9538 and 2090.3609 respectively in budgeted and actual sales revenue. The C.V. of budgeted sales revenue is 15.1 percent but the C.V. of actual sales revenue is 17.66 percent.

The above result depicts that actual sales is lesser than budgeted sales and standard deviation and co-efficient of variation are higher than budgeted sales figure. Higher coefficient of variation (C.V.) is the indication of less consistent or more variable. Since the C.V. of actual sales unit and sales revenue is higher than budgeted sales unit

and sales revenue, the actual sales is more variable than budgeted sales. Therefore, actual sales of NEA are the nature of more variability than budgeted sales

**Table 4.4**

**Correlation Co-efficient Analysis Table for Actual and Budget Sales Unit and Revenue (see appendix 1 & 2)**

Correlation coefficient budgeted and actual	Sales unit	0.9942
Correlation coefficient budgeted and actual	Sales revenue	0.991
Probable error budgeted and actual	Sales unit	0.00295
Probable error budgeted and actual	Sales revenue	0.0046

The calculated value of correlation ( $r$ ) between actual and budgeted sales unit is 0.9942%. The value of ( $r$ ) indicates that there is a positive correlation between the budgeted sales and actual sales. Thus it can be said that there is perfect correlation between two variables. The significance of ( $r$ ) is tested with the help of probable error after the examining the relationship between budgeted and actual sales. The value of P.E. of sales unit is 0.00295, now it is necessary to compare it with value of ' $r$ '. As the value of probable error (P.E.) of ' $r$ ' is less than value of ' $r$ ' (i.e.  $0.99 > 0.00296$ ), the value of ' $r$ ' is definitely significant. Therefore, it can be noted that the actual sales unit is going on the same direction that of budgeted sales unit.

Similarly the correlation between budgeted sales revenue and actual sales revenue is also positive which 0.991 is. The value of probable error (P.E.) of sales revenue is 0.0046 which is less than value of ' $r$ ' (i.e.  $0.991 > 0.0046$ ) it shows the value of ' $r$ ' is definitely significant. In other words, it is clear that the actual sales revenue will change in the same direction of the change in budgeted sales revenue.

## Time Series Analysis

Time element is also another important factor to predict sales with the passage of time. The actual sales changes which can be expressed by the component of time series. It is also known as least square method. Least square methods is suitable statistical tool that can be applied to analyze the trend of actual sales and to predict the possible future sales for a given time period. A straight line trend methods shows the relationship between time or years and actual sales of the relevant year. (see appendix 3)

**Table 4.5**

### **Straight Line Trend of Sales Unit and Revenue of NEA**

Year	X	Actual sales	
		Unit (y)	Amount (Rs.) y
2057/58	-3	1407.13	8377.83
2058/59	-2	1534.32	9687.65
2059/60	-1	1696.82	11237.49
2060/61	0	1795.23	11992.61
2061/62	1	1964.39	13103.18
2062/63	2	2032.62	13672.71
2063/64	3	2204.62	14777.26
Unit	Intercept (a) = 1805.01 8574	Amount	Intercept (a) = 11835.53286
	Slope (b) 130.594286		Slope (b)= 1036.932143
Therefore y = 1805.0185 + 130.5942 86 x		Therefore, y = 11835.53286 + 1036.9321 43x	

The trend lines of unit and revenue indicate there will be increase in the sales in the future. The trend lines can be used for forecasting of future figures given the year. ( $x = 4$  for 2064/65,  $x = 5$  for 2065/66 and so on to forecast the sales unit and revenue for the respective year). The sales unit and revenue will increase by 130.594286 unit and Rs.1036.932143 respectively in every year if the sales trend of the past years continue in the future too.

## **4.2 Category wise Analysis of Revenue**

### **4.2.1 Category wise achievement of sales unit and revenue**

An analysis of planned sales and actual sales as a whole for the fiscal year 2057/58 to 2063/64, it can be concluded that the targets sales in unit is satisfactory but the conversion of planned sales units into revenue is less satisfactory. While preparing revenue plan, the emphasis needs to be given to segment or category of customer. Different segment or category has different tariff rate and most of the activity of authority is based on the customer it is serving. Therefore, real estimation of sales that can be realized from each category of customer is important. Table No. 4.6 and 4.7 shows the category wise achievement of sales unit and revenue (see Appendix 4 for detail).

**Table 4.6****Categorywise Achievement of Sales Unit of NEA****(Percent)**

Category	57/58	58/59	59/60	60/61	61/62	62/63	63/64	Mean
Domestic	90.99	92.99	95.14	90.18	97.45	99.45	97.99	95.25
Non commercial	90.99	96.57	89.71	92.23	100.54	94.32	99.38	91.87
Commercial	90	87.29	84.31	101.05	99.37	97.45	98.48	94.29
Industrial	89.1	98.62	95.38	95.14	99.87	97.78	96.79	96.32
Water supply irrigation	89.99	92.95	91	90.49	99.96	106.48	97.03	89.31
Street light	90	97.1	101.78	92	99.75	97.47	96.29	96.37
Temporary supply	95.4	80	70	92.59	111.4	119.18	98.44	91.36
Transport	92.03	86.77	79	91.17	96.67	94.48	96.19	88.67
Temple	89.96	88.57	100.36	91.33	95.42	97.15	100.21	95.14
Communities	-	114.4	118.5	93	92.06	114.46	106.45	105.94
Bulk supply (India)	105	78.74	96.13	94.15	92.25	95.59	98.24	92.05
Total	91.75	91.03	94.01	94.16	98.77	98.37	97.61	95.5



**Table 4.7****Categorywise Achievement of Sales Revenue of NEA****(Percent)**

Category	57/58	58/59	59/60	60/61	61/62	62/63	63/64	Mean
Domestic	97	91.99	92.55	95.98	99.94	100.78	98.3	96.94
Non commercial	90	92.00	87.11	88.28	89.49	94.86	99.94	91.66
Commercial	92	91.99	82.18	90.55	101.58	98.24	98.38	93.79
Industrial	90	93.00	94.16	99.10	105.3	98.37	97.46	97.17
Water supply irrigation	92	95	78.88	95.24	92.06	100.68	95.42	92.75
Street light	93.99	91	104.46	92.63	92.16	113.21	97.57	104.59
Temporary supply	94.95	91.90	70.22	88.27	116.28	113.38	100.23	92.91
Transport	90	94.99	76.08	81.29	82.78	97.6	97.06	90.16
Temple	88.97	90.00	101.71	83.87	101.23	97.52	105.51	95.99
Communities sales	-	-	118.5	98	102	84.09	103.27	102.08
Bulk supply (India)	79.2	87.27	92.98	66.18	68.29	102.43	87.71	79.31
Total	92.05	92.13	91.82	93.5	98.7	99.65	97.73	95.45

Analysis of the Table 4.6 and 4.7 gives a clear picture that in domestic category, planned sales unit were almost near to actual. The average achievement in sales unit was 95.25% and average achievement of sales revenue was 96.94%.

In non-commercial category, average was 91.87% and 91.66% in sales units and sales revenue respectively. The target was never met in terms of units and revenue.

The average achievement in commercial category was 94.29% and 93.79% in sales units and sales revenue.

In industrial category, average achievement being 96.32% in sales unit and 97.17% in revenue. Actual sales in this category were excessively achieved in 2060/61 to 2063/64.

Achievement in water supply and irrigation category is very variable. In year 2059/60 achievement in sales unit was 81% and in sales revenue it was 78.88%. But in year 2062/63 achievement in sales unit was 106.48% and in sales revenue it was 100.68%. The average achievement in sales unit and sales revenue 89.31% and 92.75% respectively.

Street light category is also fluctuating in terms of achievement. However average was 96.37% and 104.59% for sales unit and sales revenue respectively. The fluctuating figures suggest that the planning in this category was satisfactory.

Temporary supply category is also very variable. In year 2059/60 achievement in sales unit was 70% only and in sales revenue was 70.22%. But in year 2062/63 achievement in sales unit was 119.18% and in year 2061/62 achievement in sales revenue was 116.28%.

Transport category had same problem in planning. In this category achievement in sales unit was not more than 96% and in sales revenue it was not more than 97%. It suggest that the achievement in this category was not satisfactory. The average achievement of the category were 90.16% and 88.67% in sales revenue and sales unit respectively.

The temple category in also not satisfactory at all. The high fluctuations in the sales revenue from 83.87% to 105.51 suggest weakness in planning. The average achievement of the category were 95.14% and 95.99 in sales unit and sales revenue respectively.

The average achievement in community sales was 105.94% and 102.08 in sales unit and sales revenue. It suggest that the achievement in this category was satisfactory.

The planning in the bulk supply to India category is also not satisfactory and lacks consistency. The range of achievement in sales unit is 78.74% to 105% and that in revenue is 66.18% and 102.43%. The average achievement is 92.05% and 79.31% in sales unit and revenue respectively. The achievement in revenue is less than achievement in sales unit.

It can be concluded from the above that planning of sales in domestic, industrial, street light, community sales are relatively satisfactory but planning in other categories certainly has major draw backs.

NEA uses the historical average increase in the sales to forecast sales. For the purpose, it finds separate average growth rates of domestic non commercial, commercial and industrial category and uses it to plan for next year sales. In the case of water supply, street light temporary supply, transport, temple and bulk supply to India. It finds out combined average growth rates to use for planning. This has caused the serious problem in planning of these categories. Individual category has different growth rates and they can not be combined for the planning of individual category.

## 4.2.2 Contribution of each Category in total sale

**Table 4.8**

**Contribution of Each Category in Sales Unit (See Appendix -5)**

Category	57/58	58/59	59/60	60/61	61/62	62/63	63/64	Mean
Domestic	36.84	36.36	36.37	37.68	38.6	39.64	40.53	38.2
Non commercial	5.2	5.1	4.76	4.62	5.12	4.69	4.56	4.84
Commercial	6.69	5.89	5.47	6.02	5.56	5.92	6.43	5.99
Industrial	37	38.89	37.1	38.42	38.89	38.65	38.52	38.27
Water supply irrigation	2.03	1.91	1.77	1.76	2.54	2.24	2.18	2.08
Street light	2.63	2.58	2.7	3.07	2.79	3.11	3.04	2.87
Temporary supply	0.06	0.02	0.02	0.01	0.02	0.04	0.06	0.03
Transport	0.42	0.37	0.33	0.3	0.29	0.28	0.29	0.32
Temple	0.18	0.16	0.17	0.23	0.23	0.23	0.22	0.21
Communities sales	-	0.37	0.28	0.31	0.31	0.45	0.70	0.37
Bulk supply (India)	8.95	8.72	11.33	7.87	5.64	4.75	3.49	6.94
Total	100	100	100	100	100	100	100	100

**Table 4.9****Contribution of Each Category in Sales Revenue****(Percent)**

Category	57/58	58/59	59/60	60/61	61/62	62/63	63/64	Mean
Domestic	37.74	37.59	37.82	38.18	38.77	39.53	40.75	38.79
Non commercial	9.98	7.45	6.98	6.8	7.23	6.45	6.36	7.15
Commercial	6.63	8.45	7.96	8.22	7.75	8.18	8.72	8.06
Industrial	36.84	37.24	35.96	36.52	37.02	36.41	35.87	36.51
Water supply irrigation	1.44	1.43	1.32	1.29	1.83	1.45	1.45	1.47
Street light	2.1	2.07	2.2	2.75	2.41	3.09	3.08	2.59
Temporary supply	0.081	0.04	0.04	0.03	0.04	0.08	0.12	0.06
Transport	0.33	0.29	0.26	0.24	0.23	0.22	0.21	0.25
Temple	0.14	0.13	0.13	0.17	0.18	0.18	0.18	0.16
Communities sales	-	-	0.15	0.17	0.16	0.17	0.36	0.18
Bulk supply (India)	4.73	5.31	7.2	5.62	4.38	4.24	2.90	4.8
Total	100	100	100	100	100	100	100	100

Table 4.8 and 4.9 give a picture of sales unit and revenue contributed by each category from 2057/58 to 2063/64 Table show that domestic category gave first highest contribution in sales revenue and second contribution in sales unit. Sales unit in domestic contribution is sales unit .Sales unit in domestic category remained in between 36.36% to 40.53% of total sales unit averaging 38.2% of total sales unit. However the category contributed 37.74% to 40.75% of total sales revenue averaging 38.79 of total sales revenue than sales unit.

Average contribution of non-commercial category was 4.84% of total sales unit and 7.15% of total sales revenue. Sales unit in non-commercial category fluctuated from 4.56% to 5.21% and sales revenue varied from 6.36% to 9.98%. Average contribution of commercial category was 5.99% of total sales unit and 8.06%

of total sales revenue. Commercial category contributed more revenue than sales unit. Sales unit in this category ranged from 5.47% to 6.69% and range of sales revenue was 6.63% to 8.72%.

Industrial category was the highest contributor in sales unit but second contributor in sales revenue. Industrial category's contribution in sales unit and sales revenue was in decreasing trend from FY 2061/62. The decrease in sales unit in this category is mainly due to the lack of growth in number of customer compared to customer growth in other category. Average contribution of industrial category was 38.27% of total sales unit and 36.51% of total sales revenue.

Water supply and irrigation, streetlight, temple, transport, community sales and temporary supply category were smaller contributor in sales. The categories except temporary supply also contributed less revenue than sales unit. Temporary supply contributed sales revenue double of its contribution in sales unit.

Bulk supply to India is highly fluctuating than other category. Its contribution is in decrease trend from FY 2059/60.

### 4.2.3 Category wise Analysis of selling price

**Table 4.10**

**Summary of Budgeted and actual Selling price in the Fiscal Year 2063/64**

Category	Budgeted (unit and rupee in million)			Actual (unit and rupee in million)		
	rate	unit	amount	rate	unit	amount
Domestic	6.72	911.51	6125.33	6.74	893.27	6021.40
Non commercial	9.3	101.15	940.73	9.35	100.52	940.20
Commercial	9.1	143.88	1309.29	9.09	141.69	1288.05
Industrial	6.2	877.26	5439.02	6.24	849.13	5300.91
Water supply irrigation	4.54	49.43	224.46	4.47	47.96	214.18
Street light	6.71	69.48	466.19	6.799	66.90	454.85
Temporary supply	13.53	1.28	17.32	13.78	1.26	17.36
Transport	4.97	6.56	32.61	5.016	6.31	31.65
Temple	5.17	4.77	24.67	5.45	4.78	26.03
Communities	3.57	14.57	52	3.46	15.51	53.70
Bulk supply (India)	6.25	78.25	489.04	5.58	76.87	428.93
Total	6.696	2258.14	15120.66	6.7	2204.20	14777.26

Source: Annual Report and Budget Book of NEA from 2058/59 to 2063/64

Table 4.10 shows the analysis of budgeted and actual selling price per unit of NEA during 2063/64. The budgeted sales is targeted 911.51 million units at Rs. 6.72 per unit which is amounted Rs.6125.33 million for domestic sector. The actual sales for domestic sector is 893.27 million units at the rate of 6.74 per unit and the total amount was Rs. 6021.40.

For non commercial sector budgeted sales was 101.15 million units at Rs.9.3 per unit, which is amounted Rs.940.73 million. Likewise actual achievement was 100.52 million units the rate of Rs.9.35 per unit which sector budgeted sales 143.88 unit at the rate Rs.9.1 where the actual achievement is 141.69 million units at the rate of Rs.9.09 which is Rs.1288.05 millions. Budgeted sales for industrial sector 877.26

million units at the rate of Rs.6.2 per unit amounted Rs.5439.02 million. But the actual sales units were 849.13 million at the rate of Rs.6.24 per unit amounted Rs.5300.91 millions.

For water supply and irrigation, budgeted sales was 49.43 million unit at the rate of Rs.4.54 but the actual sales was 47.96 unit at the rate of Rs.4.47 for street light budgeted rate was Rs.6.71 and actual rate was Rs.6.799.

For temporary supply budgeted sales rate was Rs.13.53 and actual rate was 13.78 likewise transport budgeted rate was 4.97 and actual rate 5.016.

Budgeted bulk supply were 78.25 unit at the rate Rs.6.25 per unit which is amounted Rs.489.04. The actual sales for bulk supply is Rs.428.93 million at the rate Rs.5.58.

From the above analysis it can be concluded that in domestic, Non-commercial, commercial, industrial, street light, temporary supply, transport, temple category actual selling price rate. In other category budgeted selling price rate is higher than actual.

### 4.3 Production Budget of NEA

**Table 4.11**

**Budgeted Production and Actual Production FY 2057/58 to 2063/64**

Year	Budgeted Production	Actual Production	Achievement%
2057/58	1870.42	1868.42	99.89
2058/59	2003.880	2066.45	103.12
2059/60	2149.00	2261.13	105.22
2060/61	2469.718	2380.89	96.4
2061/62	2565.806	2642.75	102.99
2062/63	2777.41	2780.92	100.23
2063/64	3051.82	3051.82	100



Table 4.11 shows the detailed production target and achievement of NEA from 2057/58 to 2063/64. Table shows that the overall production budget and its actual condition. In the FY 2057/58 budgeted production was 1870.42 unit and the actual production was 1868.42 units which is 99.89 percent achievement of NEA planning. In the FY 2058/59 budgeted production was 2003.880 and actual production was 2066.45 which is 103.12 percent achievement of NEA planning in the same way the achievement in FY 2059/60 was to 5.22 percent, in 2060/61 was 96.4 percentage, in 2061/62, 102.99 percentage and 2062/63 was 100.13 percent of budgeted production. In FY 2063/64 budgeted production was 3051.82 unit and actual production was 3051.82 unit which is 100 percent of budgeted production. It suggested more accuracy in planning.

From the analysis of above table it is useful to note that the annual achievement was not less than 96.4 percent and not above than 105.22. It can be concluded from above that planning and achievement of sales was satisfactory. Budgeted and actual production was in increasing trend. The achievement was higher than planned except in FY 2057/58 and 2060/61, so the production budget of NEA was satisfactory.

#### **4.4 Loss Analysis**

The major problem that NEA is facing is transmission loss. Table 4.12 gives the status of loss and their relation with production and sales. (See Appendix 6)

**Table 4.12****Planned and Actual Transmission Loss of NEA**

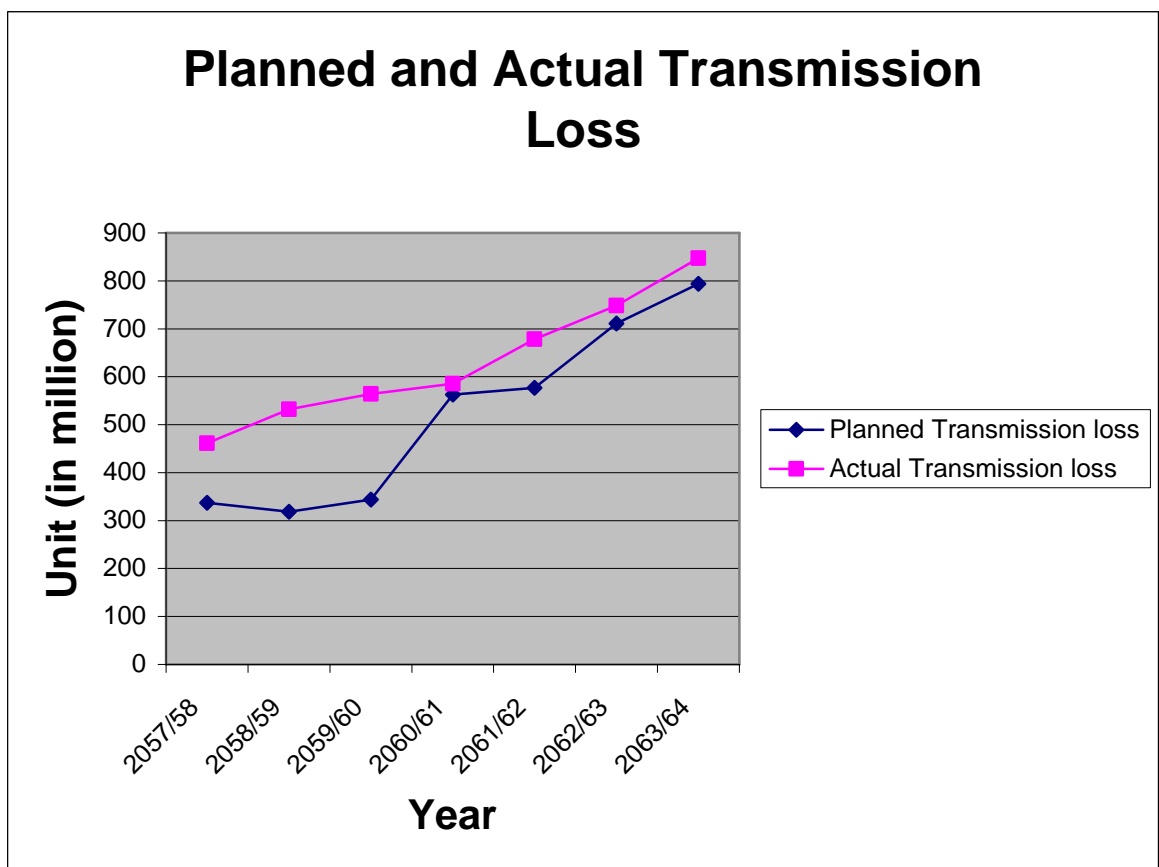
Year	Planned			Actual		
	loss unit	loss % compared to prod <sup>n</sup>	loss% compared to sales	loss units	loss % compared to prod <sup>n</sup>	loss% compared to sales
2057/58	336.904	18.01%	21.97%	461.29	24.69	32.78
2058/59	318.393	15.89%	18.89%	532.13	25.75	34.68
2059/60	344.1	16.01%	19.06%	564.31	24.96	33.26
2060/61	563.096	22.8%	29.53%	585.65	24.59	32.62
2061/62	576.956	22.49%	29.00%	678.36	25.67	34.53
2062/63	711.14	25.6%	34.42%	748.3	26.91	36.81
2063/64	793.68	26.00%	35.15%	847.2	27.76	38.43

From the table 4.12, it is clear that huge amount of energy that NEA has produced and purchased was wasted as transmission loss without any contribution in sales revenue. The loss is in increasing trend suggesting the NEA's efforts to decrease the loss have not made much difference.

Comparison of planned loss with actual loss shows that NEA had targeted 18.01% of production and 21.97% of sales in the year 2057/58. But the target has not been achieved and actual loss was 24.69% production and 32.78% of sales. In 2058/59, planned loss was 15.89% of production and 18.89% of sales but the actual loss increased to 25.75% of prod<sup>n</sup> and 34.68% of sales. In 2059/60 planned loss compared to production was 16.01% but actual loss was 24.96% of production. In 2060/61, planned loss was 22.8% of prod<sup>n</sup> but the actual loss increased to 24.59% of

production. In 2061/62, planned loss was 22.49% of prod<sup>n</sup> but the actual loss increased to 25.67% of prod<sup>n</sup>. In 2062/63 planned loss was 25.6% of prod<sup>n</sup> and actual loss was 26.91% of production and 36.81% of sales. In 2063/64 planned loss compared to production was 26.00% and compared to sales was 34.42% but actual loss was 27.76% of production and 38.43% of sales.

**Graph No: 3**



Graph 3 shows planned and actual transmission loss indicates remarkable gap between planned and actual transmission loss.

## 4.5 Analysis of Relations Between Sales and Number of Customer

**Table 4.13**

**Percentage Increase in Actual Sales and Number of Customer**

Year	Actual sales		Increase %		No. of customer	Increase %
	unit	amount (Rs.)	unit	amount		
2057/58	1407.13	8377.83	-	-	745992	-
2058/59	1534.32	9687.65	9.04	15.63	884535	18.57
2059/60	1696.82	11237.49	10.59	15.99	970611	9.73
2060/61	1795.23	11992.61	5.8	6.72	1053935	8.58
2061/62	1964.39	13103.18	9.4	9.26	1159855	10.05
2062/63	2032.62	13672.71	3.47	4.35	1277447	10.14
2063/64	2204.62	14777.26	8.4	8.08	1397813	9.42

Table 4.13 shows the percentage increase in sales and number of customer. Table shows the effect of number of customer on sales. In year 2058/59 number of customer increased by 18.57 percent while sales unit increased only by 9.04 percent. This shows that average consumption of each customer had decreased. In this year tariff rate was increased which resulted increase in revenue by 15.63 percent. Thus, it may be the effect of price like on average consumption of the customer.

In year 2059/60 number of customer increased by 9.73 percent but due to the increase in average consumption sales unit increase by 10.59 percent and revenue by 15.99 percent. In 2060/61 number of customer increased by 8.58 percent and sales unit increased by 5.8 percent and revenue increased by 6.72 percent.

In 2061/62 number of customer increased by 10.05 percent and sales unit increased by 9.26 percent. In this year NEA did not increased its tariff structure and so sales revenue increased only by 9.26 percent. In the year 2062/63 number of customer

increased by 10.14 percent, sales unit increased by 3.47 and sales revenue 4.35 percent. In this year average consumption was very low.

In the year 2063/64 number of customer increased by 9.42 percent and sales unit increased by 8.4 percent. In this year increased percent in revenue was less than increase percent in unit which was 8.08 percent. From above calculation we can conclude that the average consumption was decrease except in FY 2059/60.

#### **4.6 Analysis of Actual Sales, Energy Available, Operating Expenses and Operation Profit.**

**Table 4.14**

**Percentage Increase in Sales, Energy Available, Operating Expenses and Operating Profit (See appendix 7)**

Year	Actual sales		Increase%		Energy available	increase %	Operating expenses	increase %	Operating profit	increase %
	unit	amount	unit	amount						
2057/58	1407.13	8377.83	-	-	1868.42	-	9047.4	-	(51.00)	-
2058/59	1534.32	9687.65	9.04	15.63	2066.45	10.59	10836.6	19.78	(860.70)	1587.65
2059/60	1696.82	11237.49	10.59	15.99	2261.13	9.42	12233.9	12.89	(1953.70)	126.98
2060/61	1795.23	11992.61	5.79	6.72	2380.89	5.29	13628.2	11.39	(1760.3)	(9.89)
2061/62	1964.39	13103.18	9.42	9.26	2642.75	10.99	14505.6	6.44	(1312.80)	(25.42)
2062/63	2032.62	13672.71	3.47	4.35	2780.92	5.23	15429.11	6.37	(1267.80)	(3.43)
2063/64	2204.62	14777.26	8.46	8.08	3051.82	9.74	15632.98	1.32	(314.19)	(124.78)

Table 4.14 Shows Percentage Increase in Sales, Energy Available Operating Expenses and Operating Profit. The table shows that in 2058/59, operating expenses increased by 19.78% but sales unit and energy available was increased by only 9.04% and 10.59% sales revenue was increased by 15.63%. In subsequent year 2059/60 sales

unit and energy available increased by 10.59% and 9.42% with only 12.89% increase in operating expenses.

In 2060/61, operating expenses increased by 11.39% with the increase in sales unit and energy available by 5.79% and 5.29% respectively. However in 2061/62 operating expenses increased by 6.44 with increase in sales unit and energy available by 9.42% and 10.99% respectively.

In 2062/63 sales unit and energy available increased by 3.47% and 5.23% with 6.37% increase in operating expenses. Likewise in 2063/64, operating expenses increased by 1.32% with the increase in sales unit and energy available by 8.46 and 9.74. It shows that increase in operating expenses is in decreasing trend while increase in sales unit and energy available are in fluctuating trend. Thus, it can be concluded that NEA had been able to control operating expenses but it is not sufficient to earn profit.

In 2058/59 sales revenue was increased by 19.63% but operating loss was increased by 1587.65%. This is due to the high operating expenses. In 2059/60 operating loss increased by 126.98% with the increase of 15.99% in sales revenue. In 2060/61 operating loss decreased by 9.89% while the increase of 6.72% in sales revenue. After FY 2060/61 operating expenses at last in FY 2063/64 NEA earn profit, in this year NEA was able to control the increase in operating expenses. Therefore, operating profit was realized.

Above analysis shows that percentage in sales revenue is in fluctuating trend, increase in operating expenses is in decreasing trend and operating loss in decreasing trend. It shows that operating loss was directly proportionate to operating expenses. The amount of operating cost contains huge amount of fixed cost. Thus, it can be concluded that NEA must control operating expenses to increase operating profit.

## 4.7 Categorywise Analysis of Average Consumption and Average Revenue per Customer

**Table 4.15**

**Average consumption per customer of each category (See Appendix 8)**

Category	57/58	58/59	59/60	60/61	61/62	62/63	63/64
Domestic	0.73	0.66	0.66	0.67	0.68	0.66	0.67
Non commercial	9.57	9.06	8.30	8.41	10.10	9.52	9.84
Commercial	27.81	23.19	17.44	19.82	18.22	19.50	23.62
Industrial	29.41	31.76	31.74	32.27	33.96	34.12	35.25
Water supply irrigation	21.68	18.25	14.80	10.89	13.26	6.66	3.53
Street light	36.54	37.71	37.27	38.41	36.57	40.8	41.60
Temporary supply	5.89	1.63	2.54	1.67	2.52	5.27	6
Transport	159.19	115.10	115.21	113.96	116	104.63	161.79
Temple	1.74	1.38	1.62	2.09	2.13	2.08	1.82
Communities sales	-	5720	4740	372	172.29	158.28	91.78
Bulk supply (India)	25200	16772	38450	28246	22140	19310	15374

Table 4.15 Shows Average Consumption Per Customer of Each Category

Table shows that average consumption of domestic category was 0.73, 0.66, 0.66, 0.67, 0.68, 0.66, 0.67 from FY 2057/58 to 2063/64. It showed that the average consumption was in fluctuating trend. Average consumption of non commercial category was also in fluctuating trend the highest consumption was in year 2061/62 which was 10.10 and the lowest was in 2059/60 which was 8.30. Average consumption of commercial category was 27.81 in FY 2057/58 and it was in decreasing trend up to FY 2059/60. In FY 2060/61 it was 19.82, after 2061/62. It was in increasing trend. Average consumption of industrial category was 29.41 in 2057/58. It was in increasing trend. In water supply and irrigation category average consumption was in decreasing trend except in FY 2061/62. Average consumption of

street light was 36.54 in FY 2057/58, it was in increasing trend except in FY 2059/60 and 2061/62. Average consumption of temporary supply was in fluctuating trend upto FY 2061/62 but then after it was in increasing trend. Average consumption of transport was in decrease trend up to 2062/63 except 2061/62 but in FY 2063/64 it was increased average consumption of temple category was 1.74 and 1.82 in FY 2057/58 and 2063/64 respectively and showed fluctuating trend. Average consumption per customer of community sales category was 5720 in FY 2057/58 than after it was rapidly decreased. Average consumption per customer of bulk supply category was in increasing trend up to FY 2059/60 and there after it was decreasing trend.

**Table 4.16**

**Average Revenue Per Customer of Each Category(See Appendix 8)**

Category	57/58	58/59	59/60	60/61	61/62	62/63	63/64
Domestic	4.43	4.29	6.89	4.53	4.56	4.40	4.49
Non commercial	109.35	83.69	80.64	82.72	95.16	88.08	92.04
Commercial	164.09	210.04	168.31	180.80	169.25	181.23	214.68
Industrial	174.35	192.03	203.68	204.93	215.62	216.28	220.06
Water supply irrigation	91.66	86.46	73.31	53.21	63.65	28.98	15.75
Street light	173.96	191.55	200.81	229.31	210.3	272.48	282.87
Temporary supply	48.01	21.10	34.35	23.07	35.48	67.76	82.67
Transport	749.46	569.39	610.21	602.92	609.4	551.48	811.54
Temple	7.95	6.76	8.19	10.62	10.73	10.66	9.90
Communities	-	-	6590	1339	612	412.76	317.75
Bulk supply (India)	79212	102824	161792	134738	114688	115866	85786

Table 4.16 shows average revenue per customer of each category The table shows average revenue per customer of domestic category was 4.43 in 2057/58, in 2058/59 it was decreased to 4.29, in 2059/60 it was increased to 6.89 again in 2060/61



it was decreased after than it was in increasing trend. Average revenue per customer of non commercial category was in fluctuating trend. Average revenue per customer of commercial category was 164.09 in 2057/58. It was in fluctuating trend up to FY 2061/62 than after it was in increasing trend. In the industrial category average revenue was 174.35 in 2057/58 and it was increasing trend up to 2063/64. Average revenue per customer of water supply and irrigation was 90.66 in 2057/58 and it was decreasing trend except in FY 2061/62. Average revenue per customer of street light was 173.96 in FY 2057/58 and it was in increasing trend up to 2063/64 except in FY 2061/62. Average revenue per customer of temporary supply was 48.01, 21.10, 34.35, 23.07 in FY 2057/58, 2058/59, 2059/60, 2060/61 respectively which was in fluctuating trend. After the FY 2060/61 it was in increasing trend. Average revenue per customer of transport was 749.46 in FY 2057/58 it showed fluctuating trend up to 2063/64. Average revenue per customer of temple was 7.95, 6.76 in FY 2057/58 and 2058/59 respectively and thereafter it showed increasing trend up to FY 2061/62. In the last two year it was in decreasing trend. In the case of community sales category average revenue per customer was 6590 in FY 2059/60 thereafter it was decreasing trend up to 2063/64. Average revenue per customer of bulk supply was increasing trend up to 2059/60 thereafter it was in decreasing trend except in FY 2062/63

#### **4.8 Analysis of Accounts Receivable**

Accounts receivable management is very important to analyze past year's data to evaluate NEA'S efficiency to properly manage accounts receivable.

**Table 4.17****Accounts Receivables, Sales Revenue, Collection Period and Debtor's Turnover****(in million)**

Year	Account Receive	Sales Revenue	Collection period	Debtor turnover
Ref.	1-input	2 = input	$3 \times (1 \div 2) \times 365$	$4 \times 2 \div 1$
2057/58	1678.50	8377.83	37.13 days	4.99 times
2058/59	2284.90	9687.65	86.09 days	4.24 times
2059/60	3380.2	11237.49	109.79 days	3.32 times
2060/61	3735.71	11992.61	113.69 days	3.21 times
2061/62	3697.70	13103.18	103.00 days	3.54 times
2062/63	4088.00	13672.71	109.13 days	3.34 times
2063/64	5151.41	14777.26	127.24 days	2.87 times

Table 4.17 shows the relationship between receivable and sales revenue from which the receivable turnover and average collection period can be analyzed.

The debtors turnover and average collection period were 4.99 times and 73.13 days respectively in FY 2057/58. In FY 2058/59 collection period increased to 86.09 days and debtors turnover decreased to 4.24 times. In the FY 2059/60 the debtors turnover was decreased to 3.32 and collection period increased to 109.79 days suggesting decrease in efficiency in receivable management. But in the FY 2061/62 the debtor turnover was little bit increased to 3.54 and average collection period decreased to 103.00 days. So it can be said that performance was increased in this year. Therefore effectiveness in revenue collection is in decreasing trend as debtors turnover reached to 3.34 in 2062/63 and 2.87 times in 2063/64. Due to decrease in debtors turnover, average collection period was increased to 109.13 days and thereafter to 127.24.

Lower collection period means the company gets its cash quickly and higher the collection period means the company's cash position becomes poor and there is

also chance of more bad debts. NEA'S low turnover of receivable has blocked huge amount of working capital. Therefore, NEA should set the standard of these to variables on the basis of reality and possibilities.

The collection of receivable primarily depends upon the seriousness of the NEA'S executives in applying their better efforts to improve the collection of receivable. NEA being public enterprises with autonomous status, has not taken appropriate legal action about the outstanding receivable. Instead NEA depended more on paperwork only. This could not lead NEA to solve the problem of outstanding receivable. Therefore NEA should make proper effort to make appropriate plan of action to reduce the amount of uncollected revenue proper management of installment agreement, which has been applied to reduce the amount, may bring some amount of relief. NEA has tried the solution but the agreement made was not followed up and further action was not taken by NEA in time. It is found that huge amount of receivable in account of government and semi-government offices. There is no effective policy to solve the problem of large amount of receivable from government offices. In this regard government must help NEA.

Some collection policy has been made by NEA about revenue and receivable collection for customers but has not made any policy to motivate staff for effective collection of revenue or receivable.

So NEA should take clear vision about revenue collection and receivable collection because revenue is main sources of NEA and should try to reduce the average collector period. NEA should make policy about due related to government offices and should also make policy to encourage the staff to collect revenue or receivable.

## 4.9 Variance Analysis

The term variance refers to the deviation of the actual from the budget due to various causes. Variance analysis is the process of calculating the deviation of actual from budgeted and of inter predating the result. Variance analysis helps to ascertain the magnitude of each of the variance and causes of variance so that corrective actions can be taken. In variance analysis when actual results are better than budgeted favourable variance arises. When actual results are not better than budgeted unfavourable variance arises.

**Table 4.18**

### **Sales Variance of NEA FY 2057/58 to 2063/64**

FY	Budgeted sales	Actual sales	Variance	Remarks
2057/58	1533.516	1407.13	126.386	Unfavorable
2058/59	1685.487	1534.32	151.167	Unfavorable
2059/60	1804.9	1696.82	108.08	Unfavorable
2060/61	1906.622	1795.23	111.392	Unfavorable
2061/62	1988.850	1964.39	24.46	Unfavorable
2062/63	2066.27	2032.62	33.65	Unfavorable
2063/64	2258.14	2204.62	54.52	Unfavorable

Above table no. 4.18 shows that sales units variance of NEA. All fiscal year sales unit variance is unfavorable. Responsible department should be held accountable for this unfavorable sales variance in the NEA and take corrective action should be in effective to minimize the adverse impact of such unfavorable variances.

## 4.10 Sales and Profitability of NEA

Simply, profit is the excess of revenue over its costs. To increase profit or earn maximum profit with optimum utilization of available resources is the chief goal of any organization. It is only possible by increasing the revenue or reducing the cost by

not cutting down the costs rather to increase the efficiency costs. Therefore, profit earning highly depends on the sales turnover. The actual sales and profit (loss) of NEA for last seven years are tabulated hereunder.

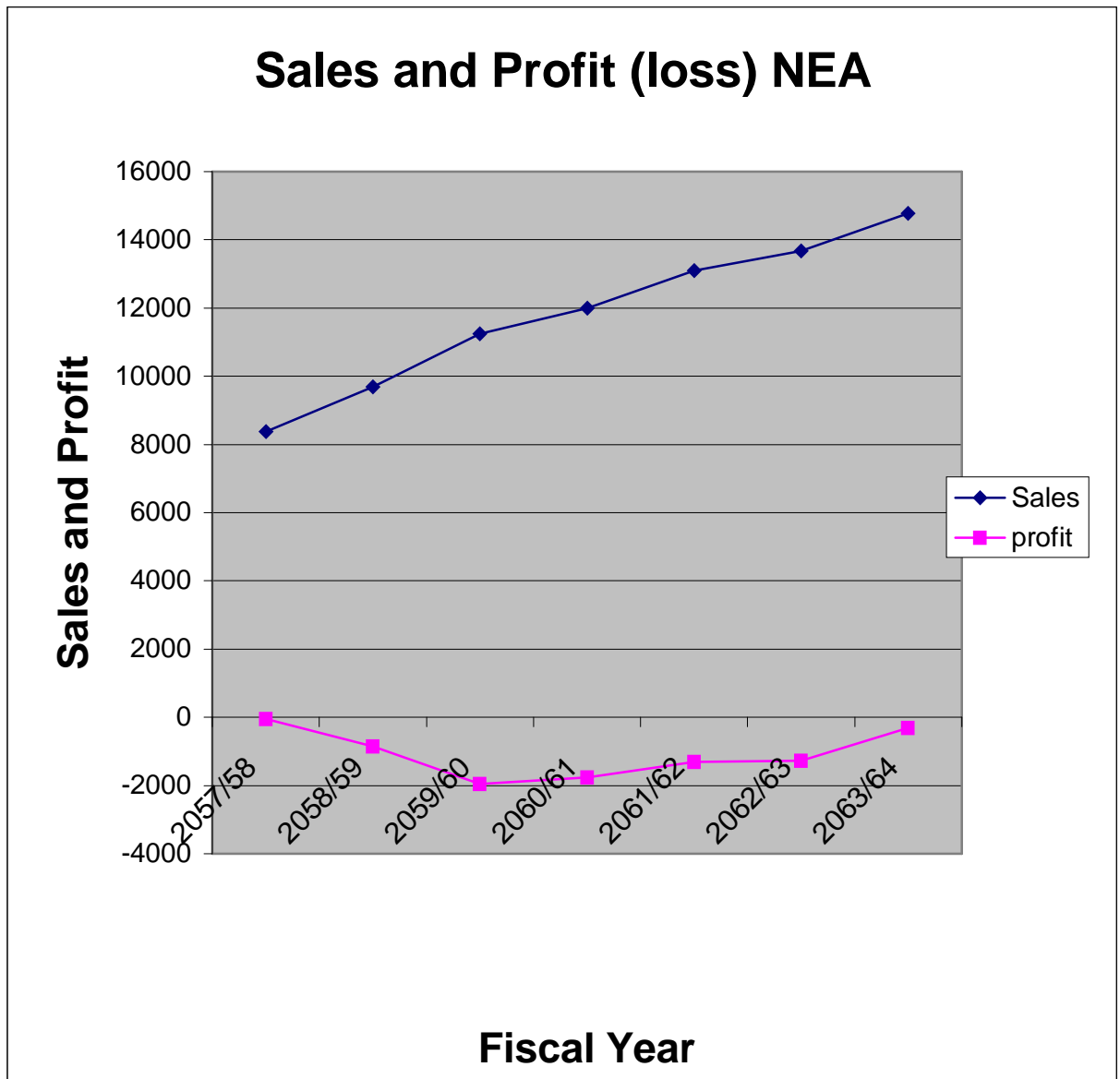
**Table 4.19**

**Sales and Profit (loss) of NEA( in Million)**

FY	Sales	% change in sales	profit(loss)	% change in profit (loss)
2057/58	8377.83	-	(51.0)	-
2058/59	9687.65	15.63	(860.7)	1587.65
2059/60	11237.49	15.99	(1953.7)	126.98
2060/61	11992.61	6.72	(1760.3)	(9.89)
2061/62	13103.18	9.26	(1312.8)	(25.42)
2062/63	13672.71	4.35	(1267.8)	(3.43)
2063/64	14777.26	8.08	(314.19)	(124.78)

Source: A Year Review, NEA, 2008

Graph No. 4



From the above table and diagram it is clear that the sales of NEA is increasing in each fiscal year, however, it is bitter to say that NEA has been suffering by huge loss except in FY 2063/64. In the FY 2059/60, NEA has the highest loss i.e. 1953.7 million and least loss in FY 2057/58 which is 51 million. In the FY 2063/64 NEA earn profit i.e. 314.19 million. In the FY 2058/59, NEA'S loss unexpectedly increased from 51 million to 630.7 million which is increased by 1587.64%. However the sales turnover increased by 15.63%. In the FY 2060/61 the loss of NEA decreased

by 9.89% and the sales turnover increased by only 6.72% which is significant, similarly in FY 2063/64 sales turn over increased by 8.08% and profit increased by 124.78%. Therefore in conclusion, it can be said that, loss is in increasing trend up to FY 2059/60 and than after it is in decreasing trend.

In the years of study period, NEA'S sales turnover is increasing but unfortunately the company has been suffering from loss. This may be due to increasing, in costs like interest that NEA is not being able to manage its available resources properly which constantly encourage to increase the cost. For the proper management of costs and sales, profit planning and control seems to be a must.

## **4.11 Profitability Ratio**

### **4.11.1 Gross Profit Ratio**

This ratio shows the relationship between gross profit and net sales and is generally expressed in percentage. It determines the efficiency with which production or purchase operations are carried on. Gross profit margin should be adequate to cover operating expenses and to provide fixed charges to pay dividend and build up reserves, it is calculated by dividing gross profit by net sales as follows:

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

The Gross Profit of NEA for seven years starting from FY 2057/58 as follows

**Table 4.20**

**Gross Profit Ratio (in million Rs.)**

FY	Gross profit	Sales	Ratio
Ref.	1= input	2 = input	3 = (1-2)×100
2057/58	3680.10	8377.83	43.93%
2058/59	3589.50	9687.65	37.05%
2059/60	5664.60	11237.49	50.41%
2060/61	5109.30	11992.61	42.60%
2061/62	5142.80	13103.18	39.25%
2062/63	4999.20	13672.71	36.56%
2063/64	5415.17	14777.26	36.64%
Average	4800.09	11835.53	40.56%

Source: A Year in Review, NEA, 2008

The above results depicts that gross profit ratio of NEA is not constant. In FY 2058/59 the margin went down from 43.93% to 37.05% and in FY 2059/60, the margin again increased to 50.41 which is the highest margin in the subsequent years. The margin again decreased to 42.60%, 39.25% and 36.56%. Again in FY 2063/64 margin increased to 36.64% the average ratio is only 40.56%.

The increasing ratio is favourable for a firm because that shows the profit is increasing and cost of production on the direct is decreasing. But in case of NEA, the margin is in decreasing trend and the average margin is only 40.56% which is to low. Therefore NEA is in danger position that may result huge loss in coming years too. NEA needs to pay careful to pay careful attention and adopt detail analysis for finding the factors responsible for it.

#### **4.11.2 Net Profit Ratio**

This ratio measures the overall profitability of the firm by establishing relationship between net profit and sales. It indicates management's ability to operate



the business with sufficient success not only to cover the cost of production, operating expenses of business and cost of borrowed fund but also to leave a margin of reasonable compensation to the owners for providing their capital at risk. This ratio is calculated by dividing net profit percentage of net sales as follows:

$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Sales}} \times 100$$

**Table 4.21**

**Net Profit Ratio(in million Rs.)**

FY	Gross profit	Sales	Ratio
Ref.	1= input	2 = input	3 = (1-2)×100
2057/58	(51.00)	8377.83	-0.6087%
2058/59	(860.70)	9687.65	-8.8845%
2059/60	(1953.7)	11237.49	-17.3855%
2060/61	(1760.30)	11992.61	-14.6782%
2061/62	(1312.8)	13103.18	-10.02%
2062/63	(1267.8)	13672.71	-9.27%
2063/64	(314.19)	14777.26	2.13%
Average	(984.59)	11835.53	-8.32%

Source: A Year in Review, NEA, 2008

The above table indicates that NEA is operating under huge loss except FY 2063/64. As net profit is increasing negatively rapidly to the increment in sales, the margin is negatively increasing. The ratio is negative in all FY except in 2063/64. The margin was in increasing trend up to 2059/60 and it was in decreasing trend after that. In FY 2063/64 the net profit ratio was positive i.e. 2.13% which was not satisfactory position. The average ratio is -8.32%.

Higher ratio is definitely indicates better position however, in case of NEA, due to negative margin, the financial position is not satisfactory. This trend can not

fulfill the objectives of NEA due to high expenses. So it need to take immediate action to reduce unnecessary and wasteful expenses.

#### **4.12 Major Findings**

1. No plan and program has been made about possible consumption of electricity in agricultural sector.
2. The annual achievement was not so satisfactory up to FY 2060/61 but in the FY 2061/62, 2062/63, 2063/64 it was satisfactory. Targets are mainly based on historical sales performance.
3. There is a positive correlation between the budgeted sales and actual sales. It is clear that the actual sales revenue is going on the same direction that of budgeted sales revenue.
4. The straight line trend of sales unit suggest growth in sales unit. The straight line trend of sales revenue suggests the same scenario.
5. Planning of the sales in domestic, industrial, street light community sales are relatively satisfactory but planning in other categories certainly has major draw back.
6. Industrial category was the highest contributor in sales unit but second contributor in sales revenue same way domestic contegory gave highest contribution in sales revenue and second contribution in sales unit.
7. In domestic, non commercial, commercial, industrial, street light, temporary supply, transport, temple category, actual selling price rate is higher than budgeted selling price rate. In other category budgeted selling price rate is higher than actual.
8. Production budget of NEA was satisfactory.

9. (i) NEA'S transmission loss is in increasing trend the actual loss is higher than budgeted loss.  
(ii) NEA only set the loss targets but did not make effective action plan to reduce the loss.  
(iii) NEA has failed to reduce the loss  
(iv) NEA failed to implement the loss action plan effectively.
10. Collection period in increasing trend and debtors turnover is in decreasing trend. It means NEA'S effectiveness in revenue collection is in decreasing trend and company's cash position becomes poor.
11. In the years of study period, NEA'S sales turnover is increasing but unfortunately company has been suffering from loss except in FY 2063/64. Loss in increasing trend upto FY 2059/60 and than after it in decreasing trend.
12. The gross profit margin of NEA is positive but not so high. Its average margin is only 40.56% of sales over the research period.
13. The net profit margin of NEA is very much poor. It is negative margin during the study period except in FY 2063/64.
14. Operating expenses is in decreasing trend which is the cause of decreasing in loss of NEA.
15. Number of consumers in increasing each year. NEA'S not being able to make effort to meet the demand of its customers.
16. NEA has not considered major demand determinants of electricity such as family income, price of electricity connection charges, cost of alternative, cost of auto generation and legibility of NEA service.
17. NEA'S credit polity is not so effective to reduce the collection period.
18. In all fiscal year sales unit variance is unfavourable.

19. NEA has not adopted practice of preparing monthly budget.
20. The revenue plans prepared by the brandes and sub branches are not used to prepare control revenue plan.
21. The information, communication system of NEA is not effective since lower level prosonnel were not properly communicated its objectives.
22. There is lack of co-ordination between various responsible departments concerning planning and its implementation.
23. NEA fails to maintain its periodic performance repor systematically.

## **Chapter-Five**

### **Summary, Conclusion and Recommendation**

#### **5.1 Summary**

Public enterprises play a very important role in most of the developing countries. Public enterprise as those organizations, namely governmental enterprise and public corporations. Nepal started its planned economic development in 1956 with the launching of the first five year plan. Since then the number of public enterprises has increased substantially in the various fields of national economy.

Nepal electricity authority is the largest government enterprise in Nepal with the country's highest capital investment, assets and human resources. Nepal electricity authority was established in 1985 under Nepal electricity authority act 1984 in order to make effective dependent and economical production transmission and distribution of electricity and to manage proper electricity supply.

Planning is essence of management and without it we can not imagine efficient management. Planning is the job of making things happens that would not otherwise occur. Management planning provides the basis for performance the four other managerial functions of organizing, staffing, leading and controlling. It is sometimes said that planning is the primary managerial functions which logically proceeds all other functions.

Revenue planning is starting point of overall planning process. Sales is the primary sources of revenue. It is the determinant of manpower requirement production level and capital additional plan and other important operational expects. Revenue planning is the important tool for the success of the business operation.

NEA is responsible for planning contraction, operation and generation of electricity in the nation. Though, NEA'S market is pure monopoly. It is continuously facing problem of liquidity due to improper management of revenue and overall account receivable. The problem of liquidity has always been solved by foreign aid and loans. But the increasing trend of foreign loan can have negative impact on national economy. If NEA had been able to manage revenue efficiently, foreign loan would have increased less rapidly. Thus NEA should manage its revenue more efficiently for its own sale and national interest.

The main objective of the present study is to examine revenue. Planning policies, to analyze the relationship between sales, production and losses in transmission, to examine profitability, credit collection policy.

NEA has been adopting planning practice to fulfill its mission and objectives. Revenue planning is the most essential part as revenue is the base on which future of the authority depends.

NEA has not adopted the practice of preparing monthly budget. The communication required for planning is not proper. The trend of revenue is increasing and management has to manage hugger amount of revenue in future. Thus, NEA should apply corrective measures to eradicate the flows in revenue planning.

Now a day's NEA has been facing many problem such as more amount of account receivable less utilization of capacity, power loss etc. Which is the major cause of reduce its profit. If it can be controlled, then it would contribute a great amount in NEA'S revenue.

Thus, NEA should try to reduce technical loss by improving its transmission system and non-technical loss by adopting legal, managerial, social and other measures.

The study has been organized in five main chapters consisting of introduction, review of literature, research methodology, presentation and analysis of data and summary, conclusion and recommendation.

## **5.2 Conclusion**

After analysis in detail the present practice managerial budgeting process of NEA, the following conclusion are made.

1. NEA prepared two types of managerial budgeting, which are technical and strategic plan is confined only top level management or internal purpose.
2. NEA has not considered demand determinants such as family income, price of electricity, connection charges, cost of alternatives available, cost of auto generation of electricity and reliability of NEA service while forecasting demand.
3. The annual achievement was not so satisfactory up to FY 2060/61 but in the FY 2061/62, 2062/63, 2063/64 it was satisfactory.
4. The statistical tools shows that there is perfect correlation between budgeted and sales.
5. NEA has not adopted the practice of preparing monthly budgeted, which is necessary for planning and control.
6. While preparing central budget of NEA, suggestions of branches and sub-branches are ignored.
7. Average consumption of each category differs by each year. NEA has no capacity to fulfill the demand of its customer.
8. Transmission loss is in increasing trend. Actual transmission loss is higher than budgeted transmission loss.

9. NEA'S over due amount of receivables is increasing year by year. It denotes inefficiency of NEA to collect its revenue in time.
10. NEA has not made collection plans of next year on the basis of previous year's collection.
11. Operating expenses is in decreasing trend but it has not been controlled effectively.
12. The net profit ratio of NEA does not indicate the sound position of profit. NEA has success to earn profit only in FY 2063/64 in study period loss is in decreasing trend.
13. The financial performance is not satisfactory level because all FY seems negative profit except in FY 2063/64.
14. The sales revenue variance of NEA is unfavourable condition. NEA has no any favourable variance in study period.
15. NEA fail to analysis its strengths, weakness opportunities and threat in depth though, it has been facing compentition form independent power producers and supplier, it has not yet made assessment of its present prospects and future potentiality seriously.

### **5.3 Recommendations**

Based on the above study, the following suggestion are recommended for the improvement in revenue planning process of NEA. It seems necessary to develop and implement improvement process of sales planning in the public enterprises. It is hoped that the given recommendations will prove be useful for the management of authority and other concerned offices institutions and individuals.

1. NEA planners should be properly trained about budgeting and revenue planning.



2. NEA should prepare plans and programs for agriculture sector.
3. NEA should start the practice of preparing monthly budget for sales revenue.
4. While preparing central budget of NEA, it should take into account all the suggestions made by branches and sub branches.
5. While preparing central revenue plan there should be participation of branches and sub branches. The goal objectives and strategies of the authority should be clearly communicated to lower level management.
6. To make sales planning system more efficient and progressive, the effective management is very much essential NEA should consider demand determinants. Such as family income, price of electricity, connection charges. Cost of alternative power, cost of auto generation of electricity and reliability of NEA service.
7. NEA should introduce programs and action plans for the reduction of transmission loss, both technical and non-technical. NEA can improve its efficiency in the metering device instantly either by changing old meters or utilizing only efficient meters or utilizing only efficient meter readers and by improving its transmission system. Non-technical loss can be reduced by adopting effective managerial, social legal and other measures.
8. It is an immediate for NEA to develop efficient system for collecting revenue in time. NEA should try to reduce over due amount of receivables. NEA should take clear vision about revenue collection and take effective action.
9. NEA'S credit collection policy is not so effective to reduce the collection period. So it should formulate strict rules and regulations regarding revenue collection so as to reduce the bad debt and timely collection of receivable amount. NEA should make policy due related to government offices and

should also make policy to encourage the staff to collect revenue or receivable.

10. Sales unit variance in all FY in unfavourable so responsible department should be held accountable for this unfavourable sales variance and take corrective action should be taken.
11. NEA should be free from political interference employees appointment, extension of transmission line to unprivileged sectors, revenue collection etc. should be free from political pressure.
12. NEA should increase its operating capacity so as to meet the demand of electricity. Private sectors should be encouraged to invest in small hydropower projects which will help the nation to be self dependent in electricity.
13. NEA'S sales of electricity is increasing every year in satisfied manner. In this context, NEA could have sufficient profit but unfortunately, it is suffering from huge loss due to over cost on unnecessary heads. So, it needs to work hard to maintain the unnecessary costs.
14. For the efficient control over the costs, the widely accept cost controlling tool, standard cost will be fruitful for NEA.
15. NEA is paying a huge amount of interest annually for the long term debt and loans. NEA needs to restructure its capital structure to reduce the contribution of loan financing.
16. NEA should pay more effort to manage the supply of electricity to the profitable sectors such as domestic, industrial, non-commercial sectors. Tariff rate for water supply and irrigation, transport service, street light, bulk supply to India, temples should be revised in such a way by which NEA could cover operating cost at least.

17. NEA has a problem of overstaffing. It should cut down the unnecessary staffs and the required staffs should be encouraged to increase their productivity by providing training and seminars.
18. NEA has huge investment on vehicles and other fixed asset. Vehicles should not be given to unconcerned persons and fixed asset should utilized effectively.
19. The liquidity position of NEA is under satisfactory level. Therefore, it should maintain sufficient liquidity position for future.
20. Authority should introduce budgeting techniques efficiently to increased the sales and manage the costs to minimum level with a view to increased the profit.
21. Load shedding a big issues in Nepal. It is in increasing trend. The authority should try to avoid load shedding which helps to decrease the electricity deficit and ultimately increase profit.
22. NEA needs to learn its strength, weakness, opportunities and threats.

## Appendix-1

### Budgeted Sales and Actual Sales in Unit (in million)

FY	Budgeted sales (X)	Actual sales (Y)	$U \sum X Z \bar{X}$	$V \sum Y Z \bar{Y}$	$u^2 \sum (x Z \bar{x})^2$	$v^2 \sum (y Z \bar{y})^2$	uv
2057/58	1533.516	1407.13	-358.4533	-397.8886	128488.768	158315.338	142624.4817
2058/59	1685.487	1534.32	-206.4823	-270.6986	42634.94	73277.732	55894.4695
2059/60	1804.9	1696.82	-87.0693	-108.1986	7581.063	11706.937	9420.7764
2060/61	1906.622	1795.23	14.6527	-9.7886	214.702	95.817	-143.4294
2061/62	1988.850	1964.39	96.8807	159.3714	9385.87	25399.243	15440.0128
2062/63	2066.27	2032.62	174.3007	227.6014	30380.734	51802.379	39671.0833
2063/64	2258.14	2204.62	366.707	399.6014	134080.982	159681.279	146322.3244
N = 7	$\sum X = 13243.785$	$\sum Y = 12635.13$	$\sum u = 0$	$\sum v = 0$	$\sum u^2 = 352767.059$	$\sum v^2 = 480278.743$	$\sum uv = 409229.7187$

(1) Computation of Mean for Budgeted Sales

Compute of Mean for Actual Sales

$$\bar{X} = \frac{\sum X}{N} = \frac{13243.785}{7} = 1891.9693$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{12635.13}{7} = 1805.0186$$

(2) Computation of Standard Deviation

For Budgeted Sales

$$\begin{aligned} \text{S.D. (for } x) &= \sqrt{\frac{1}{N} \sum (x Z \bar{x})^2} \\ &= \sqrt{\frac{1}{7} \times 352767.059} \\ &= \sqrt{50395.29} = 224.4889622 \end{aligned}$$

For Actual Sales

$$\begin{aligned} \text{S.D. (for } y) &= \sqrt{\frac{1}{N} \sum (y Z \bar{y})^2} \\ &= \sqrt{\frac{1}{7} \times 480278.743} \\ &= \sqrt{68611.249} = 261.9374906 \end{aligned}$$

(3) Computation of Co-efficient of Variation

For Budgeted Sales

$$\begin{aligned} \text{C.V. (x)} &= \frac{S.D.}{x} \times \frac{224.4889622}{1891.9693} \\ &= 11.87\% \end{aligned}$$

Actual Sales

$$\begin{aligned} \text{C.V. (y)} &= \frac{S.D.}{y} \times \frac{261.9374906}{1805.0186} \\ &= 14.51\% \end{aligned}$$

(4) Computer of Karl Person's Correlation of Co-efficient

$$\begin{aligned} \text{Correlation between } r_{xy} &= \frac{uv}{\sqrt{u^2 | v^2}} \\ &= \frac{409229.7187}{\sqrt{352767.059 | 480278.743}} \\ &= \frac{409229.7187}{411614.528} \\ \dots r_{xy} &= 0.9942 \end{aligned}$$

(5) Computation for Probable error:-

$$\begin{aligned} \text{P.E. (r)} &= 0.6745 \left| \frac{1 Z r^2}{\sqrt{n}} \right. \\ &= 0.6745 \left| \frac{1 Z (0.9942)^2}{\sqrt{7}} \right. \\ &= 0.6745 \left| \frac{0.011566}{2.64575} \right. \\ &= 0.00295 \end{aligned}$$

## Appendix-2

### Computation of Mean, Standard Deviation, C.V. and Correlation of Budgeted

#### Sales Revenue and Actual Sales Revenue (in million)

FY	Budgeted sales (X)	Actual sales (Y)	$U \sum XZ \bar{X}$	$V \sum XY Z \bar{Y}$	$u^2 \sum (xZ\bar{x})^2$	$v^2 \sum (yZ\bar{y})^2$	uv
2057/58	9101.282	8377.83	-3298.4976	-3457.7029	10880086.42	11955709.34	11405224.72
2058/59	10515.19	9687.65	-1884.5896	-2147.8629	3551677.96	4613315.037	4047840.084
2059/60	12238.800	11237.49	-160.9796	-598.0429	25914.43162	357655.3102	96272.7068
2060/61	12825.732	11992.61	425.9524	157.0771	181435.4471	24673.2153	66907.3677
2061/62	13275.383	13103.18	875.6034	1267.6471	766681.3141	1606929.17	1109956.111
2062/63	13721.41	13672.71	1321.6304	1837.1771	1746706.914	3375219.697	2428069.106
2063/64	15120.66	14777.26	2720.8804	2941.7271	7403190.151	8653758.33	8004087.609
N = 7	$\sum X = 86798.457$	$\sum Y = 82848.73$	$\sum uX = 0$	$\sum vY = 0$	$\sum u^2 = 24555692.64$	$\sum v^2 = 30587260.1$	$\sum uv = 27158357.7$

(1) Computation of Mean for Budgeted Sales

Compute of Mean for Actual Sales

$$\bar{X} = \frac{\sum X}{N} = \frac{86798.457}{7} = 12399.7796$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{82848.73}{7} = 11835.5329$$

(2) Computation of Standard Deviation

$$\begin{aligned} \text{S.D. (for } x) &= \sqrt{\frac{1}{N} \sum (xZ\bar{x})^2} \\ &= \sqrt{\frac{1}{7} \times 24555692.64} \\ &= \sqrt{3507956.091} = 1872.9538 \end{aligned}$$

For Actual Sales

$$\begin{aligned} \text{S.D. (for } y) &= \sqrt{\frac{1}{N} \sum (yZ\bar{y})^2} \\ &= \sqrt{\frac{1}{7} \times 30587260.1} \end{aligned}$$

$$= \sqrt{4369608.586} = 2090.3609$$

(3) Computation of Co-efficient of Variation

For Budgeted Sales

$$\text{C.V. (x)} = \frac{S.D.}{\bar{x}} \times \frac{1872.9538}{12399.7796}$$

$$= 15.1\%$$

Actual Sales

$$\text{C.V. (y)} = \frac{S.D.}{\bar{y}} \times \frac{2090.3609}{11835.5329}$$

$$= 17.66\%$$

(4) Computer of Karl Person's Correlation of Co-efficient (r)

$$\text{Correlation between } r_{xy} = \frac{uv}{\sqrt{u^2} \sqrt{v^2}}$$

$$= \frac{27158357.7}{\sqrt{24555692.64} \sqrt{30587260.1}}$$

$$= \frac{27158357.7}{27406046.01}$$

$$\dots r_{xy} = 0.991$$

(5) Computation for Probable error:-

$$\text{P.E. (r)} = 0.6745 \left| \frac{1 Z r^2}{\sqrt{n}} \right|$$

$$= 0.6745 \left| \frac{1 Z (0.991)^2}{\sqrt{7}} \right|$$

$$= 0.6745 \left| \frac{0.0121}{2.6458} \right|$$

$$= 0.0046$$

### Appendix-3

#### Fitting Straight Line Trend by Least Square (unit in GMM)

FY	No.	Actual sales (y)	x =1 N-4	$x^2$	xy
2057/58	1	1407.13	-3	9	-4221.39
2058/59	2	1534.32	-2	4	-3068.64
2059/60	3	1696.82	-1	1	-1696.82
2060/61	4	1795.23	0	0	0
2061/62	5	1964.39	1	1	1964.39
2062/63	6	2032.62	2	2	4065.24
2063/64	7	2204.62	3	3	6613.86
		y X12635.13	x X0	$x^2$ X28	xy X3656.64

It is assumed that 2060/61 a base year, so value of 'x' is zero n this year.

we have

Equation of trend line

$$Y_0 = a + bx$$

since  $x = 0$

$$a \times \frac{y}{N} = \frac{12635.13}{7} = 1805.018574 \text{ (in million)}$$

$$\text{Now, } b \times \frac{xy}{x^2} = \frac{3656.64}{28} = 130.594286 \text{ (in million)}$$



### Filling Straight Line Trend by Least Square

(in Rs.)

FY	No.	Actual sales (y) (in Rs.)	x =1 N-4	$x^2$	xy
2057/58	1	8377.83	-3	9	-25133.49
2058/59	2	9687.65	-2	4	-19375.3
2059/60	3	11237.49	-1	1	-11237.49
2060/61	4	11992.61	0	0	0
2061/62	5	13103.18	1	1	13103.18
2062/63	6	13672.71	2	4	27345.42
2063/64	7	14777.26	3	9	44331.78
		$y \times 82848.73$	$x \times 0$	$x^2 \times 28$	$xy \times 29034.1$

$$a \times \frac{y}{N} = \frac{82848.73}{7} = 11835.53286$$

$$\text{Now, } b \frac{xy}{x^2} = \frac{29034.1}{28} = 1036.932143$$



## Appendix -4

### Category-wise Analysis of Planned Sales Unit, Actual Sales Units and Achievements

(in million)

Category	2057/58			2058/59			2059/60			2060/61			2061/62		
	Actual	Budgeted	Achievement%	Actual	Budgeted	Achievement%	Actual	Budgeted	Achievement%	Actual	Budgeted	Achievement %	Actual	Budgeted	Achievement %
Domestic	518.36	569.69	90.99	557.94	600	92.99	617.11	648.6	95.14	676.37	750	90.18	758.19	778	97.45
Non commercial	73.16	80.40	90.99	78.22	81	96.57	80.74	90	89.71	83.01	90	92.23	100.54	100	100.54
Commercial	94.17	104.63	90	90.43	103.6	87.29	92.74	110	84.31	108.12	107.0	101.05	109.31	110	99.37
Industrial	520.63	584.27	89.1	596.68	605	98.62	629.51	660	95.38	689.80	725.0	95.14	764.00	765	99.87
Water supply irrigation	28.60	31.78	89.99	29.28	31.5	92.95	29.98	37	81	31.67	35	90.49	49.98	50	99.96
Street light	36.98	41.09	90	39.52	40.7	97.1	45.80	45	101.78	55.20	60	92	54.86	55	99.75
Temporary supply	0.83	0.87	95.4	0.28	0.35	80	0.35	0.5	70	0.25	0.27	92.59	0.39	0.35	111.4
Transport	5.89	6.40	92.03	5.64	6.5	86.77	5.33	7	79	5.47	6	91.17	5.80	6	96.67
Temple	2.51	2.79	89.96	2.48	2.8	88.57	2.81	2.8	100.36	4.11	4.5	91.33	4.58	4.8	95.42
Communities sales	-	-	-	5.72	5	114.4	4.74	4	118.5	5.58	6	93	6.03	6.55	92.06
Bulk supply (India)	126.0	120.0	105	133.86	170	78.74	192.25	200	96.13	14.23	150.0	94.15	110.70	120	92.25
<b>Total</b>	<b>1407.13</b>	<b>1533.516</b>	<b>91.75</b>	<b>1534.32</b>	<b>1685.49</b>	<b>91.03</b>	<b>1696.82</b>	<b>1804.9</b>	<b>94.01</b>	<b>1795.23</b>	<b>1906.622</b>	<b>94.16</b>	<b>1964.39</b>	<b>1988.850</b>	<b>98.77</b>

Category	6062/63			2063/64			Average		
	Actual	Budgeted	Achievement%	Actual	Budgeted	Achievement%	Actual	Budgeted	Achievement%
Domestic	805.72	810.19	99.45	893.27	911.51	97.99	4826.96	5067.93	95.25
Non commercial	95.29	101.03	94.32	100.52	101.15	99.38	64.48	665.58	91.87
Commercial	120.30	123.45	97.45	141.69	143.88	98.48	756.76	802.56	94.29
Industrial	785.55	803.35	97.78	849.13	877.26	96.79	4835.3	5019.88	96.32
Water supply irrigation	45.50	42.73	106.48	47.96	49.43	97.03	262.97	294.44	89.31
Street light	63.24	64.88	97.47	66.90	69.48	96.29	362.5	376.15	96.37
Temporary supply	0.87	0.73	119.18	1.26	1.28	98.44	4.23	4.63	91.36
Transport	5.65	5.98	94.48	6.31	6.56	96.19	40.29	45.44	88.67
Temple	4.77	4.91	97.15	4.78	4.77	100.21	26.04	27.37	95.14
Communities sales	9.18	8.02	114.46	15.51	14.57	106.45	46.76	44.14	105.94
Bulk supply (India)	96.55	101	95.59	76.87	78.25	98.24	877.46	953.25	92.05
Total	2032.62	2066.27	98.37	2204.20	2258.14	97.61	12640.75	13243.788	95.5





## Category-wise Analysis of Planned Sales Revenue, Actual Sales Revenue and Achievements

(in million)

Category	2057/58			2058/59			2059/60			2060/61			2061/62		
	Actual	Budgeted	Achievement %	Actual	Budgeted	Achievement %	Actual	Budgeted	Achievement %	Actual	Budgeted	Achievement %	Actual	Budgeted	Achievement %
Domestic	3161.38	3259.15	97	3641.43	3958.08	91.99	4249.81	4592	92.55	4578.99	4770.65	95.98	5079.87	5082.82	99.94
Non commercial	835.78	928.64	90	722.12	784.91	92.00	783.99	900	87.11	816.01	924.30	88.28	947.12	1058.95	89.49
Commercial	555.62	603.93	92	818.75	889.95	91.99	894.91	1089	82.18	986.07	1089.00	90.55	1015.47	999.72	101.58
Industrial	3086.10	3429	90	3608.13	3879.71	93.00	4039.65	4290	94.16	4380.22	4419.91	99.10	4851.40	4605.91	105.3
Water supply irrigation	120.9	131.41	92	138.68	145.98	95	148.53	188.3	78.88	154.80	162.53	95.24	239.97	260.68	92.06
Street light	176.05	187.29	39.99	200.74	220.59	91	246.79	236.25	104.46	329.52	355.75	92.63	315.45	342.30	92.16
Temporary supply	6.77	7.13	94.95	3.63	3.95	91.90	4.74	6.75	70.22	3.46	3.92	88.27	5.5	4.73	116.28
Transport	27.77	30.81	90	27.90	29.37	94.99	29.29	38.5	76.08	28.54	35.6	81.29	30.47	36.81	82.78
Temple	11.45	12.87	88.97	12.16	13.51	90.00	14.24	14	101.71	20.8	24.8	83.87	23.08	22.8	101.23
Communities sales	-	-	-	-	-	-	16.59	14	118.5	20.09	20.5	98	21.42	21.00	102
Bulk supply (India)	396.06	500.052	79.20	514.12	589.14	87.27	808.96	870	92.98	673.69	10.18	66.18	573.44	839.68	68.29
Total	8377.8.3	9101.282	92.05	9687.65	10515.19	92.13	11237.49	12238.8	91.82	11992.61	12825.732	93.5	13103.18	13275.383	98.7





Category	6062/63			2063/64			Average		
	Actual	Budgeted	Achievement%	Actual	Budgeted	Achievement%	Actual	Budgeted	Achievement%
Domestic	5405.12	5363.46	100.78	6021.4	6125.33	98.30	32138	33151.49	96.94
Non commercial	881.73	929.48	94.86	940.20	940.73	99.94	5926.95	6466.2	91.66
Commercial	1118.21	1138.21	98.24	1288.05	1309.29	98.38	6677.08	7119.1	93.79
Industrial	4978.69	5061.11	98.37	5300.91	5439.02	97.46	30245.1	31124.66	97.17
Water supply irrigation	197.96	196.63	100.68	214.18	224.46	95.42	1215.02	1309.99	92.75
Street light	422.35	373.06	113.21	454.85	466.19	97.57	2145.75	2051.43	104.59
Temporary supply	11.18	9.86	113.38	17.36	17.32	100.23	52.64	56.66	92.91
Transport	29.78	30.50	97.6	31.65	32.61	97.06	205.76	228.2	90.16
Temple	24.42	25.04	97.52	26.03	24.67	105.51	132.18	137.69	95.99
Communities sales	23.94	28.47	84.09	53.70	52	103.27	135.74	132.97	102.08
Bulk supply (India)	579.33	565.60	102.43	428.93	489.04	87.71	3974.53	5011.192	79.31
Total	13672.71	13721.41	99.65	14777.26	15120.66	97.73	82848.7 3	86798.457	95.45



## Appendix-5

### Contribution of Each Category in Sales Units (in million)

Category	2057/58		2058/59		2059/60		2060/61		2061/62		6062/63		2063/64		Average	
	Actual	%	Actual	%	Actual	%	Actual	%	Actual	%	Actual	%	Actual	%	Actual	%
Domestic	518.36	36.84	557.94	36.36	617.11	36.37	676.37	37.68	758.19	38.6	805.72	39.64	893.27	40.53	4826.96	38.2
Non commercial	73.16	5.20	78.22	5.1	80.74	4.76	83.01	4.62	100.54	5.12	95.29	4.69	100.52	4.56	611.48	4.84
Commercial	94.17	6.69	90.43	5.89	92.74	5.47	108.12	6.02	109.31	5.56	120.30	5.92	141.69	6.43	756.76	5.99
Industrial	520.63	37	596.68	38.89	629.51	37.1	689.80	38.42	764.00	38.89	785.55	38.65	849.13	38.52	4835.3	38.27
Water supply irrigation	28.60	2.03	29.28	1.91	29.98	1.77	31.67	1.76	49.98	2.54	45.50	2.24	47.96	2.18	262.97	2.08
Street light	36.98	2.63	39.52	2.58	45.80	2.7	55.2	3.07	54.86	2.79	63.24	3.11	66.90	3.04	362.5	2.87
Temporary supply	0.83	0.06	0.28	0.02	0.35	0.02	0.25	0.01	0.39	0.02	0.87	0.04	1.26	0.06	4.23	0.03
Transport	5.89	0.42	5.64	0.37	5.53	0.33	5.47	0.30	5.80	0.29	5.65	0.28	6.31	0.29	40.29	0.32
Temple	2.51	0.18	2.48	0.16	2.81	0.17	4.11	0.23	4.58	0.23	4.77	0.23	4.78	0.22	26.04	0.21
Communities sales	-	-	5.72	0.37	4.74	0.28	5.58	0.31	6.03	0.31	9.18	0.45	15.51	0.70	46.76	0.37
Bulk supply (India)	126.00	8.95	133.86	8.72	192.25	11.33	141.23	7.87	110.70	5.64	96.55	0.78	76.87	3.49	877.46	6.94
Total	1407.13	100.00	1534.32	100	1696.82	100.00	1795.23	100.0	1964.39	100.00	2032.62	100.00	220.420	100.00	12634.71	100.00





### Contribution of Each Category in Sales Revenue (in million)

Category	2057/58		2058/59		2059/60		2060/61		2061/62		6062/63		2063/64		Average	
	Actual	%	Actual	%	Actual	%	Actual	%	Actual	%	Actual	%	Actual	%	Actual	%
Domestic	3161.38	37.74	3641.43	37.59	4249.81	37.82	4578.99	38.18	5079.87	38.77	5405.12	39.53	6021.40	40.75	32138	38.79
Non commercial	835.78	9.98	722.12	7.45	783.99	6.98	816.01	6.8	947.12	7.23	881.73	6.45	940.2	6.36	5926.95	7.15
Commercial	555.62	6.63	818.75	8.45	894.91	7.96	986.07	8.22	1015.47	7.75	1118.21	8.18	1288.05	8.72	6677.08	8.06
Industrial	3086.10	36.84	3608.13	37.24	4039.65	35.95	4380.22	36.52	4851.40	37.02	4978.69	36.41	5300.91	35.87	30245.18	36.51
Water supply irrigation	120.90	1.44	138.68	1.43	148.53	1.32	154.80	1.29	239.97	1.83	197.96	1.45	214.18	1.45	1215.02	1.47
Street light	176.05	2.1	200.74	2.07	246.79	2.2	329.52	2.75	315.45	2.41	422.35	3.09	454.85	3.08	2145.75	2.59
Temporary supply	6.77	0.081	3.63	0.04	4.74	0.04	3.46	0.03	5.50	0.04	11.18	0.08	17.36	0.12	52.64	0.06
Transport	27.73	0.33	27.90	0.29	29.29	0.26	28.94	0.24	30.47	0.23	29.78	0.22	31.65	0.21	205.76	0.25
Temple	11.45	0.14	12.16	0.13	14.24	0.13	20.80	0.17	23.08	0.18	24.42	0.18	26.03	0.18	132.18	0.16
Communities sales	-	-	-	-	16.59	0.15	20.09	0.17	21.42	0.16	23.94	0.17	53.70	0.36	135.74	0.16
Bulk supply (India)	396.06	4.73	514.12	5.31	808.96	7.20	673.69	5.62	573.44	4.38	579.33	4.24	428.93	2.90	3974.53	4.8
<b>Total</b>	<b>8377.83</b>	<b>100</b>	<b>9687.65</b>	<b>100</b>	<b>11237.49</b>	<b>100</b>	<b>11992.61</b>	<b>100</b>	<b>13103.18</b>	<b>100</b>	<b>13672.71</b>	<b>100</b>	<b>14777.26</b>	<b>100</b>	<b>82848.73</b>	<b>100</b>







## Appendix-6

### Transmission Loss (in million)

year	Planned (in unit)					Actual (in units)				
	Production	Sales	loss	loss compared to production	loss compared to sales	Production	Sales	loss	loss compared to production	loss compared to sales
2057/58	1870.42	1533.516	336.904	18.01%	21.97%	1868.42	1407.13	461.29	24.69%	32.78%
2058/59	2003.880	1685.487	318.393	15.89%	18.89%	2066.45	1534.32	532.13	25.75%	34.68%
2059/60	2149.00	1804.9	344.1	16.01%	19.06%	2261.13	1696.82	564.31	24.96%	33.26%
2060/61	2469.718	1906.622	563.096	22.8%	29.53%	2380.89	1795.23	585.65	24.59%	32.62%
2061/62	2565.806	1988.850	576.956	22.49%	29.00%	2642.75	1964.39	678.36	25.67%	34.53%
2062/63	2777.41	2066.27	711.14	25.6%	34.42%	2780.92	2032.62	748.3	26.91%	36.81%
2063/64	3051.82	2258.14	793.68	26.00%	35.15%	3051.82	2204.62	847.2	27.76%	38.43%



## Appendix-7

### Calculation of Operating Expenses (in million)

Particular	Year						
	57/58	58/59	59/60	60/61	61/62	62/63	63/64
General Exps.(including power purchase)	4343.40	5728.70	5169.90	6565.90	7246.50	8100.61	8793.68
Transmission expenses	137.30	158.00	178.60	199.50	215.90	232.10	240.88
Distribution expenses	982.22	1174.40	1308.60	1376.10	1484.20	1703.70	1834.39
Administration exp.	850.08	447.40	536.10	489.10	622.40	419.5	479.59
Depreciation exp.	1119.30	1420.10	1656.70	1686.00	1733.50	1816.90	1856.47
Defferred Revenue expenditure	426.90	512.50	411.10	320.10	123.30	105.40	42.56
Interest on long term loan	1188.20	1395.50	2973.40	2991.50	3079.80	3050.90	2385.41
Total operating exp.	9047.4	10836.6	12233.9	13628.2	14505.6	15429.11	15632.98



## Appendix-8

### Average Consumption and Revenue (in thousand)

Category	2057/58					2058/59					2059/60				
	No. of customer	Sales unit	Sales revenue	Average consumption	Average revenue	No. of customer	Sales unit	Sales revenue	Average consumption	Average revenue	No. of customer	Sales unit	Sales revenue	Average consumption	Average revenue
Domestic	713.307	518360	3161380	0.73	4.43	48540	557940	3641430	0.66	4.29	930554	617110	4249810	0.66	6.89
Non commercial	7643	73160	835780	9.57	109.35	8629	78220	722120	9.06	83.69	9722	80740	783990	8.30	80.64
Commercial	3386	94170	555620	27.81	164.09	3898	90430	818750	23.19	210.04	5317	92740	894910	17.44	168.31
Industrial	17701	520630	3086100	29.41	174.35	18789	596680	3608130	31.76	192.03	19833	629510	4039650	31.74	203.68
Water supply irrigation	1319	28600	120900	21.68	91.66	1604	29280	138680	18.25	86.46	2026	29980	148530	14.80	73.31
Street light	1012	36980	176050	36.54	173.96	1048	39520	200740	37.71	191.55	1229	45800	246790	37.27	200.81
Temporary supply	141	830	6770	5.89	48.01	172	280	3630	1.63	21.10	138	350	4740	2.54	34.35
Transport	37	5890	27730	159.19	749.46	49	5640	27900	115.10	569.39	48	5530	29290	115.21	610.21
Temple	1441	2510	11450	1.74	7.95	1800	2480	12160	1.38	6.76	1738	2810	14240	1.62	8.19
Communities sales	-	-	-	-	-	1	5720	-	5720	-	1	4740	6590	4740	6590
Bulk supply (India)	5	126000	396060	25200	79212	5	133860	514120	26772	102824	5	192250	808960	38450	161792

2060/61					2061/62					2062/63					2063/64				
No. of customer	Sales unit	Sales revenue	Average consumption	Average revenue	No. of customer	Sales unit	Sales revenue	Average consumption	Average revenue	No. of customer	Sales unit	Sales revenue	Average consumption	Average revenue	No. of customer	Sales unit	Sales revenue	Average consumption	Average revenue
1010719	676370	4578990	0.67	4.53	1113740	758190	5079870	0.68	4.56	1227295	805720	5405120	0.66	4.40	1339253	893270	6021400	0.67	4.49
9865	83010	816010	8.41	82.72	9950	100540	947120	10.10	95.19	10010	95290	881730	9.52	88.08	10215	100520	940200	9.84	92.04
5454	108120	986070	19.82	180.80	6000	109310	1015470	18.22	169.25	6170	120300	1118210	19.50	181.23	6000	141690	1288050	23.62	214.68
21374	689800	4380220	32.27	204.93	22500	764000	4851400	33.96	215.62	23020	785550	4978690	34.12	216.28	24089	849130	5300910	35.25	220.06
2909	31670	154800	10.89	53.21	3770	49980	239970	13.26	63.65	6830	45500	197960	6.66	28.98	13597	47960	214180	3.53	15.75
1473	55200	329520	38.41	229.31	1500	54860	315450	36.57	210.3	1550	63240	422350	40.8	272.48	1608	66900	454850	41.60	282.87
150	250	3460	1.67	23.07	155	390	5500	2.52	35.48	165	870	11180	5.27	67.76	210	1260	17360	6	82.67
48	5470	28940	113.96	602.92	50	5800	30470	116	609.4	54	5650	29780	104.63	551.48	39	6310	31650	161.79	811.54
1959	4110	20800	2.09	10.62	2150	4580	23080	2.13	10.73	2290	4770	24420	2.08	10.66	2628	4780	26030	1.82	9.90
15	5580	20090	372	1339	35	6030	21420	172.29	612	58	9180	23940	158.28	412.76	169	15510	53700	91.78	317.75
5	141230	673690	28246	134738	5	110700	573440	22140	114688	5	96550	579330	19310	115866	5	76870	428930	15374	85786



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