

CASH MANAGEMENT OF NEPAL ELECTRICITY AUTHORITY

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RECOMMENDATION

This is to certify that the thesis

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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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DECLARATION

I hereby declare that the work reported in this thesis entitled “CASH MANAGEMENT OF NEPAL ELECTRICITY (NEA)”, submitted to the Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirements for the Degree of Masters in Business Studies (MBS) under the supervision of **Prof Dr. Kamal Deep Dhakal** and **Joginder Goet**, Lecturer at Shankar Dev Campus, Putalisadak, Kathmandu.

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Pukar Shrestha

ABBREVIATIONS

Co.	:	Company
DCS	:	Distribution and Consumer Services
Dept	:	Department
DNPL	:	Dabur Nepal Pvt Ltd.
FY	:	Fiscal Year
GM/GMs	:	General Manager / General Managers
Govt.	:	Government
GWh	:	Giga Watt per Hour
HEP	:	Hydro Electric Power
i.e.	:	That is
IPPs	:	Independent Power Producers
Km	:	Kilo Meter
KV	:	Kilo Volt
KW	:	Kilo Watt
Lab	:	Laboratory
Ltd.	:	Limited
MD/ MDs	:	Managing Director / Managing Directors
Mon.	:	Monitoring
MW	:	Mega Watt
NEA	:	Nepal Electricity Authority
NRs.	:	Nepalese Rupees
PAP	:	Performance Audit Periods
PEs	:	Past Earnings
PPA	:	Power Purchase Agreement
ROR	:	Return on Revenue
Tech	:	Technical
T.U.	:	Tribhuvan University
&	:	And
%	:	Percent

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CHAPTER - I

INTRODUCTION

1.1 Introduction of the Study

This study will provide an overview of Nepal Electricity Authority (NEA), a public enterprise. It will also include generalized knowledge of Nepal Electricity History and similar operational functions. The study is intended to analyse and examine the cash management system of Nepal Electricity Authority (NEA). Cash management is an important task since cash is business's lifeblood. Managed well, company remains healthy and strong. Managed poorly company goes into cardiac arrest. Again it helps to predict all the management decisions including future cash flows and various economic decisions.

Some research has concluded that the predictive ability of earnings depends upon cash management. They concluded that each accrual component reflected different information relating to future cash flows. Moreover, most research has focused narrowly on operating cash flow, earnings and accrual components of earnings. Those previous studies have ignored the potential of other cash management variables, particularly cash budget, cash flow ratios. Cash flow ratios are calculated by using data from the cash flow statement, income statement and balance sheet. A cash flow ratio is a tool for analyzing a firm's performance.

1.2 Background of the Study

Cash Management in the public enterprises of Nepal is primarily based on the traditional practices, lacking in a scientific approach. A more serious aspect of cash management has been the absence of any formalized system of planning

and cash budgeting in many of enterprises do have the practice of forecasting cash requirement. By and large most enterprises had periodic accumulation of surplus cash and corresponding cash shortage from time to time. However, none of the enterprises considered the implications of holding idle cash balance and few took in the account potential benefit of investing surplus and marketable securities. Those, which did, failed to consider the cost of administrating such investment.

However, the cash management has the following purposes in the public enterprises:

-) Controlling spending in the aggregate
-) Implementing the budget efficiently
-) Minimizing of the cost of borrowings
-) Maximizing the opportunity cost of resources, etc

1.2.1 An Overview of Nepal Electricity Authority (NEA)

During the sixth five year plan (1980-1985), the government established Nepal Electricity Authority (NEA) by introducing new corporation policy with the vision to boost up performance of public enterprises. Nepal Electricity Authority was established under the Nepal Electricity Authority Act 2041. Nepal Electricity Authority started its operations on 16th August 1985 (Bhadra 1, 2042) through the merger of the Department of Electricity of Ministry of Water Resources, Nepal Electricity Corporation and related Development Boards. Nepal Electricity Authority is responsible to generate and supply of electricity securely, efficiently, economically, and legally at reasonable price for the development of the nation.

The objectives of Nepal Electricity Authority are planning, construction, operation and maintenance of the electric power sub sector. Nepal Electricity Authority should ensure the availability of the resources necessary for the development of electricity supply by the most efficient and effective manner.

The primary objective of NEA is to generate, transmit and distribute adequate, reliable and affordable power by planning, constructing, operating and maintaining all generation, transmission and distribution facilities in Nepal's power system both interconnected and isolated.

1.2.2 Responsibility of NEA

In addition to achieving above primary objective, NEA's major responsibilities are:

-) to recommend to Government of Nepal, long and short- term plans and policies in the power sector;
-) to recommend, determine and realize tariff structure for electricity consumption with prior approval of Government of Nepal;
-) to arrange for training and study so as to produce skilled manpower in generation, transmission, distribution and other sectors.

1.2.3 Board of Directors of NEA

Management of NEA is entrusted to a Board of Directors which is constituted as follows:

-) Chief Secretary, Ministry of Energy, Govt of Nepal : Chairman
-) Secretary, Ministry of Energy, Govt of Nepal : Member
-) Secretary, Ministry of Finance, Govt of Nepal : Member

-) One prominent person from commerce, industry, or financial sector :
Member
-) One person from consumers group : Member
-) Two prominent persons with experience in power sector from outside
government : Member
-) Managing Director, NEA : Member Secretary,

The Managing Director acts as member secretary as well as chief executive officer.

Table: 1.1
Name List of Board of Directors

S.N	NAME	POSITION
1	Mr. Umakanta Jha (Minister, Ministry of Energy)	Chairman
2	Mr. Hari Ram Koirala (Secretary, Ministry of Energy)	Member
3	Mr. Shanta Raj Subedi (Secretary, Ministry of Finance)	Member
4	Mr. Laxman Prasad Agrawal	Member
5	Mr. Vivek Tater	Member
6	Mr. Santosh Narayan Shrestha	Member
7	Mr. Manoj Kumar Mishra	Member
8	Mr. Rameshwar Yadav (MD, NEA)	Member Secretary

* as per recent update May 2013

Table: 1.2

Name List of GMs and Deputy MDs

S.N	NAME	POSITION
1	Mr. Teekaram BC	Deputy MD on Deputation to WECS
2	Mr. Lava Bahadur Ghimire	Deputy MD, Finance
3	Mr. Upendra Dev Bhatta	GM, DCS West
4	Mr. Birendra Kumar Pathak	GM, Engineering Services
5	Mr. Ram Chandra Pandey	GM, Generation Construction
6	Mr. Rajendra Man Sulpya	GM, Transmission & System Operation
7	Mr. Ganesh Prasad Raj	GM, Grid Development
8	Mr. Chiranjibi Sharma Paudel	GM, DCS East
9	Mr. Badri Nath Roka	Acting DMD, Administration
10	Mr. Keshab Raj Bhatta	Act. GM, Generation Operation & Maintenance
11	Mr. Ishwari Pd. Khatiwada	Officiating DMD, Internal Audit

* as per annual report 2011/12

Table: 1.3

Name List of Directors and Department Chiefs

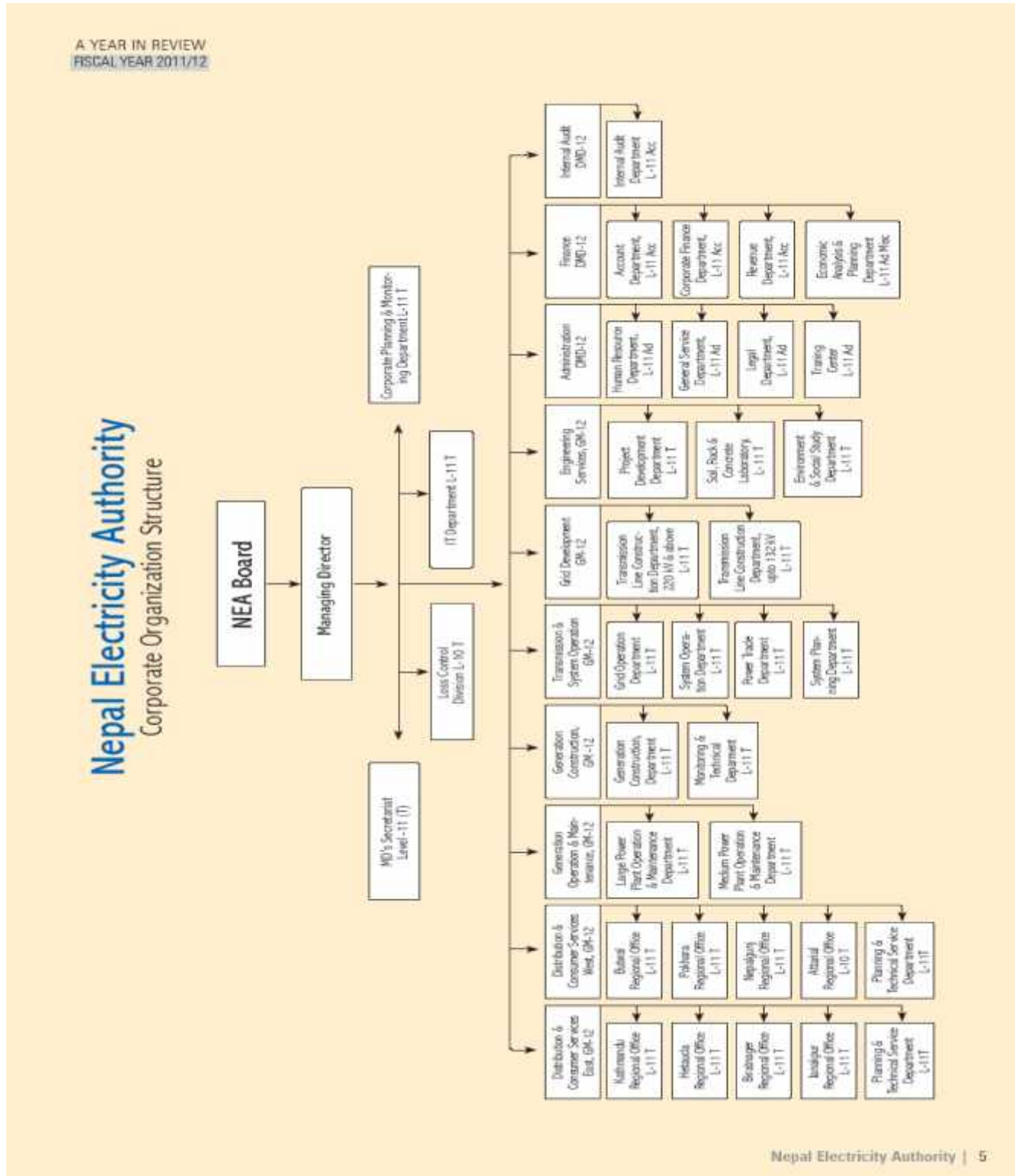
S.N	NAME	POSITION
1	Mr. Subash Dahal Chhetri	Director, Monitoring & Tech Dept.
2	Mr. Pushpa Raj Khadka	Director, Cross Border TL Project
3	Mr. Sher Singh Bhat	Director, Power Trade Dept.
4	Mr. Sunil Kumar Dhungel	Director, Project Development Dept.
5	Mr. Buddha Krishna Manandhar	Director, Soli, Rock & Concrete Lab
6	Mr. Rishikesh Sharma	Director, Trishuli 3A HEP
7	Mr. Ram E. Mandal	Director, Planning & Tech. Service Dept.
8	Mr. Kanhaiya K. Manandhar	TL Cons. Dept. 220 KV & Above
9	Mr. Surendra Rajbhandari	Director, Corporate Planning & Mon. Dept
10	Mr. Mahesh Pd. Acharya	Director, On Deputation to Tanahun Hydro Power Co.
11	Mr. Madhav Pd. Luitel	Director, Human Resource Dept.
12	Mr. Govinda Raj Kharel	Director, Training Centre

13	Mr. Arjun Kumar Chauhan	Director, Corporate Finance Dept.
14	Mr. Sudhir Pd Singh	Director, Biratnagar Regional Office
15	Mr. Deva Sharma Paudel	Director, TL Construction Dept. upto 132 KV
16	Mr. Laxman Dangol	Director, IT Dept.
17	Mr. Hari Ram Shrestha	Director, Grid Operation Dept.
18	Mr. Hemanta Kumar Joshi	Director, System Planning Dept.
19	Mr. Rajeev Sharma	Director, Rahughat HEP
20	Mr. Lailanath Bhattarai	Director, Budhi Gandaki HEP
21	Mr. Gopal Babu Bhattarai	Director, Chameliya HEP
22	Ms. Gosai Bhandari (K.C)	Director, Legal Dept.
23	Mr. Jagadishwar Man Singh	Director, Generation Construction Dept.
24	Mr. Juju Kaji Ranjit	Director, Kathmandu Regional Office
25	Mr. Mohan Ratna Shakya	Director, Environment & Social Study Dept.
26	Mr. Asta Ratna Shakya	Director, MD's Secretariat
27	Mr. Jayandra Shrestha	Director, Economic Analysis & Planning Dept.
28	Mr. Bindu Joshi	Chief, Medium Power Plant O&M Dept.
29	Mr. Prakash Chandra Shrestha	Chief, Pokhara Regional Office
30	Mr. Hitendra Dev Sharma	Chief, Large Power Plant O&M Dept.
31	Mr. Lekhnath Koirala	Act. Director, Account Dept.
32	Mr. Mhendra Raj Adhikari	Chief, Butwal Regional Office
33	Mr. Surya Nath Yadav	Chief, Nepalgunj Regional Office
34	Mr. Hararaj Neupane	Chief, Planning & Tech. Ser. Dept.
35	Ms Shanta Laxmi Shakya	Chief, General Service Dept.
36	Mr. Ram Ekbal Yadav	Chief, Janakpur Regional Office
37	Mr. Harish Bd. Pal	Chief, Internal Audit Dept.
38	Mr. Bhuwan Kumar Chhetry	Chief, System Operation Dept
39	Mr. Braj Bhushan Chaudhary	Chief, Hetauda Regional Office

* as per annual report 2011/12

1.2.4 Corporate Organization Structure of NEA

The Chart of Corporate Organization Structure of NEA is given below:



1.2.5 Present Performance of NEA

NEA presently serves 1,060,700 customers (a growth of about 9.28% over that of the previous Fiscal Year) across all the 75 districts of the country. Electricity supply is provided through ten medium-sized and forty small hydropower plants owned by NEA and ten hydropower plants owned by IPPs. Besides, four diesel and two multi-fuel thermal power plants under the ownership of NEA also cater to the demand. In terms of installed capacity of NEA's integrated grid, hydroelectric power accounts for 549.553 MW (including 147.083 MW under private ownership) and thermal power, 56.69 MW. During the time of deficit, power up to 50 MW is imported from India as per the Indo-Nepal Power Exchange Agreement. Nepal and India have agreed in principle to increase this level of exchange from the existing 50 to 150 MW. Nepal is also entitled to 70 million units of energy annually from Tanakpur in the far west under the Mahakali Treaty and 10 MW power according to Koshi contract. Although the integrated grid has a total of 549.553 MW installed hydropower capacity, only about 459.861 MW can be generated from hydropower stations during the winter season when the power demand is at its peak.

In the area of transmission and sub-transmission of electricity, the NEA system has grown into a network of more than 1565 km of 132 KV, more than 420 km of 66 KV and around 2500 km of 33 KV power lines. Distribution and customer services are provided with lines around 8000 km of 11 KV (source: GIS maps, NEUS-2000 Report). In keeping with the Nepal Government policy of extending electricity services to the district headquarters, all the headquarters of the 75 districts of the country are provided with electricity. The remaining areas are being progressively electrified. In order to accelerate the pace of expansion and conduct management of rural distribution systems in a sustainable manner, NEA has adopted a concept of community participation in rural electrification

schemes. The overwhelming response from user groups and cooperatives to NEA's invitation for proposals on operating the distribution system by the community themselves has led to 80 agreements already in place.

NEA continues to be the sole purchaser of IPP's power production. To date, twenty six (26) PPAs totalling 216.047 MW have been concluded, of which 147.083 MW have already been commissioned. Out of the 16 IPP projects for which PPAs are concluded, 14 projects are expected to be commissioned by FY 2007/08 resulting in augmentation of generation capability by 58.764 MW. Another 36 requests for PPAs amounting to 81.031 MW of power are under scrutiny.

1.2.6 Power Generation Expansion Plan

A new Generation Expansion Plan study for the planning period FY 2005/06 – 2019/20 was carried out. The results of the Study are presented in table below.

Table: 1.4
Generation Expansion Plan

FY	Projects	Installed Capacity (MW)	Comments
2005/06	Chaku Khola	1.5	IPP, PPA concluded.
2006/07	Baramchi	0.98	IPP, PPA concluded.
	Khudi	3.5	IPP, PPA concluded.
	Sisne Khola	0.75	IPP, PPA concluded.
2007/08	PHEME	0.95	IPP, PPA concluded.
	Lower Nyadi	4.5	IPP, PPA concluded.
	Lower Indrawati	4.5	IPP, PPA concluded.
	Mailung	5	IPP, PPA concluded.
	Mardi	3.1	IPP, PPA concluded.
	Thoppal Khola	1.4	IPP, PPA concluded.

FY	Projects	Installed Capacity (MW)	Comments
	Middle Marsyangdi	70	NEA, Under Construction.
2008/09	Daram Khola	5	IPP, PPA concluded.
	Upper Modi	14	IPP, PPA concluded.
	Kulekhani – III	14	NEA, Planned.
2009/10	Madi-1	10	IPP, PPA concluded.
	Hewa	10	NEA, Planned.
	Mewa	18	NEA, Planned.
	Lower Modi	19	Private.
2010/11	Kabeli-A	30	Private.
	Upper Marsyangdi -A	50	Private.
	Rahughat	27	Private.
2011/12	Tamur	83	NEA, Planned.
	Likhu-4	51	Private.
	Upper Modi A	42	NEA-Private Joint Venture.
	Chameliya	30	NEA-Private Joint Venture.
	Budhi Ganga	20	Private.
2012/13	Upper Karnali -A	75*	NEA-Private Joint Venture.
	Upper Seti (ST)	122	NEA, Planned.
2013/14	West Seti	75*	Private.
2014/15	Upper Tamakoshi	309	NEA-Private Joint Venture.
2015/16	-	-	
2016/17	-	-	
2017/18	Dudh Koshi–1 (ST)	300	
2018/19	-	-	
2019/20	Andhi Khola (ST)	180	

*** Nepal Entitlement from export oriented projects**

1.2.7 NEA's Investment Plan

NEA is undertaking every effort to bring about improvement in supply situation through timely addition of new hydropower plants to meet increasing demand of the country. In this context, NEA is creating investment friendly environment for private developers by entering into power purchase agreements. As a result, private developers are showing persistent interest in hydropower development and NEA has already concluded power purchase agreements with developers for 216 MW capacity. However, investor's interest so far has been limited to the development of Hydropower Projects with capacities not exceeding 10 MW. The pace of new capacity addition from private sector is far behind the required capacity addition to cope with the energy and power demand of the country, which is increasing by more than 8 percent annually. In the absence of private sector interest in development of medium and large -scale projects, it is obvious that there will be huge deficit in near future, unless NEA takes leading role in bringing in such projects into the system. Middle-Marsyangdi Hydropower Project is the only project with NEA that is being developed on traditional financing scheme, which has been financed by mobilizing KFW fund and internal financial resources from Nepal Government as well as from its own resources. Private sector may not be in a position in near future to mobilize the required huge investments for implementation of large and medium scale generation projects included in the generation expansion plan. At the same time large risks associated with the implementation of such projects is another great concern for them. Under such a situation, mobilizing resources for these projects is a challenging task in present context when traditional multilateral and bilateral funding is becoming rarer.

In order to make electricity service available to larger portion of population, necessary course of action has to be taken for strengthening of transmission and

distribution systems. Considering the need for reinforcement of transmission and distribution system it will be a priority of NEA to focus more to strengthen and expand the transmission and distribution system in order to encompass more power market and to provide quality service to its customers. However, given scenario of private investment in generation projects, call upon for a serious attention from NEA for investment in large and medium scale generation projects for avoiding deficit situation in power and energy balance in the country. It must be noted that the quality of service may deteriorate if the supply situation is not improved as per the increased demand. But in an environment where the availability of own resources is insufficient for the expansion of generation capacity to meet the growing demand of electricity, improvement of supply situation becomes a challenging issue. In this context, NEA is considering to develop some major hydropower projects in joint venture with private developers, as one of the alternative solutions to improve power situation. Furthermore, NEA is also looking for mobilizing local resources through the issuance of power bond in local market. In this context, NEA had already concluded a number of studies in the past, which shows ample opportunity available in Nepalese financial market, given the development of appropriate instruments for mobilization of such resources into the power sector. The study reveals that local investors may be attracted to invest in power sector because of the limited investment opportunity available in the local market and the high liquidity available in the market. Besides, NEA continues to persuade its traditional partners to provide financial support to NEA in bringing large and medium hydropower projects. As expected, donors have been positive in availing financing for some of the projects included in the generation expansion plan.

1.2.8 Sources of Financing for NEA's Investment Plan

The investment required for the projects mentioned above is expected to be met through the following sources:

(i) Foreign Loans

(ii) Nepal Government Investments and Loans

It is estimated that 80 percent of the investment shall be in foreign currency and the remaining 20 percent in local currency. The portion of investment in foreign currency shall be arranged through the foreign sources. Twenty five percent of the investment in local currency including interest during construction shall be borne by Nepal Government and the remaining 75 percent investment in local currency shall be borne through the internal sources of the NEA.

On the basis of the estimates of investments and the financial sources arrangements mentioned above, the total investment and investment allocation expected for the coming five years from fiscal year 2007/2008 through 2011/2012 is presented as follows.

1.2.9 Strategies for Improving NEA's Corporate Financial Performance

The loss figure stood at more than 27188.19 million rupees in the past fiscal year. Similarly payables to Nepal Government are also increasing significantly due to the decrease in internal cash flow. For FY 2011/12 the audited figures show outstanding payables to Nepal Government at more than 71245.74 million rupees. This will continue to rise in coming years if the present financial

performances continue in similar fashion. A huge increase in tariff will be required to meet all the financial covenants and to bring down the outstanding payables to Nepal Government at desirable level, which does not seem to be realizable in near future. There has been ever increasing trend in cost of service due to increase in power purchase price and operation and maintenance expenditures. At the same time, there is decreasing trend in realization of average revenue rate. This has resulted into continuous operational loss for the past five years. Overall, the financial statements of the past couple of years show that the financial performance of NEA is far below the satisfactory level. Hence the present financial condition of NEA urgently demands serious measures to be undertaken for turning around this deteriorating financial performance and improving financial health in future.

One of such measures is to adjust the existing tariff to recover cost of service from its users. However, despite various efforts, NEA has not been able to get approval for tariff increment since September 2010. It is also true that tariff increment alone shall not be a single solution for eradicating the existing problem.

In this context, action plan on financial management with focus on revenue increment, decrease in cost and proper working capital management as well as investment and financing decision for future project should be worked out properly. Experience shows that there is still room for increasing internal cash generation if improvement takes place in loss reduction, control of operating expenses and working capital management. Loss reduction shall contribute significantly in generating additional revenue. Similarly decrease in financing cost and IPP price is one of the major issues for decreasing cost of service of electricity. Moreover, creating market for the available power but not sold in the

system could also generate additional revenue. In order to improve its revenue stream and reduce cost and financial efficiency, action has been initiated in the following areas.

1.2.10 Institutional Reforms

NEA has undertaken various measures for institutional reforms with an objective to operate NEA in commercial principle and bringing in efficiency by reduced cost and increased revenue and profitability. The process of “Internal Unbundling” of NEA has already started by formal establishment of Generation, Transmission and Distribution & Consumer Service as its core businesses. To run its core business semi autonomously and to bring in accountability, the concept of responsibility accounting is already implemented in the core business areas of distribution, generation and transmission and system operation. By measuring performance results, comparing the results with performance targets and by rewarding the performers and punishing the non-performers, the system envisions to bring significant improvements in profitability, loss reduction and strengthen customer focus and result oriented organizational culture. This was followed by creation of Distribution Centres whose managers are under performance contracts. All together 34 Distribution Centres are already under performance contract. Performance Audit of past Performance Audit Periods (PAP) has shown positive results. Most of the Distribution Centres recorded a reduction in loss-rate, positive change in differential surplus and reduction in account receivables.

Performance contract between NEA management and general managers (GMs) of each business unit is already in place. These performance contracts will

definitely result into improvement in efficiency, cost reduction, loss reduction, increased revenue and overall improvement in financial health of NEA.

1.2.11 Improvement in Working Capital Management

Huge capital blocked in Working Capital due to high inventory reserve, high receivables and advances poses serious problems in working capital management of any utility. Though, these elements of financial statement do not directly affect the profit margin, this will have negative impact on SFR. It is also true that unnecessary amount withheld in these items could be used more effectively in productive investment helping in improvement of sales.

Inventory reserve of the NEA has increased in the past years. The inventory reserve in the fiscal year 2010/2011 was worth Rs 2502.93 million, i.e. 2.2 percent of the gross fixed assets. It has increased to Rs 2544.14 million in FY 2011/2012, i.e. 2.1 percent of the gross fixed assets. Such increase in inventory has required additional working capital investment resulting in adverse impact on cash flow. In order to ensure regular power supply and quality service to customer, required inventories need to be maintained in more than 150 generation, transmission and distribution centres. Such inventories are targeted to be brought down and to maintain the inventory level below 1 percent in the coming years. Effective inventory management and control system is must for realizing this target, which also requires establishment of norms as well as cost-effective inventory procurement and management system. With this objective in mind, computerized inventory system has already been developed and is put into most of the budget centres.

Accounts receivables are another critical area in working capital management. The general norm is that the electricity tariff receivable should be equivalent to

three months sales. This norm has also been agreed upon with the donor agencies. In the fiscal year 2007/2008 the receivable were equivalent to 6 months sales, which was brought down to the level below 3 months sales in the fiscal year 2011/2012. However, this level has again gone up to more than 3 months of sales. Therefore, serious effort is being initiated by NEA to bring down the receivables at desired level. There has been significant achievement in bringing down the receivable from Nepal government. Action has also been initiated to settle down the outstanding dues from municipalities. New billing and collection procedure, computerized revenue accounting and distribution centre concept will help in bringing down the account receivable from other customers too. Therefore, it is estimated that NEA will be able to bring down this level to around 2.5 months sales within two years. This would result in an increase in internal sources and help NEA to strengthen its financial position.

Present level of advance recoverable stands at almost 33 % of sales revenue. There has been improvement in comparison to the previous year. However, present level of advances is not at a desirable level. Therefore, necessary action is being initiated to bring down the advances at lower level.

1.2.12 Cost Control

Beside revenue, cost is major influencing factor in improving ROR (profitability) covenant. Energy purchase, depreciation, interest and royalty constitute more than 80 % of total cost. These costs are by and large beyond the control of NEA. However, if the proposal to reduce interest rate is approved by Nepal Government, it will help to a greater extent to improve financial health of NEA. There is some room for reducing administrative and staff cost by implementing effective cost control measures. In this connection, provision made in performance contracts for rewards based on differential surplus shall definitely

motivate to bring down cost to some extent. However, power purchase cost as major cost in cost structure of NEA (40 % of expenses and almost 45 % of revenue) appears as major obstacle in NEA's drive towards cost control. As the cost of sales of purchased energy exceeds the average revenue rate realized; this is having negative impact on profitability as well as on covenants. Therefore, a study is underway to suggest appropriate power purchase pricing policies in future to capitalize the benefits of private sector investment in power projects and to bring in win- win situation for all.

1.3 Statement of the Problems

The down-falling trend of public enterprises, especially the industrial enterprises or the manufacturing enterprises has been the everlasting problem of our country. Hardly a handful of these public manufacturing enterprises have proved satisfactory, rest of all being a burden to the government. In the name of economic liberalization, many of these companies are either privatized or are in the process of privatization to get rid of the burden. The annual report of financial status of public enterprises, the economic survey, conducted by Nepal Government, Ministry of finance clearly mentions about the inefficiency of public enterprises.

Cash Management; Most intricate and challenging area of modern corporate finance:

Cash management refers to the proper management of firm's cash position. It is concerned with all decisions and acts that influence the determination of the appropriate level of cash and their efficient use as well as choice of the financing method, keeping in view of liquidity that the portion of its total current assets which is put to variable operative purpose and has the characteristics of greater

divisibility, liquidity. The cash and bank balance of an enterprise is that the portion of its total current assets which is put to variable operative purpose and has the characteristics of greater divisibility, liquidity and rapidity of turnover which influence the types and terms of financing. Hence, cash management is itself a decision making area within the framework of the overall current assets management.

Cash management has been the most intricate and challenging area of modern corporate finance as much as the management always face a trade-off between the liquidity and profitability of the firm. Though most of the enterprises in Nepal have been well recognized the importance of proper cash management, they are still facing the problem of cash management.

Inefficient Practice of Cash Management in Nepalese Public Enterprises:

Cash Management in the public enterprises of Nepal is primarily based on the traditional practices, lacking in a scientific approach. A more serious aspect of cash management has been the absence of any formalized system of planning and cash budgeting in many of enterprises do have the practice of forecasting cash requirement. By and large most enterprises had periodic accumulation of surplus cash and corresponding cash shortage from time to time. However, none of the enterprises considered the implications of holding idle cash balance and few took in the account potential benefit of investing surplus and marketable securities. Those, which did, failed to consider the cost of administrating such investment.

Nepalese public enterprises never thought of the source of current assets i.e. cash and usually depend on government for it. Some of PEs has used depreciation,

fund and utilized surplus to overcome the scarcity of cash. Thus, the existing problems in the area of finance are mostly directed towards the management of cash rather than in any other area.

Nevertheless, one of the major influencing factors, the political factor can no doubt be considered a hindrance for such shortcomings in cash management. Likewise, in spite of having technical capability, the underlying corrupt attitudes of the individuals of the public enterprises are no doubt another reason for not implementing the desired methodology of cash management. However, this study ignores the above mentioned influencing factors and assumes that political system has no effect upon any kinds of decision in the firm and the individuals employed in the firm are honest in fulfilling their duties.

In order to remedy the current problem of cash management in public enterprises studies and researchers are to be conducted to find out the reality. So, this study would be one of those efforts and thus it will examine the cash management practices being employed in Nepal Electricity Authority, one of the leading public enterprises in Nepal.

Like other companies, Nepal Electricity Authority has also some weakness in maintaining cash flow. Cash flow guides in handling the cash. The study mainly aims to analyze and to solve the following research problems:

-) Are there any shortcoming with planning practice and its implementation?
-) What kinds of tools and technique are adopted for cash management?

-) What are the problems faced by Nepal Electricity Authority in cash management techniques?
-) What are the causes for the transmission loss?
-) How can cash management techniques be useful to predict future cash flow of Nepal Electricity Authority?

1.4 Objectives of the Study

The present study has been conducted to examine cash management of public manufacturing enterprises of Nepal, on the basis of the case study of Nepal Electricity Authority. It will focus on the investment decision of the company and in particular the cash positions in short run business operation of the firms, i.e. management of the individual current assets like; cash and bank balance, receivable and inventory in the short-run.

The specific objectives of the study are as follows:

-) To analyze the cash efficiency of Nepal Electricity Authority.
-) To analyze the trend of cash flow and to predict the future cash flow of Nepal Electricity Authority.
-) To analyze the liquidity position of Nepal Electricity Authority.
-) To provide appropriate suggestions.

1.5 Significance of the Study

Cash is considered as business's lifeblood. Managed well, your company remains healthy and strong. Managed poorly, your company goes into cardiac arrest. If

the company has not considered cash management an important issue, then the company probably undermining its short- term stability and its long- term survival. Poor system of cash management adversely affects planning of the organization. Thus, periodical analysis and review of cash management technique is necessary in order to ensure smooth functioning of the organization. Cash management is the key to productive financial planning. The present study is intended to analyze and evaluate the cash management system and its application in Nepal Electricity Authority. The study will be useful to provide information and to draw attention of Nepal Electricity Authority regarding what can be done for the future prediction of cash inflow and outflow.

1.6 Research Question

Several research questions established from the research problem are defined below:

Research Question 1. Is cash management a power tool to analyze and evaluate the efficiency and effectiveness of an organization in handling and managing the cash.

Research Question 2. Are past earnings and cash flow ratios significant predictors of future cash flows of Nepal Electricity Authority?

Research Question 3. Are there different predictive powers between prediction models; earnings and cash flows?

1.7 Research Hypothesis

The following research hypotheses have been formulated in relation to the research questions:

Research Hypothesis 1: Past earnings have significant predictive power in predicting future cash flows of Nepal Electricity Authority.

Research Hypothesis 2: Past cash flow ratios are significant predictors of future cash flows of Nepal Electricity Authority.

1.8 Limitation of the Study

There are three possible limitations of this research, which call for clarification in the following specific areas. These limitations may affect the generalisability and validity of this research.

-) Firstly, due to its focus on actual cash flow data from the statement of cash flows, this research studies Public institution of Nepalese market. The data employed in this research is only available for the fiscal years 2003/2004 to 2011/2012 (060/061 to 067/068). Therefore, this research may experience problems due to the inadequacy of the data.
-) Secondly, this research focuses solely on Nepal Electricity Authority. Therefore, the results of this research may not be generalized to all public companies.
-) Finally, regression analysis is used to construct a prediction model because it has been used in much of the prior research. However, time series analysis is another approach that can be used in prediction research.

1.9 Organization of the Study

The study has been organized into five chapters, each devoted to some aspect of the study on “cash management” of Nepal Electricity Authority. The titles of these chapters are as follows:

Chapter 1: Introduction

Background information on the subject matter of research undertaking will be presented under this section to provide a general idea of its history. So, this section includes a brief introduction to Nepal Electricity Authority, role and objectives of Nepal Electricity Authority in Nepalese economy. Statement of the problem, objectives of the study comes next followed by scope and limitation of the study.

Chapter 2: Conceptual Framework & Review of Literature

This chapter includes the reviews of relevant previous writing and studies to find the existing gap. Review of textbooks, dissertations/ theses has been included.

Chapter 3: Research Methodology

In this chapter, the method employed to gather data and the tools used in its interpretation has been described under the headings; research design the population and sample, nature and sources of data and financial and statistical tools for analysis of data.

Chapter 4: Data Presentational and Analysis

This chapter is the one of the most important and core of the thesis. Since, it consists of systematic presentation and analysis of financial statements employing financial & statistical tools and highlights major findings of the study.

Chapter 5: Summary, Conclusions and Recommendations

This chapter is also important part of the study where major findings has been summarized, viable recommendations suggested and conclusions drawn.

Bibliography

It consists of list of published and unpublished books, articles, theses/dissertations etc, which have been the sources information and used as references.

Appendix

It consists of relevant materials, which are, however, not much worth mentioning in the main body of the report. It includes profit/loss a/c, balance sheets, and questionnaires.

Resume is the last page of the thesis, which presents a brief biographical introduction of this researcher.

CHAPTER - II

CONCEPTUAL FRAMEWORK & REVIEW OF LITERATURE

Review of literature is an essential part of all studies. It is a way to discover what other research. It is also a way to avoid investing problems that have already been definitely answered. It refers to the reviewing of the past studies in the concerned field such studies could be thesis that are written earlier, books, articles, and or any sort of other publications concerning the subject matter, which were written prior by a person or an organization. The purpose of literature review is, thus, to find out what research studies have been conducted in one's chosen field of study, and what remains to be done.

2.1 Conceptual Framework

2.1.1 Meaning of Cash Management

Cash is the most important current assets for the operation of the business firm. It is an idle and non-earning asset. Cash is the money, which the firm can disburse immediately without any restriction. The term cash includes coins currency and cheques held by the firm and balance in its bank accounts. Sometimes near cash items, such as marketable securities is also included in cash. Managing cash flows is an extremely important task for financial managers, because the primary goal of a financial manager is to maximize firm's value and is based on cash flows. The financial manager's task is to determining how much cash a firm should have on hand at any time to ensure normal business operations continue without interruption. If a firm holds more cash than it needs, share holder's returns will not be maximized. Therefore, for its smooth running and maximum profitability, proper and effective cash management in business is of paramount

importance. So, the management of current assets and current liabilities of the business which is necessary for day to day operation. It is concerned with the decision regarding the short-term funds influencing overall profitability and risk involving in the firm. Thus, management of cash has been regarded as one of the conditioning factors in the decision-making.

2.1.2 Functions of Cash Management

There are various functions of Cash Management, they are as follows:

-) To cash plan: Cash flow (inflows and outflows) should be planned to project cash surplus or deficits for the period. Cash budget is prepared for this purpose
-) To maintain cash and marketable securities in amounts close to optimal level: The firm should try to maintain the appropriate level of cash balance. The cost of excess cash and the danger of cash deficiency should be matched to maintain the optimal level of cash balances.
-) To design and managing cash flows: The cash flows (inflows and outflows) should be properly managed. The inflows of cash should be decelerated as possible.
-) To place the cash and marketable securities in the proper institutions and in the proper forms: The idle cash or precautionary cash balances should be properly invested in other to earn profits. The firm should take the appropriate decision about the division of such cash balances between bank deposits and marketable securities.

2.1.3 Objectives of Cash Management

The basic objectives of cash management are two-fold, (a) meeting payment schedule and (b) minimizing funds committed to cash balances. These are conflicting and mutually contradictory and the task of cash management is to reconcile them. (Khan & Jain, 2006:15)

a. Meeting Payment Schedule

In the normal course of business, firms have to make payment of cash on a continuous and regular basis to suppliers of goods, employees and so on. At the same time, there is a constant inflow of cash through collections from debtors. To meet the payment schedules, a firm should maintain an adequate amount of cash balance. The advantages of maintaining adequate cash balances are, (i) the relationship with the bank is not strained; (ii) it prevents insolvency or bankruptcy arising out of the inability of a firm to meet its obligations; (iii) it helps in fostering good relations with trade creditors and suppliers of raw-material, as prompt payment may help their own cash management, (iv) a cash discount can be availed of if payment is made within the due date; (v) it leads to a strong credit rating which enables the firm to purchase goods on favorable terms and to maintain its line of credit with banks and other sources of credit. (vi) to take advantage of favorable business opportunities that may be available periodically; and (vii) finally, the firm can meet unanticipated cash expenditure with minimum of strain during emergencies, such as; strikes, fires, or a new marketing campaign by competitors.

b. Minimizing Funds Committed to Cash Balances

The second objective of cash management is to minimize cash balances. In minimizing the cash balances, two conflicting aspects have to be reconciled. A

high level of cash balances will, as shown above, ensure prompt payment together with all the advantages. But it also implies that large funds will remain idle, as cash is a non-earning asset and the firm will have to forego profits. A low level of cash balances, on the other hand, may mean failure to meet the payment schedule. The aim of cash management, therefore, should be to have an optimal amount of cash balances.

2.1.4 Efficiency of Cash Management

Cash Management use a number of functions as it makes payment possible. It serves to meet emergencies. But if cash is kept idle it contributes directly nothing to the earning of the corporation. As such corporation must adopt such a policy that optimum cash management possible. The financial manager of the corporation should try to minimizing the corporations holding of cash wide still maintaining enough to ensure payment of obligation. For improving the efficiency of cash management, effective method of collection and disbursement should be adopted. Some methods for efficiency of cash management are briefly described below.

a. Speedy Cash Collections

A firm can conserve cash and reduce its requirement for cash balance if it can speed-up its cash collection. Reducing the lag for gap between the times a customer pays his bill can accelerate cash collection and the time the cheque is collected and funds become available for use. Within this time gap, the delay is caused by the mailing time. The amounts of cheques sent by customers but not yet collected are called deposit float. The greater the deposit floats, the longer the time taken in converting cheques into usable funds.

b. Concentration Banking

Concentration banking is a system of operating through number of collection centers, instead of a single collection center centralized at the firm head office. To this system, the firm will have a large number of bank accounts operated in the area from its branches. All branches may not have the collection centers. The collection centers will be required to collect cheques from customers and deposit them in their local bank accounts. The collection center will transfer funds above some pre-determined minimum to a control generally at the firm's head office, each day. A connection bank is one where the firm has a major bank account usually the disbursement.

c. Slowing Disbursement

Apart from speedy collection of account receivable the operation cash requirement can be reduced by slow disbursement of account payable. It may be recalled that a basic Strategy of cash management is to delay payment as long as possible without imparting the credit rating of the firm. In fact, slow disbursement represents a source of funds requiring no interest payments. There are some technique to delay payment; avoidance of early payment, centralized disbursement, floats and accruable.

d. Using Float

Float is the difference between the balance shown in a firm (or individuals) checkbook and the balance on the bank's records. Firms not float is function of its ability to speed-up and to slow down collections and checks written (disbursement float)

e. Transferring Funds

A transferring fund is a system for moving funds among accounts at different banks. There are two principal methods- wire transfer and cheques. With an electronic depository transfer, funds are immediately transferred from one bank to another. With an electronic depository transfer cheque (EDTC) arrangement in the movement of funds, an electronic cheque image is processed through an automatic clearing house. The funds become available on business day later. For small transfers, a wire transfer may be too costly.

f. Overdraft System

A system whereby depositors may write cheques in excess of their balances with their banks automatically extend loans to cover the shortage. Most of the foreign countries use overdraft system.

2.1.5 Different Techniques of Cash Management

(i) Cash Budget

The cash budget shows the firm's projected cash inflows and outflows over some specified period. It is the most significant device to plan for and control cash receipt and payment. It provides much more detailed information concerning a firm's future cash flows. It is the most important tool for managing cash. It is useful in determining when cash surpluses or shortages will occur. Plans can then, be made to borrow to cover shortages or to invest surpluses.

(ii) Cash Planning

Cash planning can help anticipate future cash flows and needs of the firm and reduces the possibility of idle cash. Cash planning is a technique to plan for and control the use of cash. The forecasts may be based on the present operation or anticipated future operation. Cash plans are very crucial in developing the overall operation plans of the firm. Cash planning may be done on daily, weekly or monthly basis. It depends upon the size of the firm and philosophy of management.

(iii) Long-term Cash Forecasting

Long-term cash forecasting are prepared to give an idea of the company's financial requirement of distant future. Once a company has developed long term cash forecast, it can be used to evaluate the impact of say new product development on the firm financial condition three, five or more years in future. The major uses of the long-term cash forecast are company's future financial needs, especially for its working capital requirements, to evaluate proposed capital projects and it help to improve corporate planning. Long term cash forecasting not only reflects more accurately the impact of any recent acquisitions but also foreshadows financing problems, these new additional may past for the company.

(iv) Short-term Cash Forecasting

There are most two common used methods of short-term cash forecasting are as follows: (Pandey, 1999:843)

a. Receipt and Disbursement Forecasting

The prime aim of receipt and disbursement forecasts is to summarize these flows during a predetermined period. In case of those companies where

cash items of income and expenses involve flow of cash; this method is favored to keep a close control over cash.

b. Adjusted Net Income Method

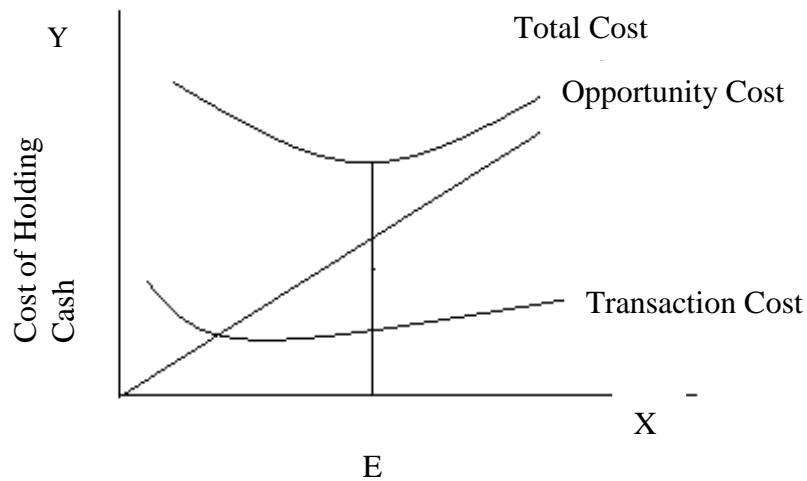
This method of cash forecasting involves the tracing of working capital flows. Sometime, it is also called the sources and uses approach. Two objectives of this method are; to project the company's need for cash at some future date and to show whether the company can generate this money internally or not, how much give will either borrow or rise in the capital market.

2.1.6 Determining the Optimum Cash Balance

Financial manager responsibilities are to maintain a sound liquidity position of the firm, so that dues may be settled in time. The firms need cash not only to purchase raw materials and pay ways but also for payment of dividend, interest, taxes and countless other purpose. The test of liquidity is really the availability of cash to meet the firm obligations when they become due. Thus, the cash balance is maintained for transaction purpose and an additional amount may be maintained as a safety stock. The financial manager should determine the appropriate amounts of cash balance, a trade-off between risk and return influences such a decision. If the firm maintains a small cash balance, its liquidity position become weak and suffers from a capacity of cash to make payment. But investing released funds in some profitable opportunities can attain a higher profitability. If the firm maintains a high level of cash balance it will have a sound liquidity position but forego the opportunity to earn interests. Thus, the firm should maintain an optimum cash balance to find out the optimum cash balance the transaction costs and risk of too small a balance should be matched

with the opportunity costs of too large a balance. The figure shows this trade-off graphically.

Figure: 2.1
Determination of Optimum Cash Balance



2.1.6.1 Optimum Cash Balance Under Certainty: Baumol's Model

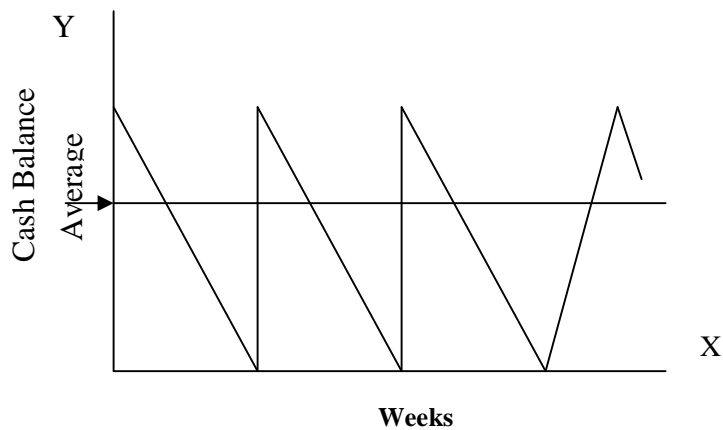
In view of minimizing the opportunity cost of holding cash and maximizing the return on the available funds, the cash balance should be maintained at a minimum level and the funds not required for immediate use be invested in the marketable securities. Baumol model is one of the methods that can be used for this purpose. Baumol model is based on the assumptions that:

-) The cash is used at a constant rate,
-) The periodic cash requirements is more or less and

) There are some costs such as opportunity costs that increase and other costs such as transaction costs that decrease as cash balance increase. (Khan & Jain, 2006:136).

Because of the assumption (1) and (2) the graphical representation of cash position looks like as follows:

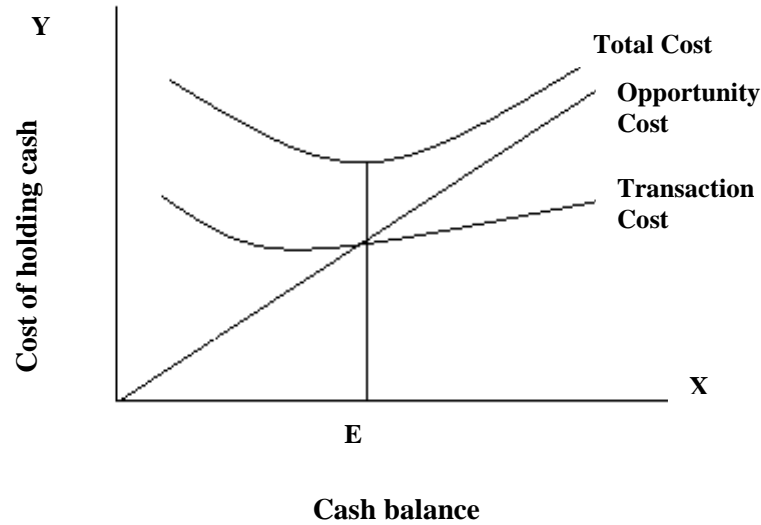
Figure: 2.2
Baumol's Model for Cash Balance



Given its assumptions, the model prescribes an optimal size of cash balance and the optimal size of account or borrowing. What matter for a firm is the total of opportunity cost and the transaction cost? Therefore, the objective of this model is to minimize the total cost.

The figure below shows the relationship between the average size of cash balance and various costs associated with the cash maintenance

Figure: 2.3
Relationship between Average Cash Balance and Cash Maintain

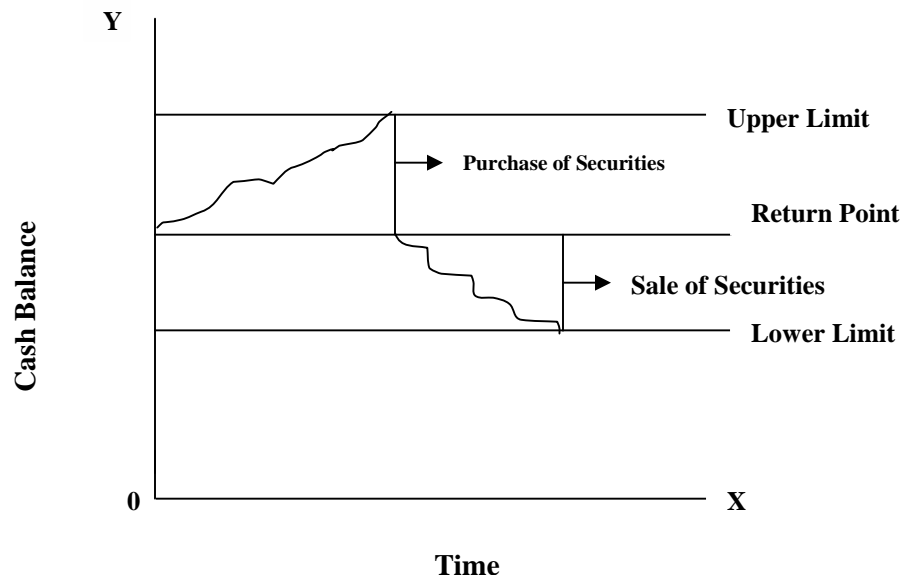


2.1.6.2 Optimum Cash Balance Under Uncertainty: The Miller-Orr Model

The limitation of the Baumol model is that it does not allow the cash flows to fluctuate. Firms in practice do not use their cash balance uniformly nor are they able to predict daily cash inflows and outflows. The Miller-Orr model cash flow variation. It assumes that net cash flows are normally distributed with a zero value of mean and a standard deviation. As shown in figure below, the Miller-Orr model provides for two control limits- the upper control limit as well as lower control limit and return point. If the firm's cash flows fluctuate randomly and hit the upper limit, then it buys sufficient marketable securities to come back to a normal level of cash balance (the return point). Similarly, when the firm's cash flows wander and hit the lower limit, it sells sufficient marketable securities to bring the cash balance back to the normal level (the return point). (Miller & Orr, 1966:413).

Figure: 2.4

The Miller-Orr's Model for Cash Balance



2.1.7 Motives for Holding Cash

The firm holds cash for various motives, they are explained as follows:

A. Transaction Motives

The principle motive for holding cash is to conduct day to day operations. A cash balance associated with routine payments and collections. Like payments of purchases, labour, taxes, and dividends etc. Likewise, in the course of daily business transactions, cash are generated from sales of goods or services, return on outside investments etc. (Khan & Jain, 2006:10).

B. Precautionary Motives

Cash held in reserve for random, unforeseen fluctuation in cash inflow and outflow. For example; flood, strike, inefficiency in collection of debtors, cancellation of order failure of important customers, sharp increase in cost of raw-materials etc.

C. Speculative Motives

A cash balance that is held to enable the firm to purchase that might arise. For example; purchasing of raw-material at a reduced price on payment of immediate cash falls in price of shares and securities, purchasing at favourable price.

D. Compensating Balance/Compensative Motives

A cash balance that a firm must maintain with a bank to compensate the bank for services rendered or for granting a loan. Firm often maintains bank balance in excess of transactions needs as a means of compensating for the various services. These balance are called compensating balance. Bank provides various services to the firm like; payment of check information of credit, loan etc.

Out of the four motives for holding cash, the most important ones are the transaction motive and the compensation motive. This is because precautionary balance can be met by short-term borrowings and business firms normally do not speculate and thus doesn't require speculative balances.

2.2 Introduction and Purpose

One of the major responsibilities of management is to plan; control and safeguard the resources of the enterprises. Two kinds of resources flow through many business, cash and non-cash assets. This chapter focuses on the cash planning and control of the cash inflows (i.e., cash received) and cash outflows (i.e. payment of cash). The planning and controlling of the cash inflows, cash outflows and the related financing is important in all enterprises. The cash budgeting is an effective way to plan and control of the cash flows and effectively use excess cash.

A primary objective is to plan the liquidity position of the company as a basis for determining future borrowings and future investments. For example excess cash is not invested incurs an opportunity cost that is loss of the interest. That could be earned and the excess cash. The timing of cash flows can be controlled in many ways by management, such as increasing the effectiveness of credit and collection activities. Making payment by time draft rather than by cheque, making payments and the last day of discount periods batching payments, and giving discount on cash sale. Cash management is important in enterprises, whether large or small. Many lending agencies require cash flows projections before granting loan.

The focus of cash planning, time horizons in cash planning and central approach used to develop a cash budget, financial accounting approach to compute cash flows, central of the cash position, technique for improving cash flows, planning and controlling cash in a non-manufacturing company.

2.2.1 Review of Books

In this section an attempt has been made to review some book on financial management, which deals with the management of cash.

-) The well known professor Weston and Brigham have given some theoretical insight into the cash management after their various studies on it. The bond conceptual findings of their studies provide sound knowledge and guidance for the future studies in the field of management. Cash management in any enterprise and naturally to this study as well. They explain in the beginning, the motives for holding cash specific advantage of adequate cash, synchronization of cash flows, expending collection and cheque clearing, using float, cost of cash management determining the minimum cash balance, compensating balances overdraft system cash management, management of account receivable credit policy, evaluating changes in credit policy.

-) From the book entitled 'financial management' written by M.Y. Khan and P.K. Jain, cash management is one of key areas of 'working capital management'. Apart from the fact that it is the most liquid current assets, cash is the common denominated to which all current assets, can be reduced because the other major liquid assets i.e., receivables and inventory get eventually converted in cash. This underlines the significance of cash management.

-) For the cash management, a well-known Indian professor I. M. Pandey has described some conceptual ingredients, which are based on his various research studies. We can learn lesson from it and helpful for

this study indeed. He has described various aspects of cash management which are as follows; fact of cash management, motives for holding cash, cash forecasting and budgeting, managing the cash flows, counting disbursement, determinant of the optimum cash balance.

We also received some theoretical concept on the component of cash management from Van Horne books. He has categorized the various component of cash management. These are the functions of cash management; managing collection, transferring funds, concentration banking, lock-box system and other procedures, control of cash disbursements, payroll and dividend disbursements, zero balance account, electronic fund transfer, balancing cash and marketable securities, model for determining optimal cash.

2.2.2 Review of Government Publications

Review of economic survey (2001/02, 2002/03, 2003/04): The annual report on financial status of public enterprises (PES) published by ministry of finance has further highlighted the darker side of these government owned enterprises compared to previous financial performance.

As regards to the financial performance PES, most of them have incurred operating losses. In FY 2002/03 aggregating Rs.1.61 billion, mainly due to operating loss of Rastriya Baniya Bank amounting to Rs. 3.25 billion. During this period, profit level of public utility enterprises has been positive, losses of service and social sector has transformed into profit. Operating losses of PES belonging to industrial and trading sectors, however, has gone up. For instance, profit level of PES like Janakpur cigarette Factory, Industrial District Management Ltd, Nepal Telecom Company, Rastriya Beema Sanstha and

Citizen's Investment Trust have been going up. Similarly, Nepal Transit and warehousing management company, Royal Nepal Airlines, Nepal Television, Nepal Industrial development Corporation are making operating profits from losses in FY 2002/03. At the same time, losses of Dairy Development Corporation, Royal Drugs Ltd and Agricultural Inputs co. have come down. Aggregate operating profit of PES in FY 2003/04 is estimated to improve further totaling Rs. 3.89 billion. The reason behind this optimism is reduction in losses of trading sector, recovery of loss-making financial sector into profit-making one, and increase in the profit of public utility sector. In FY 2001/02, net capital investment in the PES totaled Rs. 150.09 billion, which dropped to Rs. 97.23 billion in FY 2002/03. The reason for this drop in net capital investment is the decline in investment level in Public utility and financial sectors. Such investment in FY 2003/04 however, is estimated to reach Rs. 128.56 billion because of reversal of FY 2002/03 capital investment scenario. Net capital investment or profit ratio in FY 2001/02 was negative 3.65% which improved a little to minus 1.66% in the following year. The ratio is estimated to further improve into positive by 3.8% in F.Y. 2003/04. These above literature reviews indicated that almost all of the public enterprises are operating under loss. The financial performances of this PES have been seen disappointing. Cash management is no doubt an internal part of finance functions, and research undertaking on cash management function is one of the rarest undertakings as seen in T.U. Central Library.

2.2.3 Review of Previous Research Works

In this section the review of thesis relating to cash management have been considered. There were only few theses/dissertations written on cash management when browsed through computer records of thesis reports presented

earlier in Tribhuwan University Central Library. The thesis was based on the secondary data of the company for the past six years.

Extraction of Thesis Relevant for the study has been presented below:

Pradhan (1997), has conducted a research topic on “*A Study of Cash Management of Salt Trading Corporation Ltd.*”

Main Objectives:

-) To analyze the average collection period of trade credit of the sample organization.
-) To examine the liquidity position of Salt Trading Corporation Ltd.
-) To analyze the cash allocation expenditure.
-) To recommend valuable suggestion to cope up with cash management is short coming in Salt Trading Corporation Ltd.

Major Findings:

-) Salt Trading Corporation Ltd could not make the best use of available cash balance prudently.
-) The cash collection efficiency in this corporation is very low.
-) The collection of trade credit in the corporation is low during the three years of the study period.
-) Management has taken liberal credit policy to sales of goods. Hence the cash and bank balance of the study period is at minimum of account receivables.
-) No optimum cash balance is maintained.

Major Recommendations:

-) There should be efficient management of cash.
-) The enterprises should design effective account receivable management.
-) The enterprises should adopt effective credit policy.
-) The enterprises should maintain optimum cash balance.
-) The enterprises should prepare cash budget.
-) The enterprises should invest in marketable securities.

Another thesis report reviewed was presented by **Kunwar (2000)**, entitled “*A Study on Working Capital Management of Pharmaceutical Industry of Nepal with Special reference to Royal Drug Limited.*”

Main Objectives:

-) To find out the industry’s working capital process and procedures.
-) To analyze the inventory level of the industry.
-) To examine the industry’s investment in the assets.
-) To analyze the current ration of the industry.
-) To recommend the viable suggestion regarding the working capital management in the industry.

Major Findings:

-) Company is following conservative working capital policy.
-) It is found hat inventory holds the largest portion of current assets.
-) It shows that investment in current asset is high with respect to total assets.
-) The company has not been able to convert current asset quickly in cash in order to meet current liabilities.

-) Overall return position of company is negative, not in favorable condition. It is because of inefficient utilization of current assets, total assets and shareholder wealth.

Major Recommendations:

-) There must be compulsory formulation of appropriate working capital policy not only conservative. Besides, there should be policy to prevent the holding of excessive and inadequate current assets in the company.
-) It should adopt modern inventory system.
-) Adaptation of standard and marginal cost techniques will also be a good measure in controlling and classifying the cost as well as for identifying the responsibility centers for the losses.
-) There should be proper co-operation interaction between different sales agents, production, marketing and sales department during the planning of sales.
-) Positive attitude towards risk through providing training, participation in management etc for the managerial level employees.

Sainju (2003), has conducted his Master's thesis on "*Cash Management in Nepalese Public Enterprises, a case study of Royal Drugs Limited.*"

Main Objectives:

-) To examine the cash balance of the company.
-) To analyze the cash sales and collection of the company.
-) To analyze the current assets and liabilities of the company.
-) To analyze the average account receivable period of the company.

-) To provide the appropriate recommendations regarding the cash management tools, techniques, process and procedures to the company.

Major Findings:

-) Company doesn't have any definite policy regarding how much of cash balance to hold each fiscal year.
-) Company has not been forecasting cash balance taking into consideration the sales volume.
-) Company fails to maintain an adequate proportion of cash in its current assets.
-) Cross analyses revealed that company fails to collect receivables from its sundry debtors timely.
-) Company has not been precisely meeting its current liabilities payment.

Major Recommendations:

-) Company should maintain optimum cash balance every year.
-) Company should prepare cash budget on the basis of cash flow analysis.
-) Company should prepare cash flow statements.
-) Company should determine minimum level of cash balance to hold every year, maintain such minimum level of cash balance as a requirement of precautionary, speculative and compensation motive, besides for daily transactions.
-) Company should use extensively financial and statistical tools as per required.

Pradhan (2010), has conducted a research topic on *"A study on cash management of Nepal Electricity Authority and Dabur Nepal Pvt Ltd."*

Main Objectives:

-) To identify the sources and utilization of cash.
-) To examine the existing internal control policy of cash transactions.
-) To identify the storage or excess of cash in the company and procedure of financing for the storage of investment of excess cash.
-) To critically analyze the cash management techniques practiced by the companies.
-) To analyze the cash flow structure.
-) To present overall cash management picture of the selected concerns.

Major Findings:

-) Cash inflow, outflow and balance is affected by different factors of the enterprise such as fixed assets, investment, current assets, prepaid expense and advances, capital formation, reserve and surplus, long term and short term debt, current liabilities and provisions.
-) Both the enterprises made export sales only to India.
-) The average collection period of DNPL is 27 days whereas NEA's is 110 days.
-) The correlation between cash and net profit shows the insignificant for both enterprises.

-) The cash flow budget of NEA shows opening cash balance, sources of cash inflows, expenditure heads and surplus or deficit of the enterprises. Generally the cash budget is in deficit.
-) Correlation of cash other variables is found insignificant in most conditions. It predicts the NEA and DNPL are not efficient in cash management regarding the factors that affect cash level directly or indirectly.

Major Recommendations:

-) There should be proper communication and coordination among all levels at management for both the tactical and strategic plans.
-) A systematic & scientific approach should be made on implementation of cash management.
-) The enterprises should develop the periodic performance reports, detailed by assigned responsibilities to accomplish the planning objectives.
-) The relation among cash and other variables concerned with cash management must be properly recognized, studied and compared to know the real financial position of enterprises.
-) The enterprises should focus on optimum stock of inventories that may be raw materials, work in progress or finished goods.
-) Foreign currency transactions should be accounted at exchange rates prevailing on the date of the transactions.
-) The enterprises should control the administrative expenses and leakages and can reduce the cost of debt & loan (borrowings), increasing internal leverage, short term financial loans and reducing external long term loans.

One of the latest of these sorts of dissertation was presented by **Sharma (2010)**, entitled on “*A case study on cash management in Nepal Electricity Authority*”

Main Objectives:

-) To see the cash management practices adapted by NEA.
-) To examine and analyze the liquidity position of NEA.
-) To analyze the profitability position of NEA.
-) To see the relationship between total income in net profit.
-) To recommend for the improvement based on findings of the study.

Major Findings:

-) Holding of optimum cash and bank balance is the rational cash management practice of a business form. There is lower coefficient of variation of NEA which signifies that holding cash balance is highly consistence and stable.
-) NEA doesn't have sound or satisfactory liquidity position.
-) NEA has not been precisely meeting its current liabilities.
-) The proportion of cash & bank balance in its current assets is very small and the cash balance held shown positive relation to the amount of current assets.
-) A large proportion of NEA's current assets has been tied up in the most illiquid assets i.e. inventory.
-) The profitability position of NEA is worsening in an alarming rate.

Major Recommendations:

-) NEA must follow the definite policy regarding the amount of cash to hold each fiscal year.
-) The liquidity position is not satisfactory, so it should be corrected.
-) NEA should develop efficient system of revenue collection.
-) NEA should be well familiar with its strengths and weaknesses and should not be indifferent about its competitors.
-) NEA should have suitable credit policy to handle the cash management effectively.
-) NEA should try to maximize its operating profit.

Krishna P (2011), has conducted a research topic on "*A study on Financial Performance Analysis of Nepal Electricity Authority*"

Main Objectives:

-) To examine financial strength & weakness of NEA
-) To examine the performance of NEA through financial analysis
-) To find out the resolutions of the financial problems

Main Findings:

-) NEA's liquidity position is not very satisfactory.
-) NEA has lacking SWOT (Strength, Weakness, Opportunities and Threats) analysis to improve the overall performance of NEA.

-) Net operating ratio in case of NEA is found to a fixed trend of the operating expenses be in generally 9% of the operating revenue.
-) The average total debt on total assets ratio is 0.55 which is not satisfactory.
-) Debt of NEA has increased, this shows that financial position of NEA is not in good position.

Major Recommendations:

-) Liquidity position of NEA is influenced by various internal as well as external factors. So, NEA is recommended to increase its liquidity strength in order to meet the obligations due to the increase in its turnover.
-) Capital Adequacy position should be healthy in order to safeguard the NEA against the risk of confidence and risk arising from the stability of finance market.
-) The overstaffing situation of NEA and opening up of unnecessary budget centers have been instrumental to increase general administrative expenses. If the government also wants to see the public enterprises operating at surplus, it should not pressurize them for unwanted appointments. Public enterprises should be given the autonomy to handle manpower management and reduce redundant staffs in the organization.
-) NEA should make investment in the small projects and avoid big projects without prior feasibility analysis in terms of finance and cost benefits.

2.2.4 Research Gap

Cash Management is concerned with maintaining cash balance at minimum possible level in consideration with better liquidity and profitability. However,

there is still lack of complete and satisfactory research on topic of cash management. Only few researches have been on the topic of “Cash Management in or of Nepal Electricity Authority (NEA)”.

Most of them have ignored the analysis of Electricity Sales & Revenue Collection Reports, Cash Budget and Cash Flow Statement of NEA. The researchers have only used the statistical tools & financial tools and ignored the accounting tools. The purpose of this study is to provide clear picture of cash management of NEA with the analysis of accounting tools as well as statistical tools. This study is also based on the secondary as well as primary data.

Moreover, the earlier studies on the topic of cash management have focused on the balance sheet and income statement, which do not always show the whole financial condition of a company. That is why, it is important to prepare cash flow statement to ascertain true & fair figure of cash inflows and outflows. Considering all these facts, this study is expected to give a fresh report to the organization and other researchers. In this research, annual report of NEA for fiscal year 2011/12 has been used.

CHAPTER - III

RESEARCH METHODOLOGY

In the preceding chapter, we have overviewed briefly on cash management concept; review of books, theses, and government publication. The basic purpose of this chapter is to enlighten the research design, nature and sources of data, population and sample, collection procedures and methods of analysis of data in brief.

3.1 General Meaning

Research methodology is the way to solve systematically about the research problem. It refers to the various sequential steps to adopt by a researcher in studying a problem with certain objectives in views. (Kothari, 1994 : p19). Research methodology states the method with which data have been extracted and discuss the tools that have been used in interpretation of such data to fulfill the objectives. The main purpose of this chapter is to focus on different research method and condition, which are used while conducting this study. Every study needs a systematic methodology to show the better results of the research. In this study, a cash management of Nepal Electricity Authority also needs an appropriate research method. For the purpose of this study only secondary data have been used which were available from Nepal Electricity Authority.

3.2 Research Design

A research design is a plan developed to achieve the research purpose. It is a plan structure and strategy to obtain answer to research questions through investigation and analysis. It aims to ensure the research can clearly answer the research problem, and involves systematising the research activity, involving the

collection of data and analysing the data. (Wolf & Pant, 2005 : p92). A well settled research design is necessary to fulfill the objective of the study. It means definite procedures and techniques that guides to study and propounds way for research viability. This study is the case study of Nepal Electricity Authority, one of the oldest public companies of Nepal. Past financial data of five fiscal years of the company have been the basis of this study. The balance-sheets, profit and loss account statements, statements of proposed and approved budget with expenses for last five fiscal years have been compared to analyze the cash management of the company.

3.3 Data Collection Procedure

Collecting data is the connecting link to the world of reality for the researcher. The data collection activity consists of taking ordered information from reality and transferring it into some recording system so that it can later be examined and analyzed for patterns. Research as a media can be interpreted as having a content of data and process of methodology. The significance of research depends on the nature, availability and accuracy of information. Thus, data collection is the major task of the research work. There are mainly two sources of data collection, primary source of data collection and the secondary. The data collected through questionnaire and interview with the respected personnel is known as primary data and the data collected through the magazines, newspapers are known as secondary data. The source used in this study is basically based on secondary. Data are collected from the magazines, booklets issued by Nepal Electricity Authority, and it's web site which is www.nea.org.np. To focus on the statements of cash flows, cash flows from operating, investing and financing activities are selected from the cash flow statements. Earnings are derived from income statements. Total assets, sales and other variables are selected from balance sheets and income statements.

3.3.1 The Population and Sample

The existing number of public manufacturing enterprises in Nepal refers to the population and Nepal Electricity Authority, the sample. Since Nepal Electricity Authority, is the oldest public manufacturing pharmaceutical company, and it is most likely to represent all other public manufacturing enterprises, particularly the pharmaceutical company of the country. However, this is a case study, and thus the findings couldn't be extensively generalized to all other public manufacturing enterprises.

3.3.2 Nature and Sources of Data

The data collected are secondary. Financial statement such as: balance-sheet, profit and loss accounts, electricity sales and revenue collection, statements of proposed and appeared budget with expenses are the data collected for analysis. The company doesn't have computerized records of financial statements; old data dating prior to five years were placed in a separate room in filing cabinets. These and other related data were gathered directly from authorized staff at central office of Nepal Electricity Authority, Babarmahal Kathmandu. Some of these data were published while other unpublished.

3.4 Tools and Techniques for Analysis

The main important part of the study is to examine, analyse and interpret the relevant data of the respected field and it is the difficult part as well. Thus, data should be examine and analyzed very rigorously. This research will utilize quantitative methods in which the data is analyzed based on statistical tools and techniques, which include descriptive statistics i.e Pearson's correlation and regression analysis. These descriptive statistics provide an initial summary data of the essential features of the sample. The correlation analysis is used to

fundamentally examine the relationship between dependent and independent variables. Regression analysis is applied to test the prediction models depending upon the ability of predictor variables to explain cash flows. On the other hands, this research will utilize financial analysis to analyzed secondary data. For this purpose, cash flow ratios will be used. Furthermore, the study uses cash flow statement to analyse cash inflow and outflow and to interpret and evaluate a firm's ability to have sufficient cash in both short term and long term basis.

As per requirement, the following tools and techniques are used in this study:

3.4.1 Accounting Tools

As a accounting tools, the study uses Electricity Sales and Revenue Collection Forecast Report, Cash Budget, Cash Flow Statement, Income Statement and Balance Sheet.

i. Electricity Sales and Revenue Collection Report

Electricity Sales Report refers to report of the amount of kilowatt hours sold in a given period of time, usually grouped by classes of service, such as residential, commercial, industrial and other. "Other" sales includes sales for public street and highway lighting and other sales to public authorities, sales to railroads and railways, and interdepartmental sales. Electricity Sales Report shows the total energy sales in the internal and external market. It estimates the total consumption of energy and growth of the consumer. It helps to find out the future needs of energy and suggest for the capital investments.

Similarly, Revenue Collection Report refers to report of the total amount of money received by an entity from sales of its products and/or services; gains from the sales or exchanges of assets, interest, and dividends earned on investments; and other increases in the owner's equity, except those arising from capital adjustments. Revenue Collection Report shows the net revenue collected from sales of electricity and other income from other services. It estimates the total revenue collected from energy sales and helps to find out the cash inflows from the energy sales.

Table: 3.1
Format of Electricity Sales Report

Electricity Sales of NEA From 2007/8 To 2011/12
NRs. In Million

Particulars	2007/08	2008/09	2009/10	2010/11	2011/12*
Domestic					
Non-Commercial					
Commercial					
Industrial					
Water Supply & Irrigation					
Street Light					
Temporary Supply					
Transport					
Temple					
Community Sales					
Total (Internal Sales)					
Bulk Supply (India)					
Grand Total					

Table: 3.2

Format of Electricity Revenue Collection Report

Revenue Collection of NEA From 2008 To 2012

NRs. In Million

Particulars	2007/08	2008/09	2009/10	2010/11	2011/12*
Domestic					
Non-Commercial					
Commercial					
Industrial					
Water Supply & Irrigation					
Street Light					
Temporary Supply					
Transport					
Temple					
Community Sales					
Total (Internal Sales)					
Bulk Supply (India)					
Gross Revenue					
Net Income from Other Services					
Total Revenue					

ii. Cash Budget

Cash budgeting is an effective way to plan and control the cash flows, assess cash needs, and effectively use excess cash. The primary objective of cash flow is to plan the liquidity position of the company as a basis for determining future borrowings and future investment. A cash budget shows the planned cash inflows, outflows, and ending position by interim period for the specific time span. It is directly related to other plans such as the sales plan, account receivable and the expenses budget and capital expenses budget. The cash budget focuses exclusively on the amount and timing of cash inflows and outflows. The primary purpose of cash budget are to give the probable cash position at the end

of each period as a result of planned operations, to identify cash excesses or shortages by time period, to establish the need for financing and or the availability of idle cash for investment, to coordinate cash with total working capital, sale revenue, expenses, investment, and liabilities and to establish a sound basis for continuous monitoring of the cash position.

Table: 3.3
Format of Cash Budget

Cash Budget of NEA From 2008 To 2012

NRs. In Million

Particulars	Years				
	2007/08	2008/09	2009/10	2010/11	2011/12
Opening Cash Balance					
Add: Receipts					
Cash Sales					
Advance Cash					
Dividend, Interest & Other Gain					
Issue of Debentures for Electricity*					
Total Receipts					
Less: Payments					
Purchase of Property, Plant & Equipment					
Purchase of Investment					
Administrative Expenses					
Distribution Expenses					
Cost of Sales					
Total Payments					
Surplus / Deficit					
Add: Loan Received					
Less: Loan Repayment*					
Less: Interest Paid					
Closing Cash Balance					

iii. Cash Flow Statement

The analysis of events and transaction that affects the cash position of company is termed as cash flow analysis. Cash flow analysis is done through statement of cash flows. The cash flow statement is a statement of company's ability to generate cash from various activities such as operating, investing, financing, and there need of cash. It is a statement which shows the inflows and outflows of cash and cash equivalents during the year.

Cash comprises cash on hand and demand deposits. Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value. (Khan & Jain, 1993 : p254). Cash flow analysis provides useful information to evaluate a firm's ability to have sufficient cash in both short term and long term basis. It is the analysis of events and transactions that affects the cash position of company. Cash flow analysis is done through statement of cash flows. Cash flow analysis helps to evaluate financial policies and cash positions. It assesses a company's ability to generate positive future cash flows. It helps in evaluating firm's ability to meet its obligation, its ability to pay dividends and its need for external financing. Through past trends of cash flows, one can analyze, evaluate and predict future cash flow which is the ultimate goal of the study.

Table: 3.4
Format of Cash Flow Statement under Indirect Method

Cash Flow Statement of NEA from 2008 To 2012

NRs. In Million

Particulars	Years				
	2007/08	2008/09	2009/10	2010/11	2011/12
A. Cash Flow From Operating Activities (CFOA)					
Provision for Dividend					
Interim Dividend					
(a) Internal					
(b) Sale to India					
Profit Transfer to Balance Sheet					
Net Profit / Loss for the year					
Add : Non Cash and Non Operating Expenses:					
Depreciation for the year					
Loss on Foreign Exchange					
Provision for Losses on Property, Plant and Equipment*					
Differed Revenue Expenditure Written Off					
Less : Non Operating Gain:					
Gain on Foreign Exchange					
Funds Flow From Operation (FFO)					
Add : Decrease in Working Capital Except Cash (item wise)					
Inventory					
Debtors					
Prepaid / Advance Cash					
Creditors					
Less : Increase in Working Capital Except Cash (item wise)					
Inventory					
Debtors					
Prepaid / Advance Cash					

Creditors					
Cash Flow From Operating Activities (CFOA)					
B. Cash Flow From Investing Activities (CFIA)					
Sale / Purchase of Property, Plant & Equipment					
Sale / Purchase of Investment					
Sale / Purchase of Capital Work In Progress					
Cash Flow From Investing Activities (CFIA)					
C. Cash Flow From Financing Activities (CFFA)					
Add: Issue of Shares / Debentures for Electricity					
Add: Secured Long Term Loans Borrowed					
Less: Repayment of Borrowing					
Less: Interest Payment					
Cash Flow From Financing Activities (CFFA)					
Net Cash Increase / Decrease (A + B + C)					
Add: Opening Cash / Bank Balance					
Closing Cash / Bank Balance					

iv. Income Statement

A summary of a management's performance as reflected in the profitability (or lack of it) of an organization over a certain period. It itemizes the revenue and expenses of past that led to the current profit or loss, and indicates what may be done to improve the results. In contrast to a balance sheet, an income statement depicts what happened over a month, quarter, or year. It is based on a fundamental accounting equation ($\text{Income} = \text{Revenue} - \text{Expenses}$) and shows the rate at which the owners equity is changing for better or worse. Along with balance sheet and cash flow statement it forms the basic set of financial information required to manage an organization. Also called earnings report, operating statement, or profit and loss account.

Table: 3.5
Format of Income Statement

Income Statement of NEA from 2008 To 2012
NRs. In Million

Particulars	2011/12*	2010/11	2009/10	2008/09	2007/08
Sales					
Cost of Sales :					
Generation					
Power Purchase					
Royalty					
Transmission					
Gross Profit					
Other Income					
Distribution Expenses					
Administrative Expenses					
Interest Expenses					
Depreciation					
Loss (Gain) on Foreign Exchange					
Provision for losses on property, plant & equipment					
Provision under Employees' Benefits Plan					
Street Light dues written off					
Deferred Expenditure Written Off					
Net Profit (Loss) before Tax					
Provision for Income Tax					
Deferred Tax Expense (Income) recognised					
Net Profit (Loss) after Tax					
Net Profit (Loss) as per Last Account					
Prior years Income (Loss) Expenses					
Total Profit Available for Appropriation					
Appropriation for Insurance Fund					
Accumulated Loss Adjusted					
Profit (Loss) transferred to Statement of Financial Position					

v. Balance Sheet

A quantitative summary of a company's financial condition at a specific point in time, including assets, liabilities and net worth. The first part of a balance sheet shows all the productive assets a company owns, and the second part shows all the financing methods (such as liabilities and shareholders' equity) also called statement of condition.

Table: 3.6
Format of Balance Sheet

Balance Sheet of NEA from 2008 To 2012
NRs. In Million

Particulars	2011/12*	2010/11	2009/10	2008/09	2007/08
ASSETS					
Non Current Assets					
Property, Plant & Equipment					
Capital Work in Progress					
Investments					
Deferred Expenditure to be Written Off					
Total Non-Current Assets					
Current Assets :-					
Inventories					
Trade and other Receivables					
Cash and Cash Equivalentents					
Prepaid, Advances, Loans and Deposits					
Total Current Assets					
Total Assets					
EQUITY AND LIABILITIES					
Capital and Reserves					
Share Capital					
Reserves and Accumulated Profits					
Reserves					
Accumulated Profits (Loss)					

Total Equity					
Non-Current Liabilities					
Borrowings					
Deferred Tax					
Total Non-Current Liabilities					
Current Liabilities:-					
Borrowings					
Sundry Creditors and Other Payables					
Provisions					
Total Current Liabilities					
Total Liabilities					
Total Equity and Liabilities					
Contingent Liabilities					

3.4.2 Financial Tools

As a financial tools, various ratios have been used for the analysis of the data. Financial ratio analysis is designed to determine the relative strengths and weakness of business operations. It also provides a framework for financial planning and control. Financial Managers need the information provided by analysis both to evaluate the firm's past performance and to map future plans. Financial analysis concentrates on financial statement analysis, which highlights the key aspects of firm's operation. Financial statement analysis involves a study of the relationship between income statement and balance-sheet accounts, how these relationship changes over time and how a particular firm compares with other firms in its industry. Although financial analysis has limitation, when used with care and judgment, it can provide some very useful insights into the operation of a company. The ratios used in this study are:

i. Cash Turnover Ratio

Cash Turnover Ratio explains how quickly the cash is received from the sales. In other words, it measures the speed with which cash move through an enterprise's operation.

Cash Turnover Ratio is obtained by the following formula:

$$\text{Cash Turnover Ratio} = \frac{\text{Sales}}{\text{Cash in Hand \& Bank}}$$

ii. Current Ratio

Current Ratio examines the liquidity position of the company. It examines the position of the company as to its holding of current assets against its current liabilities. Higher ratio indicates satisfactory position and vice-versa. However, too high ratio is indication of poor cash management indicating poor credit management.

The standard current ratio is 2:1; however for a public enterprise, the ratio tends to be little lower than 2:1, as these enterprises generally require very little current assets. But nevertheless any company should maintain this ratio above 1:1, since ratio lower than this definitely indicates poor liquidity position.

Current Ratio is obtained by following formula:

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

iii. Account Receivable Turnover Ratio

Account Receivables Turnover Ratio gives an idea as to how quickly receivables are converted into sales.

Account Receivable Turnover Ratio is obtained by following formula:

$$\text{Account Receivable Turnover in time} = \frac{\text{Total Sales}}{\text{Account Receivables}}$$

With computation of this ratio, average collection period of receivables is also calculated. Shorter average collection period refers to good credit management and vice-versa. But too short collection period suggests that the company has a very rigid credit policy and thus sales curtail would be the consequence as the sales transaction is only targeted to parties making payments promptly.

$$\text{Average Collection Period (ACP)} = \frac{\text{Days in a year}}{\text{Acc Receivable Turnover in time.}}$$

iv. Inventory Turnover Ratio

Inventory turnover ratio gives idea on how quickly the least liquid current asset i.e. inventory is converted into sales. It is often necessary to use the average inventory figure rather than the year end figure especially if a firm's business is highly seasonal or if there has been a strong upward or downward sales trend during the year. It measures the efficiency of inventory utilization. Increasing ratio is favorable which shows that firm is very efficient on inventory management. This ratio is obtained by following formula:

$$\text{Inventory Turnover Ratio} = \frac{\text{Sales}}{\text{Inventory}}$$

3.4.3 Statistical Tools

The statistical tools used for the quantitative analysis of secondary data. As a statistical tools, the study has used following tools. (Bajracharya, 2004 : p254).

i. Karl Pearson's Coefficient of Correlation (r)

Correlation analysis refers to the statistical technique, which measures the degree of relationship or association between the variables. To put it differently, it helps in analysing the covariation of two or more variables.

It is to be noted that a high degree of correlation between two variables doesn't always necessarily imply that changes in one variation cause changes in the other .

Out of several methods of calculating correlation,Karl Pearson's coefficient of correlation is one of the best and popular method. Karl Pearson's coefficient of correlation (r) measures the degree of association between the two variables suppose X and y; given by :

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

Interpretation of correlation coefficient (r)

- a. The value of 'r' lies between +1.00 to -1.00
- b. When r =+1, there is positively perfect correlation between the two variables.

- c. When $r = -1$, there is a negatively perfect correlation between the two variables.
- d. When $r = 0$, the variables are uncorrelated i.e, increase or decrease in one variable results no impact on another variable and vice-versa.

Together with Karl Pearson's coefficient of correlation probable error (P.E.) of the correlation coefficient is also computed. P. E is the measure of testing the

reliability of the calculated value of 'r'. It is given by: $P. E. = 0.6745 \frac{1 - r^2}{\sqrt{n}}$

Where;

P. E. = Probable error of correlation coefficient

N= Number of pair of observations

r= correlation coefficient.

It is used in interpretation whether calculated value of 'r' is significant or not.

1. If $r < P. E.$, it is insignificant. So, perhaps there is no evidence of correlation.
2. If $r > 6P. E.$, it is significant .
3. But when $P. E < r < 6 (P.E)$, the value of 'r' is inconclusive as to statistically significant/ insignificant correlation.

The upper and lower limits within which the correlation coefficient is expected to lie are given by:

$r + P. E$ (Upper Limit) and

$r - P. E$ (Lower Limit), respectively

But when 'r' is of negative value, i.e. $-1.00 < r < 0$, in order to compare 'r' with P.E which is always in positive value, 'r modulus' or $|r|$ is calculated. $|r|$ is nothing but it is the positive value of 'r' itself.

For instance, if 'r' is calculated as $r = -0.5$, then $|r| = 0.5$.

This positive value of 'r' is compared with P. E. and 6 (P.E.) to derive to a conclusion of practically significant/insignificant correlation.

ii. Regression Analysis

Regression is the statistical tool which is used to determine the statistical relationship between two (or more) variables and to make estimation of one variable on the basis of the other variable(s). The closer the relationship between the two variables, the more accurate the estimated value is. The unknown variable to be estimated is called dependent variable and the known variable is called independent variable.

Noteworthy here is that correlation analysis indicates to what degree the variables are related and regression analysis indicates how the variables are related.

Regression line of X variable on Y variable is given by;

$$x - \bar{x} = b_{xy} (y - \bar{y})$$

Likewise, the regression line of Y variable on X variable is given by;

$$y - \bar{y} = b_{yx} (x - \bar{x})$$

where, \bar{x} = x mean
 \bar{y} = y mean

iii. Trend Analysis

A series formed from a sequence of statistical data arranged in accordance with their time of occurrence is said to be a time series. Mathematically, a time series is defined by the functional relationship $y=f(t)$ where y is the value of the variable under consideration in time t . The time t is taken yearly. Trend line is taken as an example of time series.

The information in statement of cash flows also assists in predicting the ability to generate future cash flows. Here an effort is made to find out the future cash flows of NEA for the F/Y 2007/08 to 2011/12. For this, cash from operating, investing and financing activities are calculated by fitting the straight trend line considering operating, investing and financing activities as dependent variable and sales revenue as independent variable.

The trend line of dependent variable y , and independent variable variable x is expressed by,

$$Y = a + bx \dots\dots\dots\text{equation i}$$

And,

$$b = \frac{n \sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2}$$

$$a = \frac{\sum y}{n} - b \cdot \frac{\sum x}{n}$$

3.5 Population and Sample

A sample tries to draw conclusions about the population and the generalizations are made. In other words, the sample are used as estimates of the population parameters. Hence, samples are the basis of our inferences about the population. Here, all the government organizations such as Nepal Water Supply Corporation, Nepal Telecommunication, Nepal Oil Corporation, Nepal Drugs Ltd., National Trading Ltd., Salt Trading Ltd., Nepal Electricity Authority etc are considered as the total population. Out of them Nepal Electricity Authority is taken as the sample for the study as it is one of the oldest and largest government company of Nepal and it provides a significant contribution in the field of electricity. It provides its services to all over the country. However, NEA is suffering from a huge loss. Thus, NEA has been considered as the sample for the study to analyze and evaluate its performance as well as the loss suffered by it from the view point of cash management.

3.6 Methods of Analysis and Presentation

This research uses various formats and data table to present the data. The collected data from various sources are arranged, analyzed and presented in proper tables and diagrams. The data are explained with the help of different accounting, financial and statistical measures which are already discussed in the above part.

CHAPTER - IV

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The previous chapter described the research methodology employed for this research. The chapter introduces the organization of the study. It summarizes the regression equation and model of this study and discusses the data preparation before the analysis, including data arrangement.

The data presentation and analysis is the important part of the study because all the information and ideas will be analyzed and presented in this chapter. The basic objectives of this study have been already mentioned in the first chapter. The cash management aspects have discussed in the review of literature. In this chapter, the efforts have been made to process the obtained data analyzed and interpret them. The main purpose of this study is to highlight the cash management system of NEA. To accomplish this objective, this chapter of research paper will analyze the various aspect of cash management and their related variances of the authority.

4.2. Analysis of the Data by “Accounting Tools”

4.2.1 Analysis of Electricity Sales and Revenue Collection Report

Electricity Sales Report refers to report of the amount of kilowatt hours sold in a given period of time, usually grouped by classes of service, such as residential, commercial, industrial and other. “Other” sales includes sales for public street and highway lighting and other sales to public authorities, sales to railroads and railways, and interdepartmental sales. Electricity Sales Report shows the total energy sales in the internal and external market. It estimates the total

consumption of energy and growth of the consumer. It helps to find out the future needs of energy and suggest for the capital investments.

Similarly, Revenue Collection Report refers to report of the total amount of money received by an entity from sales of its products and/or services; gains from the sales or exchanges of assets, interest, and dividends earned on investments; and other increases in the owner's equity, except those arising from capital adjustments. Revenue Collection Report shows the net revenue collected from sales of electricity and other income from other services. It estimates the total revenue collected from energy sales and helps to find out the cash inflows from the energy sales.

Table: 4.1
Electricity Sales Report in GWh

Particulars	In GWh				
	2007/08	2008/09	2009/10	2010/11	2011/12*
Domestic	931.35	908.67	1108.87	1169.31	1339.93
Non-Commercial	109.93	98.89	103.47	109.49	115.68
Commercial	154.38	146.29	187.12	204.03	240.97
Industrial	901.09	845.68	960.43	1001.73	1123.92
Water Supply & Irrigation	46.86	48.14	55.98	82.80	64.58
Street Light	70.26	67.51	65.58	67.21	72.04
Temporary Supply	0.70	1.04	1.00	1.00	1.21
Transport	5.88	5.22	5.42	5.54	6.49
Temple	5.12	4.76	3.64	3.46	3.96
Community Sales	24.65	32.01	34.95	51.95	69.03
Total (Internal Sales)	2250.22	2158.21	2526.46	2696.52	3037.81
Bulk Supply (India)	60.10	46.38	75.07	31.10	4.12
Grand Total in GWh	2310.32	2204.59	2601.53	2727.62	3041.93

Source : Annual Report 2011/12

Note : * Provisional Figures

From the above table, it is shown that in the fiscal year 2007/8, total electricity 2310.32 GWh is supplied in the market. Similarly 2204.59 GWh, 2601.53 GWh, 2727.62 GWh, and 3041.93 GWh are supplied in the market in the fiscal year 2008/9, 2009/10, 2010/11 and 2011/12 respectively. This imposes that in every fiscal year sales is being increasing rapidly.

Table: 4.2
Electricity Sales Report in NRs.

NRs. In Million	
Fiscal Year	Sales
2007/08	15041.39
2008/09	14405.93
2009/10	17164.60
2010/11	17946.82
2011/12*	20079.13

Source : Annual Report 2011/12

Note : * Provisional Figures

From the above table, it is shown that in the fiscal year 2007/8, total electricity sales in the amounts is as Rs. 15041.39 million. Similarly, total sales of electricity in amounts in the fiscal year 2008/9, 2009/10, 2010/11 and 2011/12 are Rs. 14405.93 million, Rs. 17164.60 million, Rs. 17946.82 million and Rs. 20079.13 million respectively. This reflects that there is good sales of electricity in every fiscal year and is in increasing trend.

In the fiscal year 2008/09, total electricity supplied in the market and total sales of electricity in the amounts is low in comparison to the other fiscal year. It is because of low production since the consumption of electricity is increasing day by day. Low production can be due to decrease in power purchase, investment in

electricity, capital work in progress and mainly lack of water resources in the production area to produce the electricity.

Table: 4.3
Revenue Collection Report

NRs. In Million					
Particulars	2007/08	2008/09	2009/10	2010/11	2011/12*
Domestic	6297.65	6100.65	7252.06	7602.34	8754.55
Non-Commercial	982.08	900.75	983.63	1020.51	1103.60
Commercial	1399.51	1384.67	1719.35	1910.28	2348.54
Industrial	5544.80	5264.33	6060.20	6378.25	7177.63
Water Supply & Irrigation	204.67	215.62	353.14	250.60	279.23
Street Light	467.31	445.96	333.90	433.42	458.68
Temporary Supply	10.51	12.20	13.58	13.98	16.46
Transport	33.70	26.95	27.58	27.78	31.93
Temple	26.38	24.41	28.16	26.51	20.03
Community Sales	64.22	70.10	170.90	189.28	240.77
Total (Internal Sales)	15030.83	14445.64	16942.50	17852.95	20431.42
Bulk Supply (India)	361.14	295.49	604.85	215.42	31.25
Gross Revenue	15391.97	14741.13	17547.35	18068.37	20462.67
Net Income from Other Services	584.18	1601.66	1188.27	1382.94	1349.74
Total Revenue	15976.15	16342.79	18735.62	19451.31	21812.41

Source : Annual Report 2011/12

Note : * Provisional Figures

From the above table, the revenue collection from the sale of electricity is increasing rapidly in every fiscal year. The total revenue collected in the fiscal year 2007/8, 2008/9, 2009/10, 2010/11 and 2011/12 is Rs. 15976.15 million, Rs. 16342.79 million, Rs. 18735.62 million, Rs. 19451.31 million and Rs. 21812.41 million respectively. This shows that if proper management and control of distribution expenses, administrative expenses and other expenses, NEA can generate profit in every fiscal year. For that NEA should discourage unwanted

expenses and should increase the investment for the long term future and also NEA can get loan facility easily to expand production capacity as per the growth of consumer.

4.2.2 Analysis of Cash Budget

Cash budgeting is an effective way to plan and control the cash flows, assess cash needs, and effectively use excess cash. The primary objective of cash flow is to plan the liquidity position of the company as a basis for determining future borrowings and future investment. A cash budget shows the planned cash inflows, outflows, and ending position by interim period for the specific time span. It is directly related to other plans such as the sales plan, account receivable and the expenses budget and capital expenses budget. The cash budget focuses exclusively on the amount and timing of cash inflows and outflows. The primary purpose of cash budget are to give the probable cash position at the end of each period as a result of planned operations, to identify cash excesses or shortages by time period, to establish the need for financing and or the availability of idle cash for investment, to coordinate cash with total working capital, sale revenue, expenses, investment, and liabilities and to establish a sound basis for continuous monitoring of the cash position.

Cash Budget serves as the most important techniques of planning and controlling the use of cash. Cash Budget, simply defined, is the statement that depicts the firm' estimated cash disbursement during the plan period. The essence of preparing cash budget is to determine whether at a given point of time there is surplus or shortage of cash. Preparing of cash budget is to determine the operating and financial cash flows expected for the time period.

The following table shows the Cash Budget of NEA during the study period.

Table: 4.4
Cash Budget

NRs. In Million

Particulars	Years				
	2007/08	2008/09	2009/10	2010/11	2011/12
Opening Cash Balance	1447.58	1337.15	1724.76	1244.65	2016.55
Add: Receipts					
Cash Sales	15041.39	14405.93	17164.60	17946.82	20079.13
Advance Cash	2319.72	2495.13	4585.60	2976.82	3025.83
Dividend, Interest & Other Gain	934.66	1601.67	1188.27	1382.94	1349.74
Issue of Debentures for Electricity*	0.00	50000.00	0.00	10000.00	0.00
Total Receipts	19743.35	69839.88	24663.23	33551.23	26471.25
Less: Payments					
Purchase of Property, Plant & Equipment	248.52	29208.22	1867.13	1619.84	1395.00
Purchase of Investment	738.14	519.73	982.14	1733.01	153.00
Administrative Expenses	2110.01	2575.09	3091.21	3004.18	3670.68
Distribution Expenses	683.98	651.69	789.52	866.74	1009.38
Cost of Sales	9530.83	9935.27	12475.34	12624.02	14883.93
Total Payments	13311.48	42890.00	19205.34	19847.79	21111.99
Surplus / Deficit	6431.87	26949.88	5457.89	13703.44	5359.26
Add: Loan Received	1140.00	250.00	1280.00	790.00	2000.00
Less: Loan Repayment*	3960.35	22982.57	1824.59	8882.88	1942.61
Less: Interest Paid	2274.37	2492.55	3668.65	3594.01	3780.00
Closing Cash Balance	1337.15	1724.76	1244.65	2016.55	1636.65

Source : Annual Report 2011/12

Note : * Balancing Figures

From the above table it is shown that in the fiscal year 2007/08 opening cash balance is Rs 1447.58 million, total receipt amount is Rs 19743.35 million, and the payment is Rs 13311.48 million, by which total surplus is Rs 6431.87 million, and it ends up with total closing cash balance of Rs 1337.15 million. Similarly opening cash balance is Rs 1337.15 million, Rs 1724.76 million, Rs 1244.65 million, and Rs 2016.55 million in the fiscal year 2008/09, 2009/10, 2010/11, and 2011/12

respectively. Likewise total receipts are Rs 69839.88 million, Rs 24663.23, Rs 33551.23 million, and Rs 26471.25 million in the fiscal year 2008/09, 2009/10, 2010/11, and 2011/12 respectively. Again Total payments are Rs 42890.00 million, Rs 19205.34 million, Rs 19847.79 million, and Rs 21111.99 in the fiscal year 2008/09, 2009/10, 2010/11, and 2011/12 respectively. By which total surplus are Rs 26949.88 million, Rs 5457.89 million, Rs 13703.44 million, and Rs 5359.26 million in the fiscal year 2008/09, 2009/10, 2010/11, and 2011/12 respectively. We didn't found any deficit in the respective fiscal years but we found very much fluctuation in total surplus in fiscal year 2008/09 comparative to other fiscal year. It is because of low purchase of capital work in progress, low purchase of investment, low expenses made in distribution and administrative expenses, and cost of sales is also low comparing to the previous fiscal years. Likewise closing balance is Rs 1724.76 million, Rs 1244.65 million, Rs 2016.55 million, and Rs 1636.65 million in the fiscal year 2008/09, 2009/10, 2010/11, 2011/12 respectively.

4.2.3 Analysis of Cash Flow Statement

The analysis of events and transaction that affects the cash position of company is termed as cash flow analysis. Cash flow analysis is done through statement of cash flows.

The cash flow statement is a statement of company's ability to generate cash from various activities such as operating, investing, financing, and there need of cash. It is a statement which shows the inflows and outflows of cash and cash equivalents during the year.

Cash flow analysis provides useful information to evaluate a firm's ability to have sufficient cash in both short term and long term basis. It is the analysis of events

and transactions that affects the cash position of company. Cash flow analysis is done through statement of cash flows.

Cash flow analysis helps to evaluate financial policies and cash positions. It assesses a company's ability to generate positive future cash flows. It helps in evaluating firm's ability to meet its obligation, its ability to pay dividends and its need for external financing. Through past trends of cash flows, one can analyze, evaluate and predict future cash flow which is the ultimate goal of the study.

This statement of cash flow reflects the change in financial position from fiscal year 2007/08 to 2011/12, classifying transactions into three categories; operating, investing and financing activities.

NEA prepares cash flow statement under indirect method that is most often used in annual reports. Under indirect method, net profit/loss is adjusted for the effect of transaction of a non-cash nature, any deferrals or accruals of past or future operating cash receipts or payments and items of income or expenses associated with investing or financing cash flows.

The following table shows the Cash Flow Statement of NEA during the study period.

Cash Flow Statement of Nepal Electricity Authority From 2007/08 to 2011/2012
NRs. In Million

Particulars	Years				
	2007/08	2008/09	2009/10	2010/11	2011/12
A. Cash Flow From Operating Activities (CFOA)					
Provision for Dividend	0.00	0.00	0.00	0.00	0.00
Interim Dividend	0.00	0.00	0.00	0.00	0.00
(a) Internal	0.00	0.00	0.00	0.00	0.00
(b) Sale to India	0.00	0.00	0.00	0.00	0.00
Profit Transfer to Balance Sheet	-8985.61	-14098.83	-21022.36	0.00	-8550.76
Net Profit / Loss for the year	-8985.61	-14098.83	-21022.36	0.00	-8550.76
Add : Non Cash and Non Operating Expenses:					
Depreciation for the year	1895.17	2361.20	2902.92	3031.33	3105.00
Loss on Foreign Exchange	484.10	813.96	28.67	85.01	897.24
Provision for Losses on Property, Plant and Equipment*	7106.48	-16603.59	22486.75	-15968.50	6757.81
Differed Revenue Expenditure Written Off	108.51	96.68	112.36	323.68	0.00
Less : Non Operating Gain:					
Gain on Foreign Exchange	0.00	0.00	0.00	0.00	0.00
Funds Flow From Operation (FFO)	608.65	-27430.58	4508.34	-12528.48	2209.29
Add : Decrease in Working Capital Except Cash (item wise)					
Inventory	0.00	0.00	0.00	0.00	0.00
Debtors	0.00	867.06	0.00	0.00	199.06
Prepaid / Advance Cash	0.00	0.00	0.00	1608.78	0.00
Creditors	0.00	0.00	0.00	5083.50	0.00
Less : Increase in Working Capital Except Cash (item wise)					
Inventory	301.68	358.99	272.87	70.94	41.21
Debtors	569.67	0.00	1243.72	773.45	0.00

Prepaid / Advance Cash	94.19	175.41	2090.47	0.00	49.01
Creditors	2160.00	4868.05	3507.23	0.00	1432.70
Cash Flow From Operating Activities (CFOA)	-2516.89	-31965.97	-2605.95	-6680.59	885.43
B. Cash Flow From Investing Activities (CFIA)					
Sale / Purchase of Property, Plant & Equipment	248.52	29208.22	1867.13	1619.84	1395.00
Sale / Purchase of Investment	738.14	519.73	982.14	1733.01	153.00
Sale / Purchase of Capital Work In Progress	6554.52	-22149.25	3490.01	5791.56	909.25
Cash Flow From Investing Activities (CFIA)	7541.18	7578.70	6339.28	9144.41	2457.25
C. Cash Flow From Financing Activities (CFFA)					
Add: Issue of Shares / Debentures for Electricity	0.00	50000.00	0.00	10000.00	0.00
Add: Secured Long Term Loans Borrowed	1140.00	250.00	1280.00	790.00	2000.00
Less: Repayment of Borrowing	3960.35	22982.57	1824.59	8882.88	1942.61
Less: Interest Payment	2274.37	2492.55	3668.85	3599.01	3780.00
Cash Flow From Financing Activities (CFFA)	-5094.72	24774.88	-4213.44	-1691.89	-3722.61
Net Cash Increase / Decrease (A + B + C)	-70.43	387.61	-480.11	771.93	-379.93
Add: Opening Cash / Bank Balance	1447.58	1337.15	1724.76	1244.65	2016.58
Closing Cash / Bank Balance	1377.15	1724.76	1244.65	2016.58	1636.65

Source : Annual Report 2011/12

Note : * Balancing Figures

Table: 4.5
Cash Flow Statement

Analysis of Cash Flow from Operating Activities (CFOA)

It includes all those activities which are main activities of a company. If the cash inflow is greater than outflow, it is considered satisfactory because it shows the company has sufficient cash to operate and bear all the expenses and overhead occurred during the operation but if cash outflow is greater than inflow then it is considered poor performance.

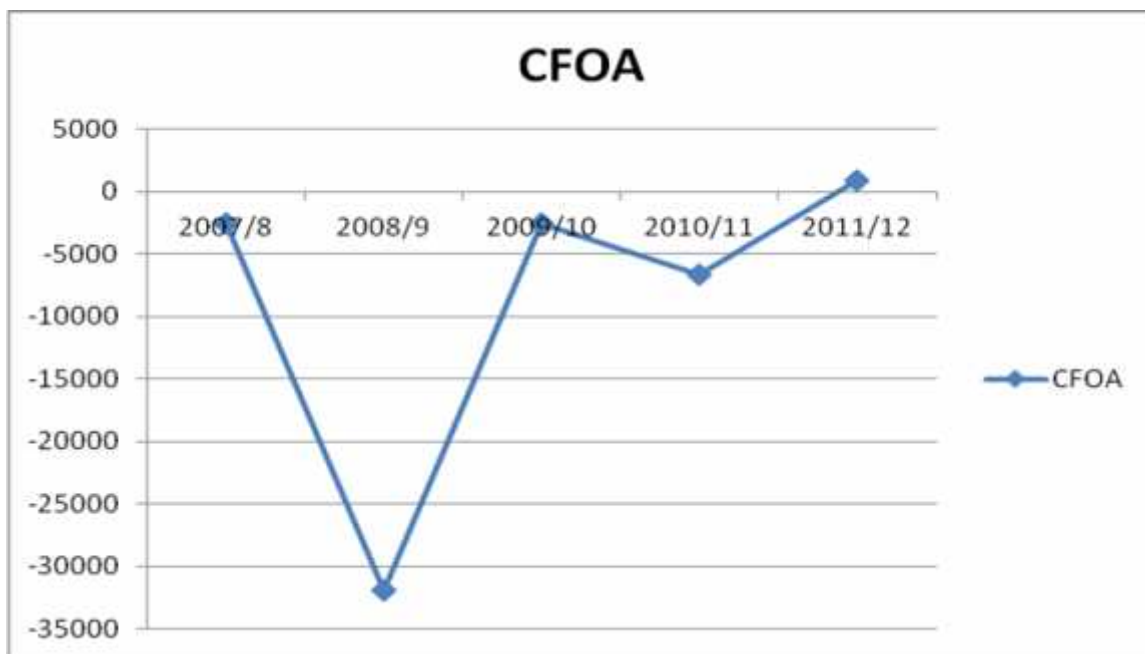
Net Cash from operating activities of NEA is Rs. (2516.89) million in FY 2007/08 and in FY 2008/09 it is increased to Rs. (31965.97) million i.e it is increased by 12.70 times[$(31965.97/2516.89)$]. It is due to decrease in working capital i.e low increase in current assets and increase in current liabilities. Again in FY 2009/10 and 2010/11 cash from operating activities are negative Rs. (2605.95) million and Rs. (6680.59) respectively. In FY 2011/12, cash from operating activities is positive i.e Rs 885.43 million. It is the highest (positive) cash from operating activities obtained in the last 5 years and it is due to achieving low net loss after a long period of time and also due to increase in current liabilities and low increase in current assets. However, NEA is in loss from FY 2007/8 to 2011/12 and in the respective year current assets increased too except in FY 2011/12. Thus CFOA have been positive to Rs. 885.43 million in FY 2011/12 though there have been increased in current liabilities and decrease in current assets. In FY 2011/12 it is Rs 885.43 million, it is due to increase in inventories, prepaid, advances.

The above interpretation of the data shows that NEA have maintained the negative CFOA but it is fluctuating during the study period. NEA have excessive amount of non operating expenses. That is why NEA is facing loss in each year but able to generate poor cash inflow from operating activities. It indicates that NEA fails to maintain increasing trend of CFOA. The reason behind this is NEA

fails to obtain profit every year and doesn't give much importance to current assets and current liabilities. However, the overall performance of the enterprise is not satisfactory since it generates negative cash inflow from operating activities which doesn't ensures the ability of paying debts and investing in a hydro projects.

The CFOA of NEA during study period can be shown in a graphical representation as follows:

Figure: 4.1
Cash Flow From Operating Activities (NRs. in Million)



Analysis of Cash Flow from Investing Activities (CFIA)

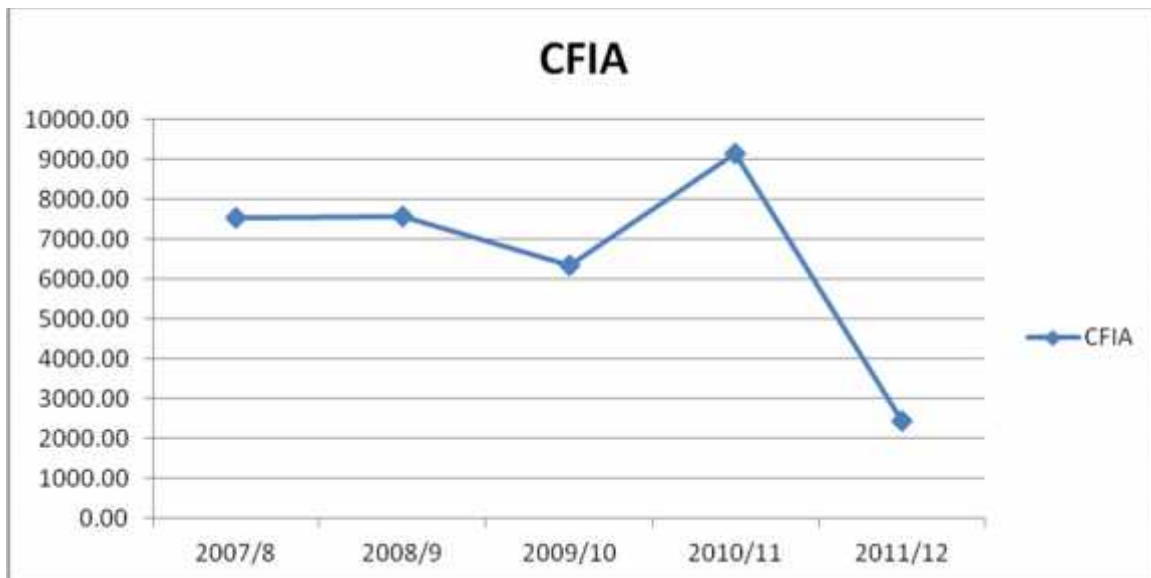
CFIA of NEA is observed positive during the study period. It is Rs. 7541.18, Rs. 7578.70, Rs. 6339.28, Rs. 9144.41 and Rs. 2457.25 million respectively in the following respective FY 2007/08, 2008/09, 2009/10, 2010/11 and 2011/12. From

the above figure it is seemed that CFIA is increased in FY 2008/09 by 0.49% [(7578.70-7541.18) / 7578.70] than in FY 2007/08. It indicated that in FY 2008/09, more fixed assets and investments purchased. In FY 2009/10, CFIA decreased by 16.35% and it is due to the sale of plant and machinery. However, CFIA is decreased in FY 2009/10, increased in FY 2010/11 and again decreased in FY 2011/12, it is because of high and low purchase and sale of plant and machinery as well as investments made in the respective.

During the study period the main investing activities involve in acquisition of plant & machinery and investments. It states that NEA has enhanced future growth opportunities and is able to expand its services.

The CFIA during study period can be shown in graphical representation as follows:

Figure: 4.2
Cash Flow from Investing Activities (NRs in million)



Analysis of Cash Flow from Financing Activities (CFFA)

CFFA of NEA are Rs. (5094.72), Rs. 24747.88, Rs. (4213.44), Rs. (1691.89), and Rs. (3722.61) million in FY 2007/08, 2008/09, 2009/10, 2010/11, and 2011/12, respectively. The amount is increased by 79.41% in 2008/09 but it is decreased by 82.97% in 2009/10. It is again decreased by 59.84% in 2010/11 and increased by 54.55% in 2011/12. The reason behind decrease in cash flow from financing activities can be redemption of preference shares/debentures and repayment of loan. Since NEA has not issued preference shares yet, the reason for decrease in CFFA is repayment of loan. In FY 2008/9, NEA has repaid huge amount of borrowing. NEA should issue more and more debentures for electricity every year for the positive CFFA. And the proportionate of borrowing of loan of NEA is higher than repayment of loan, if NEA issue the preference shares, this would be low.

It can be shown in graphical representation as follows:

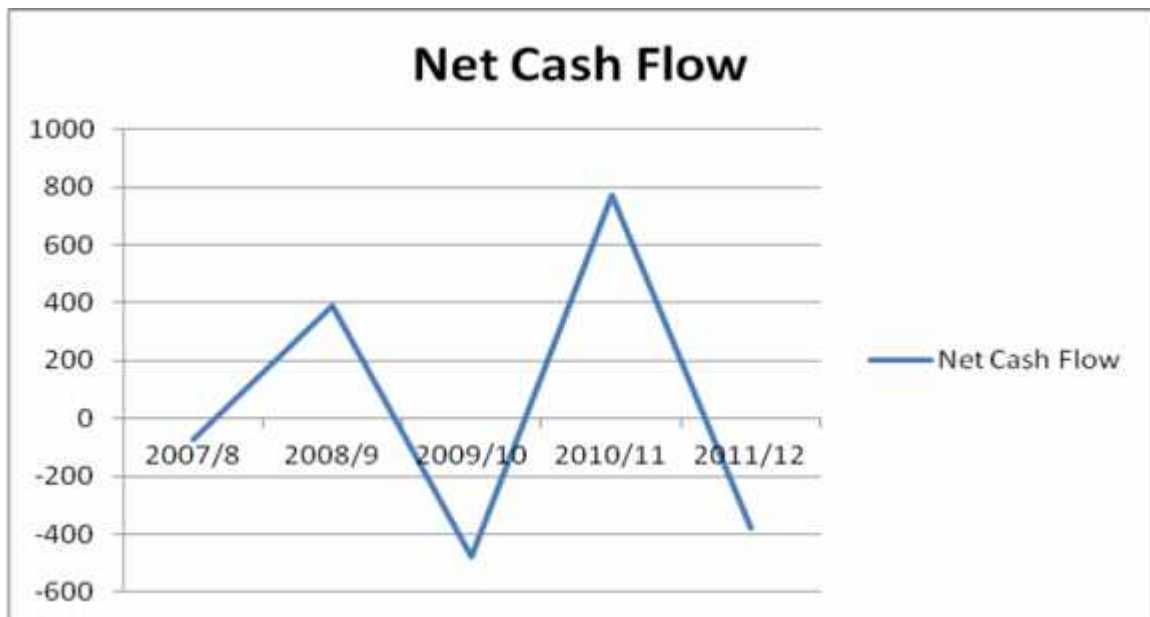
Figure: 4.3
Cash Flow from Financing Activities (NRs in million)



Analysis of Net Cash Flow

The net cash flow of NEA is obtained from accumulating net cash flow from operating, investing and financing activities. The net cash flow of NEA is very fluctuating during the study period. It can be shown with the following trend line:

Figure: 4.4
Net Cash Flow (NRs in million)



From the above trend line, it is seemed that in 2009/10 net cash flow decreased in a heavy amount. It is due to the loss suffered by the enterprise. In that FY, company suffered from a huge loss.

4.3. Analysis of the Data by “Financial Tools”

4.3.1. Analysis of Cash and Bank Balance

Holding of optimum cash and bank balance is the rational cash management practice of a business firm. Management of cash plays a significant role in current assets of NEA. Total cash balance refers to the cash in hand, cash at bank, and cash in transit, near cash assets such as marketable securities and time deposit in bank.

The table below shows the amount of cash and bank balance of NEA during the period under study. The cash and bank balance of each fiscal year end has been compared to preceding years to analyze fluctuations.

Table: 4.6
Analysis of Cash and Bank Balance

NRs. In Million

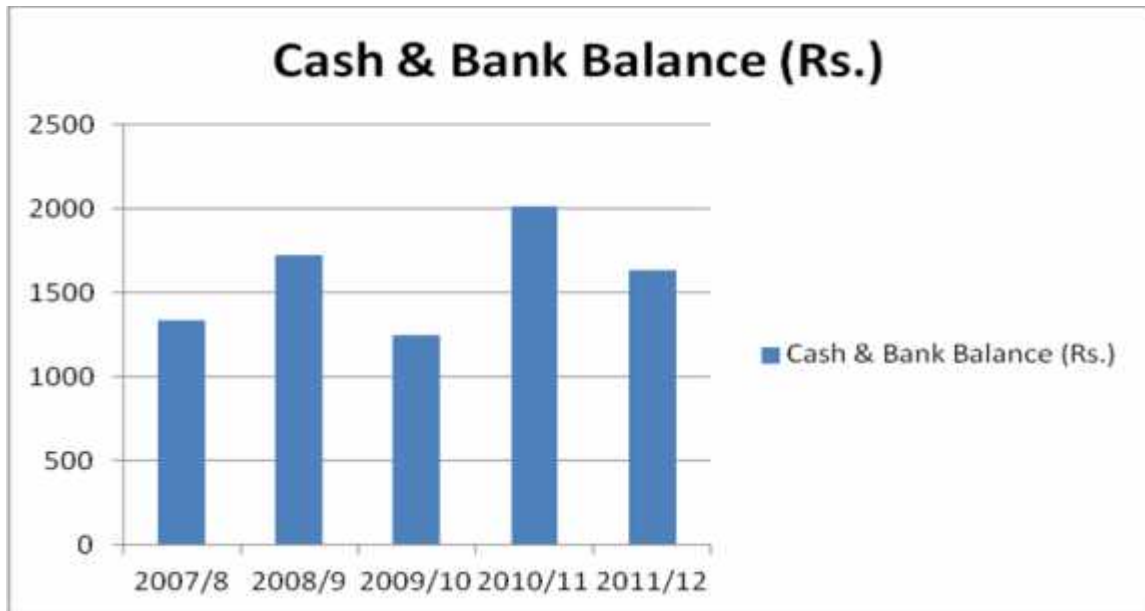
Fiscal Year	Cash & Bank Balance (Rs.)	Increase / Decrease
2007/08	1337.15	-
2008/09	1724.76	3.88%
2009/10	1244.65	-4.70%
2010/11	2016.65	7.72%
2011/12	1636.65	-3.80%

In fiscal year 2007/08, the cash balance of the company is Rs. 1337.15 million, which is increased by 3.88% i.e. Rs. 1724.76 million in the FY 2008/09. However, it is sharply decreased by 4.70% in FY 2009/10. Likewise, it is increased by 7.72% in the FY 2010/11. Again it is decreased by 3.80% in the fiscal year 2011/12.

From the above information and the analysis, we simply can say that NEA is holding cash inconsistently and utilizing it not properly. There was very fluctuation in handling the cash which might not be in the favor of an enterprise.

It can be presented with the help of graph to show the variation in cash balance held at the end of each fiscal year.

Figure: 4.5
Cash & Bank Balance (NRs in million)



4.3.2. Analysis of Cash Turnover Ratio

The cash balance of the company should be optimum to meet its current obligations in course of daily business transaction. The cash turnover ratio represents how quickly the cash is received from its sale be formulated to find out. Higher turnover is the signal of good liquidity and vice-versa. However, too high ratio indicates excess cash balance being held idle.

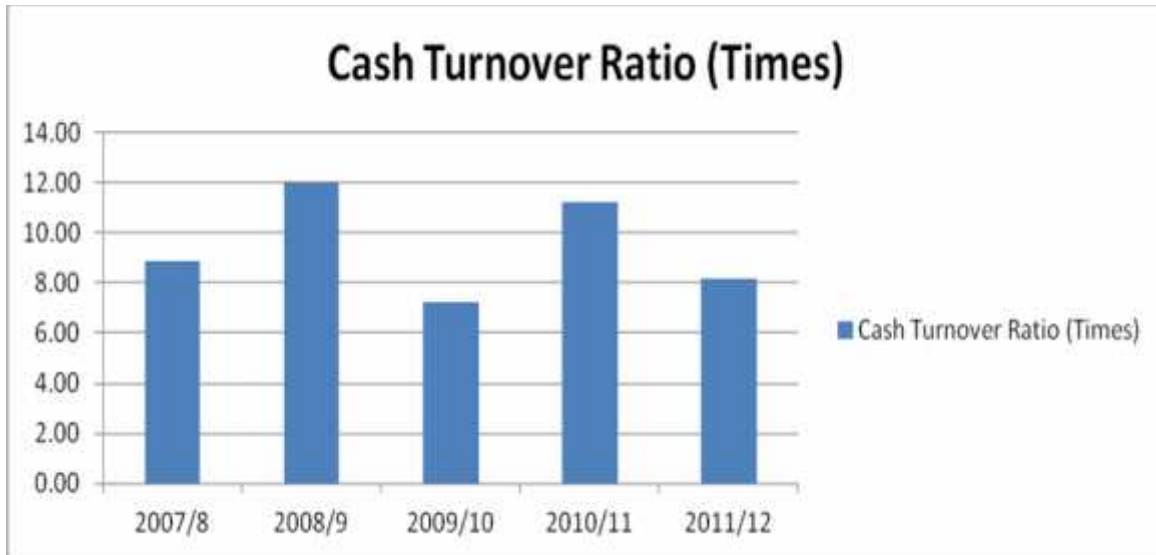
Table: 4.7
Analysis of Cash Turnover Ratio

NRs. In Million			
Fiscal Year	Sales (Rs.)	Cash & Bank Balance (Rs.)	Cash Turnover Ratio (Times)
2007/08	15041.39	1337.15	8.89
2008/09	14405.93	1724.76	11.97
2009/10	17164.60	1244.65	7.25
2010/11	17946.82	2016.58	11.24
2011/12	20079.13	1636.65	8.15

The above table shows erratic fluctuations have been observed in cash turnover analysis. The ratio is fluctuating too high or too low, indicative of no definite policy of holding cash balance in relation to sales volume. Above table shows that the highest ratio of 11.97 times has been observed in FY 2008/09. Likewise, the lowest ratio of 7.25 times has been observed in FY 2009/10. The above ratios indicate that cash turnover ratio of NEA was fluctuating which suggest NEA was unable to convert sales into cash as expected, that shows NEA is inefficient to manage its cash. NEA has weak cash management policy.

It can be presented with the help of graph to show the cash turnover ratio in relation with sales and cash balance.

Figure: 4.6
Cash Turnover Ratio (Times)



4.3.3 Analysis of Current Ratio

One of the reliable methods to examine liquidity position of an enterprise is by means of current ratio; i, e current Assets to current liabilities.

The conventionally accepted current ratio 2:1 is the standard ratio, a company should maintain. However, depending upon the nature of the company, the development of capital market and availability of long-term funds to finance current assets; the satisfactory ratio varies. As stated by Khan and Jain, taking into consideration the nature of a company, satisfactory current ratio for a public enterprise is generally very low, as normally these companies have very little need for current assets. So, satisfactory ratio for NEA, a public enterprise is therefore between 2:1 and higher than 1.5:1. But in general, ratio less than 1:1 is certainly undesirable for any enterprise.

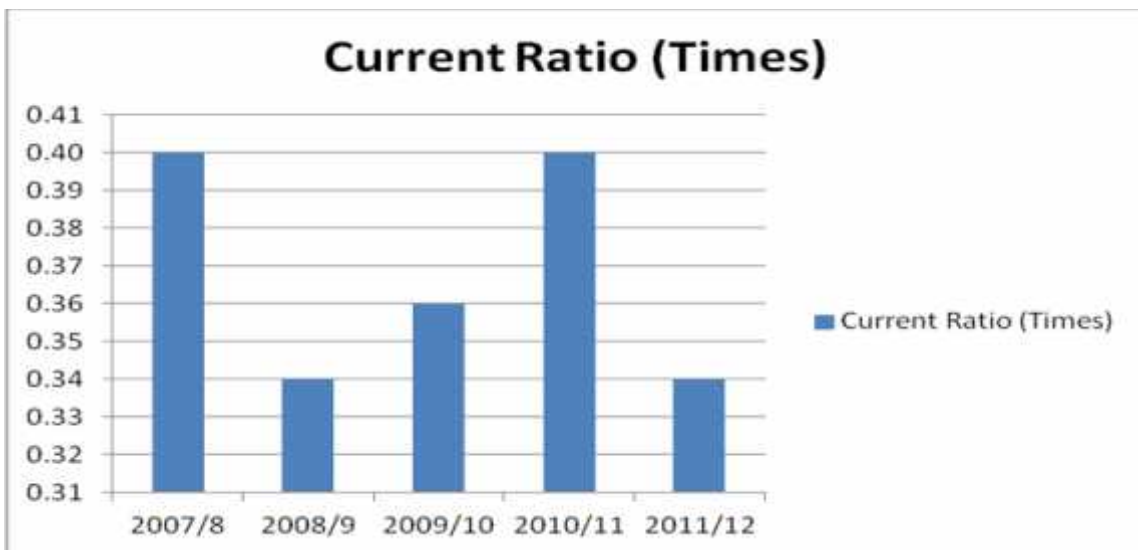
Table: 4.8
Analysis of Current Ratio

NRs. In Million			
Fiscal Year	Current Assets (Rs.)	Current Liabilities (Rs.)	Current Ratio (Times)
2007/08	11178.08	27759.55	0.40
2008/09	11233.03	32983.00	0.34
2009/10	14359.50	39766.25	0.36
2010/11	14367.52	36082.68	0.40
2011/12	13878.75	40778.78	0.34

The above figure shows that the current ratio varies from 0.40:1 in the FY 2007/08 to 0.34:1 in the FY 2011/12 indicating current ratio is below 1:1. Observing the figure one may note that NEA has difficulty in meeting its current obligation and shows the solvency positions is not better.

It can be presented with the help of graph to show the current ratio.

Figure: 4.7
Current Ratio (Times)



4.3.4 Analysis of Account Receivables Turnover Ratio

This ratio shows how quickly receivables are converted into cash. The ratio shows how well the debtors have been handled by the company. Higher ratio and shorter average collection period indicates better trade credit management and better liquidity of debtors, and consequently better liquidity of the enterprise. Likewise, lower ratio and longer average collection period signals delayed payments by the debtors. The higher the ratio, the more efficient is the management on collecting the debtors. A higher ratio indicates that within a short period, the firm is collecting the cash from debtors. A low ratio shows that debts are not being collected rapidly.

Table: 4.9
Analysis of Account Receivables Turnover Ratio

NRs. In Million

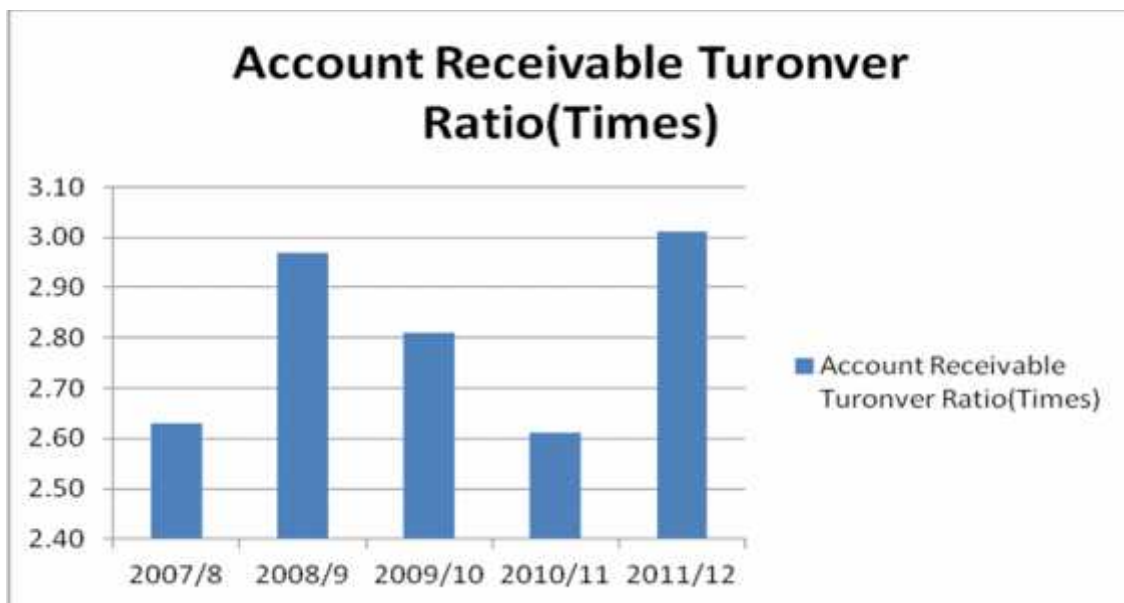
Fiscal Year	Sales (Rs.)	Account Receivables (Rs.)	Account Receivable Turnover Ratio(Times)
2007/8	15041.39	5721.08	2.63
2008/9	14405.93	4854.02	2.97
2009/10	17164.60	6097.74	2.81
2010/11	17946.82	6871.19	2.61
2011/12	20079.13	6672.13	3.01

From the above table it shows that the ratios are moderately fluctuating, and vary from the lower of 2.61 times to the highest of 3.01 times. Since the information regarding credit days extended to customers are not available, and moreover, such credit days are likely to vary depending upon the nature of debtors, there is no absolute means of comparison available to compare the average collection days. So, analysis regarding average collection days has not been carried-out.

However, it should be noted that too short average collection days doesn't necessarily imply that the firm is functioning well, for it indicates a very restrictive credit and collection policy thereby restricting its sales only to those debtors whose financial conditions are sound and who make their payments readily. Such restrictive policy would definitely avoid bad debts but the sales volume is likely to be curtailed by large proportion. Consequently, the overall profitability of the firm goes down.

It can be presented with the help of graph to show the receivable turnover ratio.

Figure: 4.8
Account Receivable Turnover Ratio (Times)



The above table and diagram shows that in the fiscal year 2011/12 the account receivable turnover ratio is higher than the other. It indicates the cash collection from the debtors is better than the previous year which shows NEA is developing its efficiency in turning the debtors into cash.

4.3.5 Analysis of Inventory Turnover Ratio

This ratio is yet another way of analyzing the liquidity of an enterprise. This ratio shows how effectively a firm is managing its assets and whether or not the level of those assets is properly related to the level of operations as measured by sales. High inventory turnover ratio signals better inventory management and vice-verse. However, very high inventory turnover ratio is indicative of under-investment in or very low level of inventory; and as such implies that the firm has not been meeting customer demand. So, a firm should go for an optimum inventory turnover ratio, which signifies sound inventory management.

Table: 4.10
Analysis of Inventory Turnover Ratio

NRs. In Million

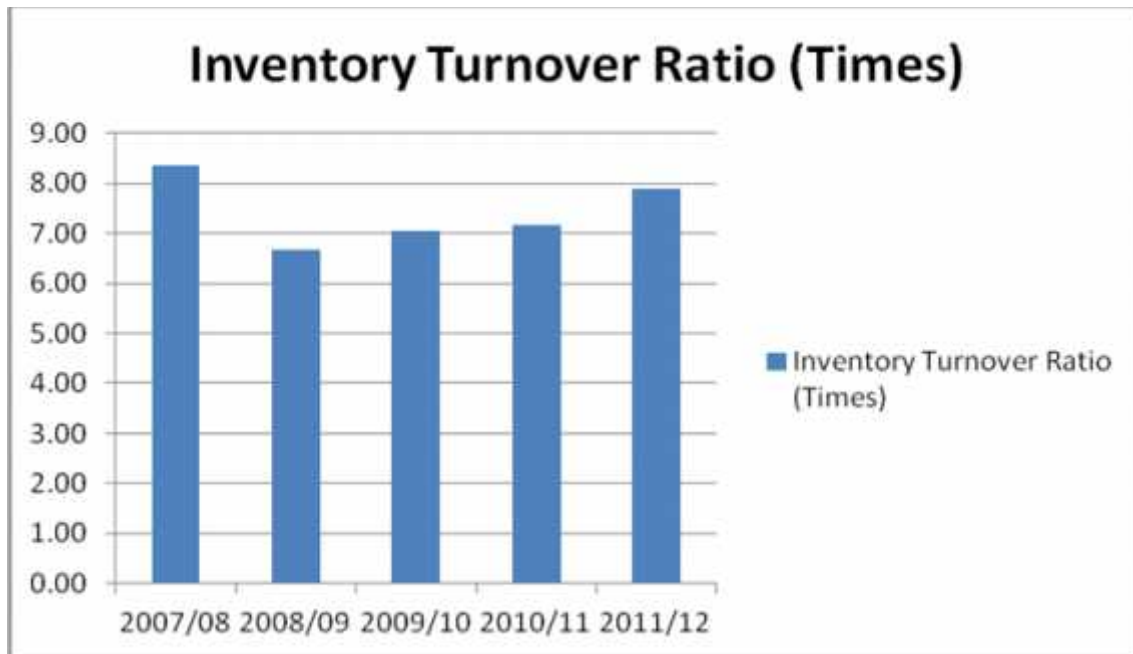
Fiscal Year	Sales (Rs.)	Inventories (Rs.)	Inventory Turnover Ratio(Times)
2007/08	15041.39	1800.13	8.36
2008/09	14405.93	2159.12	6.67
2009/10	17164.60	2431.99	7.06
2010/11	17946.82	2502.93	7.17
2011/12	20079.13	2544.14	7.89

From the above table shows that the ratio fluctuates from 6.67 times to 8.36 times and these occur at 2008/09 and 2007/08. The ratio for the fiscal year 2011/12 is 7.89 times, the highest of all ratios after fiscal year 2007/08, has definitely suggested that during the period, either the NEA should have undergone underinvestment or the inventory held was comparatively lower. Thus we can conclude that NEA has not meeting customer demand.

It can be presented with the help of graph to show the inventory turnover ratio.

Figure: 4.9

Inventory Turnover Ratio (Times)



The above table and diagram shows inventory turnover ratio is fluctuating, the higher ratio is in the FY 2007/08 which indicates in that year NEA is quite efficient in managing the inventory than other years. The lower inventory ratio is observed in the FY 2008/09. This indicates NEA is unable to hold the inventory as expected. However it is slightly improved in the FY 2011/12 which is up to 7.89 times.

4.3.6 Analysis of Net Profit Margin Ratio

Net profit Margin ratio measures the relationship between net profits and sales of a firm. A high profit margin indicates adequate return to the firm and thus enables in with standing in adverse economic situations when sales price is declining, cost of production is rising and demand for the product is falling.

Table: 4.11
Analysis of Net Profit Margin Ratio

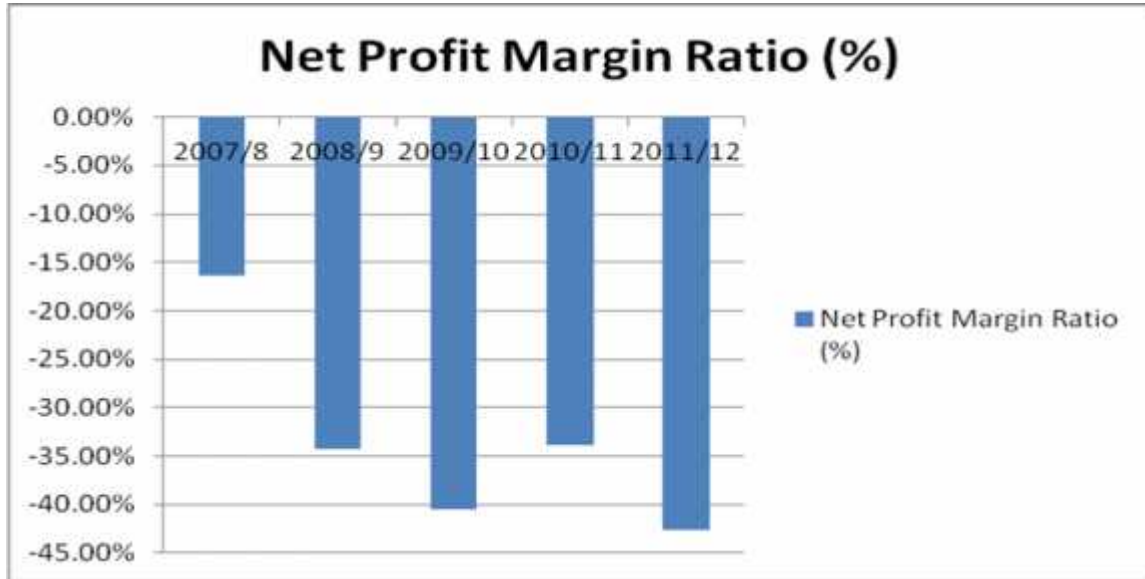
NRs. In Million

Fiscal Year	Net Pofit (Loss) After Tax (Rs.)	Sales (Rs.)	Net Profit Margin Ratio (%)
2007/08	-2467.53	15041.39	-16.40%
2008/09	-4930.04	14405.93	-34.22%
2009/10	-6961.82	17164.60	-40.56%
2010/11	-6089.22	17946.82	-33.93%
2011/12	-8550.76	20079.13	-42.59%

Above table shows that the company has been operating under loss most of the fiscal years. Noticeably in the FY 2007/08, the net profit margin ratio is 16.40% which means NEA is able to generate profit in that year if expenses were controlled and account receivables were targeted to collect within the collection period. The net profit margin ratios observed in FY 2008/09, 2009/10, 2010/11, and 2011/12 are very insignificant with a ratio of (34.22%), (40.56%), (33.93%) and (42.59%), Overall, the company has been operating under loss and it is in increasing trend.

It can be presented with the help of graph to show net profit margin ratio.

Figure: 4.10
Net Profit Margin Ratio (%)



The above diagram shows net profit margin ratio is negative in the every fiscal year.

It indicates NEA is very poor in converting sales revenue into profit from which we can say that NEA has poor cash management policy.

4.4. Analysis of the Data by “Statistical Tools”

4.4.1 Analysis of Karl Pearson’s coefficient of correlation (r) between sales and cash balance

To find correlation between sales and cash balance, Karl Pearson’s coefficient of correlation(r) is determined. For this purpose sales (x) are assumed to be dependence variables and cash balance (Y) are assumed to be independent variables. At first it is assumed that actual sales will increase as cash balance will increase and vice-versa. It means there should be positive correlation between cash

balance and sales. The significance of correlation 'r' is rested with probable error (P.E.).

Table: 4.12
Correlation between Cash Balance and Sales

NRs. In Million

Fiscal Year	Sales (X)	Cash & Bank Balance (y)	$x = X - 17164.60$	xy	x^2	y^2
2007	14449.73	1447.58	-2714.87	-3929991.51	7370519.12	2095487.86
2008	15041.39	1337.15	-2123.21	-2839050.25	4508020.70	1787970.12
2009	14405.93	1724.76	-2758.67	-4758043.67	7610260.17	2974797.06
2010	17164.60	1244.65	0.00	0.00	0.00	1549153.62
2011	17946.82	2016.58	782.22	1577409.21	611868.13	4066594.90
2012	20079.13	1636.65	2132.31	3489845.16	4546745.94	2678623.22
n = 6		y = 9407.37	x = -4682.22	xy = -6459831.07	=24647414.05	=15152626.78

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

$$= \frac{6 \times -6459831.07 - (-4682.22 \times 9407.37)}{\sqrt{6 \times 24647414.05 - (-4682.22)^2} \sqrt{6 \times 15152626.78 - (9407.37)^2}}$$

$$= \frac{5288389.56}{11223.25 \times 1554.72}$$

$$= 0.30$$

Since the value of r is 0.30, there is positive correlation between sales revenue and cash/bank balance. It means, higher the sales revenue higher will be the cash/bank balance. It might be due to more investment of cash.

Again,

$$\begin{aligned} \text{P. E.} &= 0.6745 \frac{1 - Zr^2}{\sqrt{n}} \\ &= 0.6745 \times \frac{1 - (0.30)^2}{\sqrt{6}} \\ &= -0.23 \end{aligned}$$

Now,

$$\begin{aligned} 6 \text{ P.E.} &= 6 \times -0.23 \\ &= -1.38 \end{aligned}$$

Since $r > 6 \text{ P.E.}$ i.e. $0.30 > -1.38$, We can say that the ascertained value of correlation coefficient, r is insignificant. It means, there is perhaps no evidence of correlation.

4.4.2 Estimation of Sales Revenue Using Trend Analysis

Fitting the trend line taking fiscal year (x) as independent variable and sales revenue (y) as dependent variable, we can predict future sales revenue as follows:

Table: 4.13
Trend Analysis of Sales Revenue

NRs. In Million

Fiscal Year (X)	Sales (y)	x = X – 2009	xy	x²
2007	14449.73	-2	-28899.46	4
2008	15041.39	-1	-15041.39	1
2009	14405.93	0	0.00	0
2010	17164.60	1	17164.60	1
2011	17946.82	2	35893.64	4
2012	20079.13	3	60237.39	9
n = 6	y = 99087.60	x = 3	xy = 69354.78	x² = 19.00

In the above table, fiscal year 2007 refers to 2006/07. Similarly, 2008 refers to 2007/08, 2009 refers to 2008/09, 2010 refers to 2009/10, 2011 refers to 2010/11 and 2012 refers to 2011/2012.

The trend line of dependent variable sales revenue (y), and independent variable variable fiscal yr (x) is expressed by,

$$Y = a + bx \dots\dots\dots\text{equation (i)}$$

We know that,

$$b = \frac{n \sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2}$$

$$a = \frac{\sum y}{n} - b \cdot \frac{\sum x}{n}$$

Now,

$$b = \frac{6 \times 69354.78 - 3 \times 99087.60}{19.00}$$

$$6 \times 19 - (3)^2$$

$$= 1132.06$$

Again,

$$a = \frac{99087.60}{6} - 1132.06 \times \frac{3}{6}$$

$$= 15948.57$$

Now, substituting the value of a and b in equation (i), we get

$$Y = 15948.57 + 1132.06 x$$

The above trend line shows the sales revenue for the next year. Thus, estimation of the sales revenue for the coming three yrs are:

1. For 2013 (2012/13),

$$x = X - 2009$$

$$= 2013 - 2009$$

$$= 4$$

and,

$$Y = 15948.57 + 1132.06 x$$

$$= 15948.57 + 1132.06 * 4$$

$$= 20476.81$$

2. For 2014 (2013/14),

$$x = X - 2009$$

$$= 2014 - 2009$$

$$= 5$$

and,

$$\begin{aligned} Y &= 15948.57 + 1132.06 x \\ &= 15948.57 + 1132.06 * 5 \\ &= 21608.87 \end{aligned}$$

3. For 2015 (2014/15),

$$\begin{aligned} x &= X - 2009 \\ &= 2015 - 2009 \\ &= 6 \end{aligned}$$

and,

$$\begin{aligned} Y &= 15948.57 + 1132.06 x \\ &= 15948.57 + 1132.06 * 6 \\ &= 22740.93 \end{aligned}$$

The above computation of future sales revenue can be shown with following trend line:

Table: 4.14
Estimated Sales Revenue Using Trend Analysis

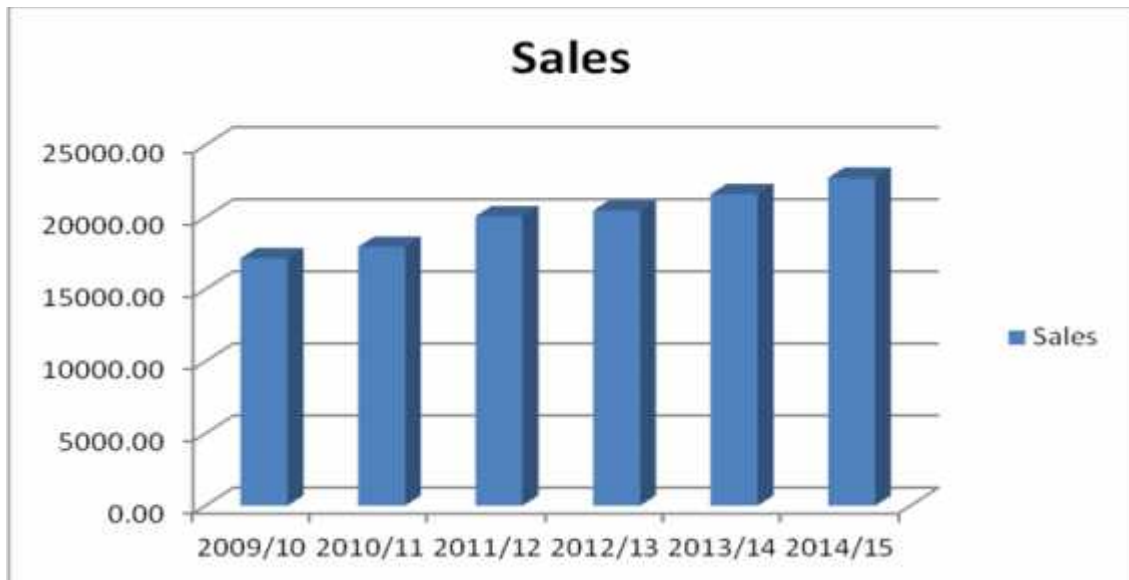
NRs. In Million

Fiscal Year	Sales Revenue
2009/10	17164.60
2010/11	17946.82
2011/12	20079.13
2012/13*	20476.81
2013/14*	21608.87
2014/15*	22740.93

* estimated sales revenue using Trend Analysis

Figure: 4.11

Sales Revenue (NRs. In Million)



From above trend line, it is observed that sales revenue is in increasing trend in the future as well. But the most important fact we should be acknowledged about is, the above trend line is possible only when there is no any risk factors exists. Risk factors refers load shedding, strike etc. If there exists such a risk factors, then the above calculated future sales revenue will be difficult to achieve. In the present scenerio, we are suffering from 16hr of load shedding daily. In this context, it is very hard to get above mentioned revenue.

Thus, we can say that, if all the risk factors do not exists then above trend of sales revenue can be achieved.

4.4.3 Estimation of Cash and Bank Balance Using Regression Analysis

Table: 4.15
Regression Analysis of Cash and Bank Balance

NRs. In Million

Fiscal Year	Sales (X)	Cash & Bank Balance (Y)	d1 = X - 17164.60	d2 = Y - 1244.65	d1 * d2	(d1) ²	(d2) ²
2007	14449.73	1447.58	-2714.87	202.93	-550928.57	7370519.12	41180.58
2008	15041.39	1337.15	-2123.21	92.50	-196396.93	4508020.70	8556.25
2009	14405.93	1724.76	-2758.67	480.11	-1324465.05	7610260.17	230505.61
2010	17164.60	1244.65	0.00	0.00	0.00	0.00	0.00
2011	17946.82	2016.58	782.22	771.93	603819.08	611868.13	595875.92
2012	20079.13	1636.65	2914.53	392.00	1142495.76	8494485.12	153664.00
n = 6			d1 = -3900.00	d2 = 1939.47	d1 * d2 = -325475.70	(d1)² = 28595153.24	(d2)² = 1029782.37

Here, no. of yr (n) = 6 , a = 17164.60 , b = 1244.65

$$\begin{aligned} \text{Mean, } \bar{x} &= a + \frac{d1}{n} \\ &= 17164.60 + \frac{(-3900.00)}{6} \\ &= 16514.60 \end{aligned}$$

$$\begin{aligned} \text{Mean, } \bar{y} &= b + \frac{d2}{n} \\ &= 1244.65 + \frac{1939.47}{6} \\ &= 1567.89 \end{aligned}$$

$$b_{yx} = \frac{n \cdot d1d2 - d1 \cdot d2}{n \cdot d1^2 - (d1)^2}$$

$$= \frac{6 \times (-325475.70) - (-3900.00 \times 1939.47)}{6 \times 28595153.24 - (-3900.00)^2}$$

$$= 0.04$$

now, we know that,

Regression equation on y on x is,

$$y - \bar{y} = by_x (x - \bar{x})$$

$$y - 1567.89 = 0.04 (x - 16514.60)$$

$$y = 0.04 x + 907.31$$

From this equation we can forecast the cash and bank balance based on sales as follows:

1. For 2012/13,

$$x = \text{sales} = 20476.81 \text{ (From calculation of estimation of sales revenue)}$$

$$y = 0.04 x + 907.31$$

$$= 0.04 * 20476.81 + 907.31$$

$$= 1726.38$$

2. For 2013/14,

$$x = \text{sales} = 21608.87 \text{ (From calculation of estimation of sales revenue)}$$

$$y = 0.04 x + 907.31$$

$$= 0.04 * 21608.87 + 907.31$$

$$= 1771.66$$

3. For 2014/15,

$$x = \text{sales} = 22740.93 \text{ (From calculation of estimation of sales revenue)}$$

$$y = 0.04 x + 907.31$$

$$= 0.04 * 22740.93 + 907.31$$

$$= 1816.94$$

It is shown with the following trend line:

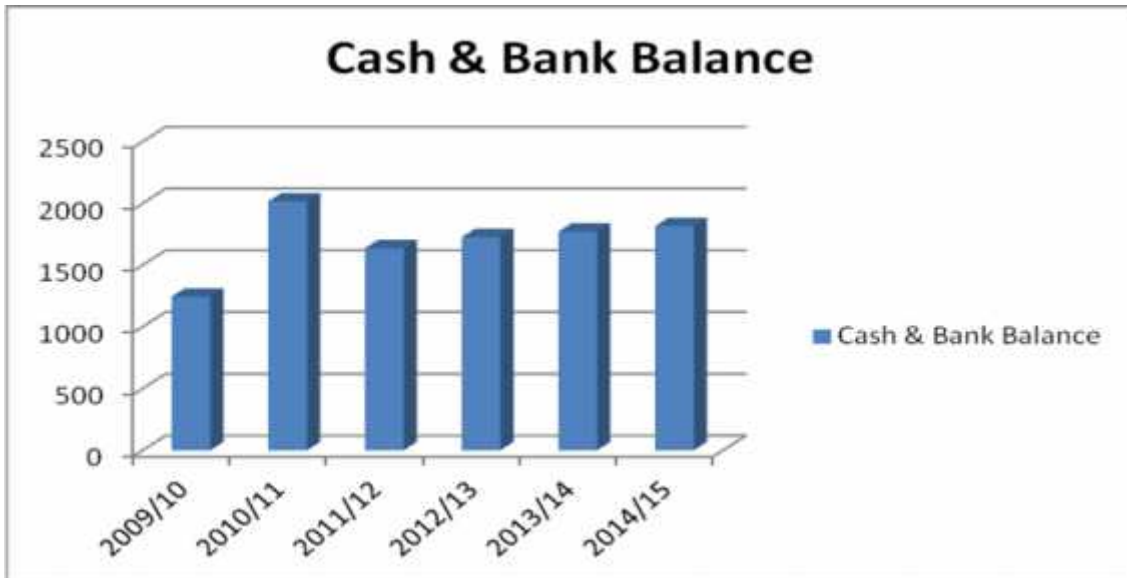
Table: 4.16
Estimated Cash & Bank Balance Using Regression Analysis

NRs. In Million

Fiscal Year	Cash & Bank Balance
2009/10	1244.65
2010/11	2016.58
2011/12	1636.65
2012/13*	1726.38
2013/14*	1771.66
2014/15*	1816.94

* estimated cash & bank balance under regression analysis

Figure: 4.12
Cash and Bank Balance (NRs. In Million)



From the above figure, it is noted that cash and bank balance in FY 2012/13 would be Rs. 1726.38 million, in FY 2013/14 would be Rs. 1771.66 million and in FY 2014/15 it would be Rs. 1816.94 million. It signifies, more cash is going to be generated in the future from financing activities the thing that is to be noted is above value are determined without considering the risk factors. It excludes all the risk factors. Thus, if there exists any risk factors then above ascertained value might be changed.

4.4.4 Research Hypothesis

Testing of hypothesis is one of the most important aspects of the theory of decision making. It consists of decision rules required for drawing probabilistic inferences about the population parameters. Hypotheses are an assumption that is made about the population parameter and then its validity is tested. The act of verification involves testing the validity of such assumption which when undertaken on the basis of sample evidence is called statistical hypothesis or testing of hypotheses or test of significance. In this section, it is best tried to create some hypothesis regarding cash flows and earning, so as it is tested.

The following research hypotheses have been formulated in relation to the research questions.

4.4.4.1 Research Hypothesis 1

Past earnings have significant predictive power in predicting future cash flows of Nepal Electricity Authority.

Table: 4.17
Testing of Research Hyposthesis-1

NRs. In Million

Fiscal Year	Sales Revenue (X)	x = X - 17164.60	x²
2007/08	15041.39	-2123.21	4508020.70
2008/09	14405.93	-2758.67	7610260.17
2009/10	17164.60	0.00	0.00
2010/11	17946.82	782.22	611868.13
2011/12	20079.13	2914.53	8494485.12
n = 5		x = -1185.13	x² = 21224634.12

Here, n= 5

$\mu = 20476.13$ (estimation of sales revenue for 2012/13 as calculated in Table 16)

$\bar{X} = 20079.13$ (taken from income statement of NEA for 2011/12)

$$\begin{aligned} \exists &= \left[\left\{ \frac{1}{n-1} * \left(\sum x^2 - \frac{(\sum x)^2}{n} \right) \right\} * \frac{(n-1)}{n} \right] \\ &= \left[\left\{ \frac{1}{4} * \left(21224634.12 - \frac{(-1185.13)^2}{5} \right) \right\} * \frac{4}{5} \right] \\ &= 2046.64 \end{aligned}$$

Where,

n = sample size

μ = population mean

\bar{X} = sample mean

\exists = standard deviation of population

Now,

Ho: $\mu = 20476.13$, that is population mean has significant value. In other words, there is no significant different between populations mean (derived from past earning) and sample mean. i.e. Past earnings have significant predictive power in analyzing cash flows of Nepal Electricity Authority.

H1: $\mu \neq 20476.13$ that is population mean is not equal to 20476.13. In other words, there is significant different between populations mean (derived from past earning) and sample mean. i.e. Past earnings doesn't have significant predictive power in analyzing cash flows of Nepal Electricity Authority

Test statistic: Under Ho, the test statistic is

$$t = \frac{\bar{X} - \mu}{\frac{\Xi}{(n-1)}} = \frac{20079.13 - 20476.13}{\frac{2046.64}{4}} = -0.39$$

Hence, $|t| = 0.39$

Degree of freedom (d.f) = $n-1 = 5-1 = 4$

The tabulated value of t for 4 d.f. for two tailed test at 5% level of significant is 2.776. Thus, the tabulated value $|t| = 2.776$

Decision:

Since calculated value of t i.e. $|t| = 0.39$ is lesser than tabulated value of t i.e. $t = 2.776$, it is not significant and Ho is accepted. It means population mean has significant value. In other words, there is no significant different between populations mean (derived from past earning) and sample mean. i.e. Past earnings have significant predictive power in analyzing cash flows of Nepal Electricity Authority.

4.4.4.2 Research Hypothesis 2

Past cash flows are significant predictors of future cash flows of Nepal Electricity Authority.

Table: 4.18
Testing of Research Hyposthesis-2

NRs. In Million			
Fiscal Year	CFOA (X)	x = X - 2605.95	x²
2007/08	-2516.89	-5122.84	26243489.67
2008/09	-31965.97	-34571.92	1195217652.49
2009/10	-2605.95	-5211.90	27163901.61
2010/11	-6680.59	-9286.54	86239825.17
2011/12	885.43	-1720.52	2960189.07
n = 5		x = -55913.72	x² = 1337825058.00

Here, n= 5,

$\mu = 942.72$ (estimated by regression equation for 2012/13 {0.04*885.43+907.31})

$\bar{X} = 885.43$ (taken from CFOA of NEA for 2011/12)

$$\begin{aligned} \exists &= \left[\left\{ \frac{1}{n-1} * \left(\sum x^2 - \frac{(\sum x)^2}{n} \right) \right\} * (n-1) \right] \\ &= \left[\left\{ \frac{1}{4} * \left(1337825058 - \frac{(-55913.72)^2}{5} \right) \right\} * \frac{4}{5} \right] \\ &= 11937.81 \end{aligned}$$

Where,

n = sample size

μ = mean of population (Budgeted)

\bar{X} =sample mean

\exists = standard deviation of population

Now, $H_0: \mu = 942.72$, that is population mean has significant value. In other words, there is no significant different between populations mean (derived from cash flows) and sample mean. i.e. Past cash flows have significant predictive power in analyzing cash flows of Nepal Electricity Authority.

$H_1: \mu \neq 942.72$ that is population mean is not equal to 942.72. In other words, there is significant different between populations mean (derived from past cash flows) and sample mean. i.e. Past cash flows doesn't have significant predictive power in analyzing cash flows of Nepal Electricity Authority

Test statistic: Under H_0 , the test statistic is

$$t = \frac{\bar{X} - \mu}{\frac{\exists}{(n-1)}} = \frac{885.43 - 942.72}{\frac{11937.81}{4}} = -0.01$$

Hence, $|t| = 0.01$

Degree of Freedom (d. f) = $n-1 = 5-1 = 4$

The tabulated value of t for d.f. 4 for two tailed test at 5% level of significant is 2.776. Thus, the tabulated value $t = 2.776$

Decision:

Since calculated value of t i.e. $|t| = 0.01$ is lesser than tabulated value of t i.e. $t = 2.776$, it is not significant and H_0 is accepted. It means population mean has significant value. In other words, there is no significant different between populations mean (derived from cash flows) and sample mean. i.e. Past cash flows have significant predictive power.

4.5 Major Findings of the Study

The major findings of the study are highlighted as below:

-) NEA has low production of electricity since the consumption of electricity is increasing day by day. Low production can be due to decrease in power purchase, investment in electricity, capital work in progress and mainly lack of water resources in the production area to produce the electricity.
-) NEA has positive and good collection of sales revenue. If proper management and control of distribution expenses, administrative expenses and other expenses, NEA can generate profit in every fiscal year. For that NEA should discourage unwanted expenses and should increase the investment for the long term future. Also NEA can get loan facility easily to expand production capacity as per the growth of consumer.
-) NEA has very much fluctuation in total surplus in fiscal year. It is because of low purchase of investment, low expenses made in distribution and administrative expenses and cost of sales is also low comparing to the previous fiscal years.
-) NEA has maintained the negative CFOA and have excessive amount of non-operating expenses. That is why NEA is facing loss in each year. NEA fails to maintain increasing trend of CFOA. The reason behind this is NEA fails to obtain profit every year and doesn't give much importance to current assets and liabilities. NEA have negative cash inflows which reflects that NEA cannot pay the debts and invest in a hydropower.
-) NEA have purchased a fixed assets and increased investment in every fiscal year. This imposes that NEA have focused on enhancement of future growth opportunities and is able to expand its services if proper planning for purpose/ sale of fixed assets and investment plans are made.
-) NEA has positive CFFA. There is increase and decrease trend of CFFA. The reason behind decrease in CFFA can be redemption of preference shares/

debentures and repayment of loan. NEA have not issued preference shares yet, so should plan for this and should issue more and more debentures of electricity every year for the positive CFFA. The proportionate of borrowing of loan of NEA is higher than the repayment of loan. If NEA issues the preference shares, this would be low.

-) Net Cash Flow of NEA have decreased in 2009/10 with heavy amount. It was due to the loss suffered by the enterprise.
-) NEA is holding cash inconsistently and utilizing it not properly. There is very fluctuation in handling the cash which might not be in the favor of an enterprise.
-) Cash Turnover Ratio of NEA is fluctuating in every fiscal year. This shows that NEA is unable to convert sales into cash as expected and also NEA is inefficient to manage its cash. NEA has weak cash management policy.
-) Current Ratio of NEA is in between 0.34:1 to 0.40:1, this reflects that NEA has difficulty in meeting its current obligation and shows the weak solvency position.
-) Account Receivable Turnover Ratio of NEA is in between 2.61 times to 3.01 times. It is quite satisfactory but NEA should properly communicate information regarding credit days extended to all customers. The cash collection from the customer shows that NEA is developing its efficiency in turning the debtors into cash.
-) Inventory Turnover Ratio of NEA is in decreasing trend. This shows that NEA has maintained sound inventory management and should focus on the inventory management policies.
-) NEA is in loss in every fiscal year. It indicates that NEA is very poor in converting sales revenue into profit from which we can say that NEA has poor cash management policy.

CHAPTER - V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The study is based on cash management of NEA. NEA is one of the largest public organization of Nepal. It has been supplying electricity continually and it has been making significant contribution to the economic development of the country. NEA has been trying to improve itself as a capable institution in copying with the new policy guidelines of the elected government by adopting itself within the framework of nepal government's objectives aimed at liberalization of economy and a transition to a market oriented economy based on competition and efficiency. For over decades, NEA has been the only supplier of electricity in the country. It has monopoly in the market.

Though Nepal is rich in water resources, we are still facing the problem of load shedding. According to the researchers, engineers, the potentiality of hydro-electric of Nepal is 83,000 M.W. but only about 544 M.W. is generated. In winter season, even 544 M.W. is difficult to generate. There is consensus that development of its abundant water resources could largely benefit the nation.

For effective performance, NEA needs to generate sufficient amount of cash which is considered as the lifeblood of business enterprise. Without cash no activities can take place. So the business must have an adequate amount of cash to operate. It is also important to know the cash position of the firm and to know the cash position, it is important to analyze cash flow of the firm. Cash flow analysis provides useful information to evaluate a firm's ability to have sufficient cash in both short term and long term basis. It is the analysis of events and

transactions that affects the cash position of company. Cash flow analysis is done through statement of cash flows. The cash flow statement is the accounting report that provides information about cash receipts, cash payments and net change in cash balances during the period. The main objective of the cash flow statement is to convey information about the cash receipts and cash payments of an enterprise during the accounting period, It is important and useful to every firm, short and long term creditors, investors and management.

The balance sheet, income statement and retained earnings statement do not always show the whole financial condition of a company. The balance sheets show the variety of assets owned by a company and the manner in which they were financed at the end of period but the source of activity related to those items during the period are not provided. Also profit in the income statement does not reflect an increase in cash. Moreover, the profitability and financing issues are reported separately on income statements and balance sheets respectively. This causes misleading and confusing results to users. That is why, it is important to prepare cash flow statement to ascertain true and fair figure of cash inflow and outflow and important to analyse it to find out the actual cash position of the organization.

For the purpose of conducting this study, data covering from fiscal year 2007/08 to 2011/12 are used. Cash flow statements for every fiscal year are prepared to find out cash inflow and outflow from operating, investing and financing activities. From cash flow statement, it is observed that net cash from operating and financing activities are positive and due to more investment in plant and equipment, net cash from investing activities are negative. Furthermore various cash flow ratios and statistical tools are used to evaluate cash. The cash and bank balances of NEA was not satisfactory during the study period. The enterprises

was not able to generate sufficient cash inflows from its operating activities. The amount of net cash provided by operation is not adequate to support the planned business operation and capital expenditure. Due to poor cash inflows from operating activities, the company has depended on long-term borrowing and unsecured borrowing. The company has paid huge amount of interest due to more long-term debt. So, the company needs to change its strategies and replace its high interest rate of debt by lower interest rate of debt. On the other hand it can call the money by issuing shares to the public which will reduce debt and interest. Due to inefficiency of generating sufficient operating cash flow and more investing in fixed assets with a lower rate of return, it is unable to pay both the short term and long-term debt. During study period, it is observed that NEA has been facing many problems such as more amount of account receivable, less utilization of capacity, power loss etc. which are the major cause to reduce its profit. If it can be properly controlled and managed, then there would be increase in its profit.

5.2 Conclusions

After analyzing in detail the cash flow of NEA, there are various conclusions reflected and highlighted. Though income statement of NEA shows loss figure, cash flow statement shows, NEA has been achieving operating profit. It is because income statement includes non operating expenses while cash flow statement excludes such expenses. NEA has maintained positive CFOA but it was fluctuating. NEA has invested its huge amount of cash obtained from operating and financing activities in purchasing property, plant and equipment. NEA has high fixed assets but the return from it is very low. Proportion of borrowing of loan by NEA is very high than repayment of borrowing of loan. So, there is increasing in cash inflow from CFFA and that is why NEA has been paying huge amount of interest on long term debt.

NEA is holding cash inconsistently and utilizing it not properly. There was very fluctuation in handling the cash which might not be in the favor of an enterprise. NEA is not able to generate adequate amount of cash from operating activities to pay its total debt but to some extent it is being able to improve its cash position. NEA is very much dependent on Foreign and Nepal Government Loans to pay its local debt and that is why its long term loan has been increasing.

NEA is not fully able to convert its revenue to cash. Moreover, it is not consistent in generating cash from revenue. Non operating expenses has been increasing every year. NEA was unable to use its resources to the fullest NEA has a poor management and strategic policy. Total assets has been increasing but CFOA is not increasing proportionately which indicates return from its total assets is not satisfactory. NEA has ability to pay short-term debt to some extent but it was not satisfactory due to low liquidity ratio and it was not consistent in increasing the cash flow liquidity ratio.

Electricity leakage, theft and wastage is one of the remarkable problem of NEA which reduces the profit earning capacity of the authority. The accumulated amounts of account receivable which is increasing year by year denotes the inefficiency of the authority to collect its revenue in time. Increasing trend of cost in each fiscal year is another remarkable point for NEA. It hasn't adopted the cost control measures. The company is not holding optimum level of cash balance at the end of each year. Shortage of cash provides difficulties in operation of the services and excessive cash contribute nothing to the profit since idle cash earns nothing. NEA fails to analysis its strengths, weakness, opportunities and threat deeply though it has been facing competition from independent power producers and it has not yet made assessment of its present prospects and future potentiality seriously. NEA doesn't maintain long run

planning and policy regarding financing and investment. That is why, long-term debt is increasing and fails to invest where there would be high return. NEA has monopoly in the market and thus it has sole power in generation and sales of electricity but unstable government and political interference affect NEA too badly. Past cash flows and earnings of NEA has significant predictive power in analyzing future cash flows.

5.3 Recommendations

After the detail analysis of cash flow of NEA, the following suggestions are recommended:

-) The balance sheet and income statement do not always show the whole financial condition of a company.. That is why, it is important to prepare cash flow statement to ascertain true and fair figure of cash inflow and outflow.
-) NEA must restructure its capital structure and should emphasize the internal financing to minimize the burden of high interest of long term loans. For this, it can issue shares.
-) Electricity loss is increasing each year. Thus leakage of electricity should be controlled. For this, meter reading and meter joining system should be improved. The most important aspect is to motivate its employees who engaged in transmission and distribution line to control the leakage. Rules and regulations should be strictly implemented to control the leakage and those staffs who are themselves engaged in encouraging power leakage should be investigated and strictly be demoralized.

-) The liquidity position of NEA is not satisfactory. So it should be corrected by increasing current assets and decreasing current liabilities.
-) NEA should develop efficient system of revenue collection. It should make well defined rules and regulations in regard of revenue collection and if the customer of any category delays or denies, it should be charged penalty. In revenue collection, any kind of pressure and biases should strictly be undermined. Huge amount of account receivable especially of Municipality, Metropolis, Sub-Metropolis consumed in street lights should be managed and receivable can be collected by imposing its expenditures to the neighbouring community people.
-) NEA should stress on efficient utilization of fixed assets. Amount should not be tied up haphazardly in plant and high cost assets. For this, NEA should develop and apply capital budgeting technique more effectively. The sales revenue is to be generated in comparison with the amount tied up in assets.
-) The installed capacity of NEA should be utilized fully. If it utilizes its full capacity, the operating expenses will down.
-) NEA should have an efficient management system to have control over costs. It must maintain fixed cost to minimum standard level.
-) NEA should follow tight collection policy to collect account receivable in time. Collection policy should not be influenced by political pressures.
-) The enterprise has earned low return from investing activities. Before making decision on capital investment, the company should evaluate the

- alternative projects and choose that investment alternative which will have more expected cash flow in future.
-) The company has excessive stock. So it is better to keep the optimum level of inventory to reduce the cost associated with inventory management or turn over inventory as quickly as possible, avoiding stock-outs that may result in a loss of sales.
 -) The company should accurately forecast the amount and timing of cash flows so that heat borrowings can be minimized.
 -) NEA is suffering from loss according to income statement and it is due to excess amount of non operating expenses, non performing assets. NEA should reduce such items.
 -) The company had held unstable cash balance during the study period which indicated the company had not maintained optimum cash balance. Thus, NEA should held cash balance according to the requirement of the company and should invest in liquid assets instead of cash saving.
 -) Investing activities were financed by raising secured long-term. So, The company should operate in such a way that all the investing activities should be able to cover long-term financing.
 -) NEA should maintain optimum level of staff. It reduce unnecessary overstaffing cost and help to increase its efficiency and revenue.
 -) NEA is also recommended to prepare monthly budgets regarding sales, production, cash alongside cash flow statement.

BIBLIOGRAPHY

Books:

Bajracharya, B.C. (2004), “*Business Statistics and Mathematics*”, Kathmandu: M.K. Publishers and Distributors.

Bajracharya, S. & Bhattarai, R. (2005), “*Corporate Financial Management Theory and Practice*”, Kathmandu: Buddha Academic Publishers & Distributers Pvt. Ltd.

Bhattarai, R. (2005), “*Investment*”, (2nd ed.) Kathmandu: Buddha Academic Publishers & Distributors Pvt. Ltd.

Bishnu Katuwal & Arun K.Yadav (2065), “*Statistical Methods*”, Putalisadak-31, Kathmandu: Dhaulagiri Books and Stationary

Dangol, R.M. (2000), “*Accounting for Financial Analysis and Planning*”, Kathmandu: Taleju Prakasan.

Dr. Manohar Krishna Shrestha (2067), “*Working Capital Management*”, Putalisadak-31, Kathmandu: Asmita Books Publishers & Distributors

Francis, J.C. (1990), “*Management of Investment*”, New York: McGraw Hill Series

Gitman, L.J. (1988), “*Principle of Managerial Finance*”, (5th ed.) New York: San Diego State University, Harper Collins Publishers.

Gitman, L.J. & Jochnk, R. (1990), “*Fundamental of Investment*”, (4th ed.). New York: Harper & Row Publishers.

Glenn A, Werch, Ronald W.Hilton, Paul N. Gorden (2002), “*Cash Management*”, New York: McGraw Hill Series.

Jones, C.P. (1988), “*Investment: Analysis & Management*”, (2nd ed.) New York: John Wiley & Sons. Inc.

James L Van Horn and John, Wachowicz, J.M (2000), “*Fundamentals of Financial Management*”, (10th ed.), Prentice Hall, India

Khan, M.Y and Jain P.K (1993), “*Management Accounting*”, New Delhi, Tata Mc Graw Hill, Publishing Co Ltd.

Khan, M.Y and Jain P.K (2006), “*Cost Accounting & Financial Management*”, (2nd ed.), New Delhi, Tata Mc Graw Hill, Publishing Co Ltd.

- Kothari, C.R (1994)**, “*Research Methodology, Methods and Analysis*”, New Delhi, Vishwa Prakashan.
- Miller, M.H & Orr D. (1996)**, “*Model of the demand for Money in Firm, Quarterly Journal at Economics*”, UK Oxford University, Press LXY
- Pandey, I.M (1999)**, “*Financial Management*” (6th edition.), New Delhi, India, Vikash Publishing House
- Pradhan, R.S. (1994)**, “*Financial Management and Practices in Nepal*”, Kathmandu: Nepal Bank Patrika, Baishak Masanta, 2051.
- Ratna Man Dangol & Jeetndera Dangol (2065)**, “*Management Accounting*”, Kathmandu: Taleju Prakashan, Chittadhar Marg
- Rajan B. Paudel, Ph.D Keshar J Baral, Ph.D Rishi Raj Gautam, Gyan B.Dahal, Surya Rana (2062)**, “*Fundamentals of Financial Management*”, Putalisadak-31, Kathmandu: Asmita Books Publishers & Distributors
- Sharpe, F.W. Alexander J.G. (1995)**, “*Investment*” New Delhi: Prentice Hall of India Pvt. Ltd.
- Singh, P. (1994)**, “*Investment Management*” Bombay: Himalayan Publishing House Ltd.
- Shrestha M.K (1982)**, “*Financial Management, Theory and Practice*”, Kathmandu: Khanal Books Prakashan
- Weston J.F. and Brigham E.F (1981)**, “*Managerial Finance*”, San Fransciso, Tokyo, The Dryden Press
- Wolff H.R and Pant P.R (2005)**, “*Social Science Research & Thesis Writing*”, New York: McGraw Hill Series.

Journals, Periodicals & Official Publications:

- Ardhabarshik Patrika**-Vidyut-Barsha23, Anka 1, 2069 Bhadra
- Nepal Electricity Authority** – A year in review- Fiscal Year 2011/2012, August 2012 (Bhadra 2069), Durbar Marg, Kathmandu, Nepal.
- Nepal Electricity Authority Act, 2041 B.S.**
- NRB (2006/07 to 2010/2011)**. *Annual Reports*. Kathmandu: Nepal Ratra Bank..
- Review of Economic Survey (2007/08 to 2011/12)**- Ministry of Finance, Kathmandu, Nepal

Unpublished Thesis:

Krishna, P (2011), “*A study on financial performance of NEA*”, Shanker Dev Campus, Kathmandu, Nepal

Kunwar, Naresh (2000), “*A Study on Working Capital Management of Pharmaceutical Industry of Nepal with special reference to Royal Drug Limited*”, Shanker Dev Campus, Kathmandu, Nepal

Pradhan, Bijaya (1997), “*A Case Study of Cash Management of Salt Trading Corporation Ltd*” “ Shanker Dev Campus, Kathmandu, Nepal

Pradhan, Manish Nath (Feb 2010), “*A Study on Cash Management of NEA and Dabur Nepal Pvt Ltd*”, Shanker Dev Campus, Kathmandu, Nepal

Sainju, Sabin Prakash (2003), “*Cash Management in Nepalese Public Enterprise, a case study of Royal Drug Limited*”, Shanker Dev Campus, Kathmandu, Nepal

Sharma, Ajaya (Sept 2010), “*A Case Study on Cash Management in NEA*”, Shanker Dev Campus, Kathmandu, Nepal

Website:

www.nea.org.np

www.nrb.org.np

APPENDICES

Appendix –I

Cash Budget of Nepal Electricity Authority From 2007/08 to 2011/2012					
NRs. In Million					
Particulars	Years				
	2007/08	2008/09	2009/10	2010/11	2011/12
Opening Cash Balance	1447.58	1337.15	1724.76	1244.65	2016.55
Add: Receipts					
Cash Sales	15041.39	14405.93	17164.60	17946.82	20079.13
Advance Cash	2319.72	2495.13	4585.60	2976.82	3025.83
Dividend, Interest & Other Gain	934.66	1601.67	1188.27	1382.94	1349.74
Issue of Debentures for Electricity*	0.00	50000.00	0.00	10000.00	0.00
Total Receipts	19743.35	69839.88	24663.23	33551.23	26471.25
Less: Payments					
Purchase of Property, Plant & Equipment	248.52	29208.22	1867.13	1619.84	1395.00
Purchase of Investment	738.14	519.73	982.14	1733.01	153.00
Administrative Expenses	2110.01	2575.09	3091.21	3004.18	3670.68
Distribution Expenses	683.98	651.69	789.52	866.74	1009.38
Cost of Sales	9530.83	9935.27	12475.34	12624.02	14883.93
Total Payments	13311.48	42890.00	19205.34	19847.79	21111.99
Surplus / Deficit	6431.87	26949.88	5457.89	13703.44	5359.26
Add: Loan Received	1140.00	250.00	1280.00	790.00	2000.00
Less: Loan Repayment*	3960.35	22982.57	1824.59	8882.88	1942.61
Less: Interest Paid	2274.37	2492.55	3668.65	3594.01	3780.00
Closing Cash Balance	1337.15	1724.76	1244.65	2016.55	1636.65

Note : * Balancing Figure

Appendix-II

Cash Flow Statement of Nepal Electricity Authority From 2007/08 to 2011/2012					
NRs. In Million					
Particulars	Years				
	2007/08	2008/09	2009/10	2010/11	2011/12
A. Cash Flow From Operating Activities (CFOA)					
Provision for Dividend	0.00	0.00	0.00	0.00	0.00
Interim Dividend	0.00	0.00	0.00	0.00	0.00
(a) Internal	0.00	0.00	0.00	0.00	0.00
(b) Sale to India	0.00	0.00	0.00	0.00	0.00
Profit Transfer to Balance Sheet	8985.61	14098.83	21022.36	0.00	8550.76
	-	-	-		-
Net Profit / Loss for the year	8985.61	14098.83	21022.36	0.00	8550.76
Add : Non Cash and Non Operating Expenses:					
Depreciation for the year	1895.17	2361.20	2902.92	3031.33	3105.00
Loss on Foreign Exchange	484.10	813.96	28.67	85.01	897.24
Provision for Losses on Property, Plant and Equipment*	7106.48	16603.59	22486.75	15968.50	6757.81
Differed Revenue Expenditure Written Off	108.51	96.68	112.36	323.68	0.00
Less : Non Operating Gain:					
Gain on Foreign Exchange	0.00	0.00	0.00	0.00	0.00
		-		-	
Funds Flow From Operation (FFO)	608.65	27430.58	4508.34	12528.48	2209.29
Add : Decrease in Working Capital Except Cash (item wise)					
Inventory	0.00	0.00	0.00	0.00	0.00
Debtors	0.00	867.06	0.00	0.00	199.06
Prepaid / Advance Cash	0.00	0.00	0.00	1608.78	0.00
Creditors	0.00	0.00	0.00	5083.50	0.00
Less : Increase in Working Capital Except Cash (item wise)					
Inventory	301.68	358.99	272.87	70.94	41.21
Debtors	569.67	0.00	1243.72	773.45	0.00
Prepaid / Advance Cash	94.19	175.41	2090.47	0.00	49.01
Creditors	2160.00	4868.05	3507.23	0.00	1432.70
	-	-			
Cash Flow From Operating Activities (CFOA)	2516.89	31965.97	-2605.95	-6680.59	885.43
B. Cash Flow From Investing Activities (CFIA)					
Sale / Purchase of Property, Plant & Equipment	248.52	29208.22	1867.13	1619.84	1395.00

Sale / Purchase of Investment	738.14	519.73	982.14	1733.01	153.00
Sale / Purchase of Capital Work In Progress	6554.52	22149.25	3490.01	5791.56	909.25
Cash Flow From Investing Activities (CFIA)	7541.18	7578.70	6339.28	9144.41	2457.25
C. Cash Flow From Financing Activities (CFFA)					
Add: Issue of Shares / Debentures for Electricity	0.00	50000.00	0.00	10000.00	0.00
Add: Secured Long Term Loans Borrowed	1140.00	250.00	1280.00	790.00	2000.00
Less: Repayment of Borrowing	3960.35	22982.57	1824.59	8882.88	1942.61
Less: Interest Payment	2274.37	2492.55	3668.85	3599.01	3780.00
Cash Flow From Financing Activities (CFFA)	5094.72	24774.88	-4213.44	-1691.89	3722.61
Net Cash Increase / Decrease (A + B + C)	-70.43	387.61	-480.11	771.93	-379.93
Add: Opening Cash / Bank Balance	1447.58	1337.15	1724.76	1244.65	2016.58
Closing Cash / Bank Balance	1377.15	1724.76	1244.65	2016.58	1636.65

Note : * Balancing Figure

Appendix-III

Electricity Sales of NEA From 2007/08 To 2011/12					
	NRs. In Million				
Particulars	2007/08	2008/09	2009/10	2010/11	2011/12*
Domestic	931.35	908.67	1108.87	1169.31	1339.93
Non-Commercial	109.93	98.89	103.47	109.49	115.68
Commercial	154.38	146.29	187.12	204.03	240.97
Industrial	901.09	845.68	960.43	1001.73	1123.92
Water Supply & Irrigation	46.86	48.14	55.98	82.80	64.58
Street Light	70.26	67.51	65.58	67.21	72.04
Temporary Supply	0.70	1.04	1.00	1.00	1.21
Transport	5.88	5.22	5.42	5.54	6.49
Temple	5.12	4.76	3.64	3.46	3.96
Community Sales	24.65	32.01	34.95	51.95	69.03
Total (Internal Sales)	2250.22	2158.21	2526.46	2696.52	3037.81
Bulk Supply (India)	60.10	46.38	75.07	31.10	4.12
Grand Total in GWh	2310.32	2204.59	2601.53	2727.62	3041.93

Note :- * Provisional Figures

Appendix-IV

Revenue Collection of NEA From 2007/08 To 2011/2012					
					NRs. In Million
Particulars	2007/8	2008/9	2009/10	2010/11	2011/12*
Domestic	6297.65	6100.65	7252.06	7602.34	8754.55
Non-Commercial	982.08	900.75	983.63	1020.51	1103.60
Commercial	1399.51	1384.67	1719.35	1910.28	2348.54
Industrial	5544.80	5264.33	6060.20	6378.25	7177.63
Water Supply & Irrigation	204.67	215.62	353.14	250.60	279.23
Street Light	467.31	445.96	333.90	433.42	458.68
Temporary Supply	10.51	12.20	13.58	13.98	16.46
Transport	33.70	26.95	27.58	27.78	31.93
Temple	26.38	24.41	28.16	26.51	20.03
Community Sales	64.22	70.10	170.90	189.28	240.77
Total (Internal Sales)	15030.83	14445.64	16942.50	17852.95	20431.42
Bulk Supply (India)	361.14	295.49	604.85	215.42	31.25
Gross Revenue	15391.97	14741.13	17547.35	18068.37	20462.67
Net Income from Other Services	584.18	1601.66	1188.27	1382.94	1349.74
Total Revenue	15976.15	16342.79	18735.62	19451.31	21812.41

Note :- * Provisional Figures