Study on Determination of Electricity Distribution Cost of Narayanganj PBS-1

A Thesis submitted in partial fulfillment of the requirements
For the Award of Degree of
Bachelor of Science in Electrical and Electronics Engineering

Submitted By
Md. Saroat Sabin Tonmoy
ID: 152-33-2614
&
Monir Hosain
ID: 152-33-2635

Supervised by
Professor Dr. M. Shamsul Alam
Dean
Faculty of Engineering

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
FACULTY OF ENGINEERING
DAFFODIL INTERNATIONAL UNIVERSITY

July-2019

Certification

This is to certify that this thesis entitled "**Study on Determination of Electricity Distribution Cost of NPBS -1"** is done by the following student under my direct supervision and this work has been carried out by him in the laboratories of the Department of Electrical and Electronic Engineering under the Faculty of Engineering of Daffodil International University in partial fulfillment of the requirements for the degree of Bachelor of Science in Electrical and Electronic Engineering. The presentation of the work was held on.

Signature of the Candidate

Md. Saroat Sabin Tonmoy

Name: Md. Saroat Sabin Tonmoy

ID: 152-33-2614

monir hosain

Name: Monir Hosain

ID: 152-33-2635

DECLARATION

The thesis entitled "**Study on Determination of Electricity Distribution Cost NPBS -1"** submitted by **Name: Md. Saroat Sabin Tonmoy**, **ID No: 152-33-2614 & Name: Monir Hosain, ID No: 152-33-2635**, Session: Summer-2015 has been accepted as satisfactory in partial fulfillment of the requirements for the degree of **Bachelor of Science in Electrical and Electronic Engineering**.

Countersigned

Dr. M. Shamsul Alam
Professor and Dean
Department of Electrical and Electronic Engineering
Faculty of Engineering
Daffodil International University

Dedicated to

My Parents
And
Teachers

CONTENTS

LIST OF TABLE

LIST OF FIGURES

List of Abbreviations

AGE	Administration & General Expenses
BERC	Bangladesh Electricity Regulatory Commission
BPDB	Bangladesh Power Development Board
CSE	Bangladesh Rural Electrification Board
DAE	Consumer Selling Expenses
DC	Depreciation & Amortization Expenses
DESCO	Distribution Cost
EC	Dhaka Electricity Supply Company
GDP	Energy Cost
GOB	Gross Domestic Product
HE	Government of Bangladesh
IE	Electrified Houses
IE	Import Energy
IPPs	Interest Expenses
KV	Independent Power Producers
KWh	Kilovolt
MU	Kilo Watt Hour (Unit)
MW	Million Units (Million KWh)
OME	Mega Watt
PBS	Operation & Maintenance Expenses
PDB	Palli Bidyut Samity
PF	Power Development Board
PGCB	Power Factor
REB	Power Grid Company of Bangladesh
REP	Rural Electrification Board
SL	Rural Electrification Program
TC	System Loss
TR	Total Supply Cost

ACKNOWLEDGEMENT

First we express our heartiest thanks and gratefulness to almighty Allah for his divine blessing makes our possible to complete this thesis successfully.

We feel grateful to and wish our profound our indebtedness to Supervisor **Professor Dr. M. Shamsul Alam, Dean, Faculty of Engineering**, Daffodil International University, Dhaka. Deep knowledge & keen interest of our supervisor in the field of Electric power influenced us to carry out this thesis. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice at all stage made it possible to complete this thesis.

We also want to convey our thankfulness to our thesis co-supervisor Md. Israfil **Lecturer**, **Department of EEE,** for his help, support and constant encouragement.

We would like to thank our teachers, entire course mate, thesis team members and friends in Daffodil International University, who took part in this discuss while completing the course work. Finally, we must acknowledge with due respect the constant support and patients of our parents.

Abstract

This thesis is on “Study on Determination of Electricity Distribution cost of Narayanganj PBS-1”.

Electricity distributions convey information on internal system operation to the actors involved. Electricity pricing is, then, of major importance both in liberalized and regulated systems. Most electricity consumers interact with the industry only through the price they pay for these service. Consequently, good tariff design reflects industry regulation as a whole and is the instrument used to provide consumers with the right signals. Day by day the challenge becomes really to harder to meet up power crisis, especially to meet up power crisis in rural area. So government formed Rural Electrification Board (REB) from Bangladesh Power Development Board (BPDB) to fulfill the power demand for village people. Tariff rate of electrical power depends on transmission and distribution cost. This thesis study on electricity import of Narayanganj PBS-1 consumer levels and their unit consumption in different season and cost associated electricity supply. This Paper also finds the total Distribution cost, Distribution cost per unit, supply cost, supply cost per unit, total revenue, total revenue per unit, energy purchase cost, system loss, surplus etc. This paper will also be helpful to get knowledge a stable electricity distribution structure to meet the future electricity crisis of Bangladesh. Electricity distribution cost is important issue in our country. Because electricity tariff rate and distribution cost are related with our economic growth. Although distribution costs are usually the largest part of the access tariff (or use of system charge), there is not a universally accepted methodology for distribution pricing. The earliest attempts at cost allocation conformed what is now known as the accounting approach, based on business accounting. In recent years, the proposals have focused on two approaches: the application of long-term marginal (or incremental) cost and the cost-causality principle. Although the former aims to achieve a better economic signal, because of the difficulties surrounding its implementation, the most usual solution applied in practice draws more heavily from the causality principle

Keywords: Rural Electrification, REP, BREB, PBS

CHAPTER 1
INTRODUCTION OF BREB AND NARAYANGANJ PBS-1

1.1 INTRODUCTION

Power is the Production and development genius on any country. Electricity is essential for maintaining the living standard and the necessary of development. In the 18th century developed countries have been using electricity commercially whereas in Bangladesh in a small-scale trading of the liquor city was introduced in 1901. Mr. Bolton, British citizen, switched on the first electricity in Ahsan Monjil on 7 December 1901. Generation power of different power plants all over country is evacuated and transmitted through PGCB'S integrated grid system. There is many distribution company, Such as DESCO, BREB, WZPDC, DPDC, BPDB. Reb is one of the branches of PBS. We will calculate the profit and loss of these PBS. We will also find out how to provide electricity at a lower cost, we will study it.

1.2 Bangladesh Rural Electrification Board (BREB)

Bangladesh Rural Electrification Board or BREB is the organization run by the Bangladesh government. It is distribute the most power in Bangladesh. It was established in 1977.It provides power to the rural areas of Bangladesh and builds electric lines and sub-station. A typical and organizational rural electrification program was not present in the 1970s.The electrification program operated by Bangladesh Power Development Board (BPDB), was mainly limited to the city the best in the center and their peripheries. At that time, the Government of Bangladesh engaged two consulting firms of USA to carry out a comprehensive feasibility study on rural electrification in Bangladesh. The Rural Electrification Board of Bangladesh has been serving rural households for more than 39 years. The board has rapidly expanded the rural electrical connection.

Table 1.1: BREB Total Generation, Demand, Scarcity (2008-2019)

Year	Generation MW	Increase % or Decrease %	Demand MW	Scarcity MW
2008	**4036.7**			
2009	**4296**	6.423	6066	1770
2010	**4698.50**	9.369	6454	1755.5
2011	**3728**	-20.655	6765	2939.5
2012	**4643**	24.543	7518	2781
2013	**4615**	-0.603	8349	3638
2014	**5666**	22.773	9268	3514
2015	**5695**	0.511	10283	4492
2016	**8733**	53.345	11405	2369
2017	**9414**	7.798	12644	3137
2018	**11573**	22.933	14014	2627
2019	**12,057 (June-19)**			

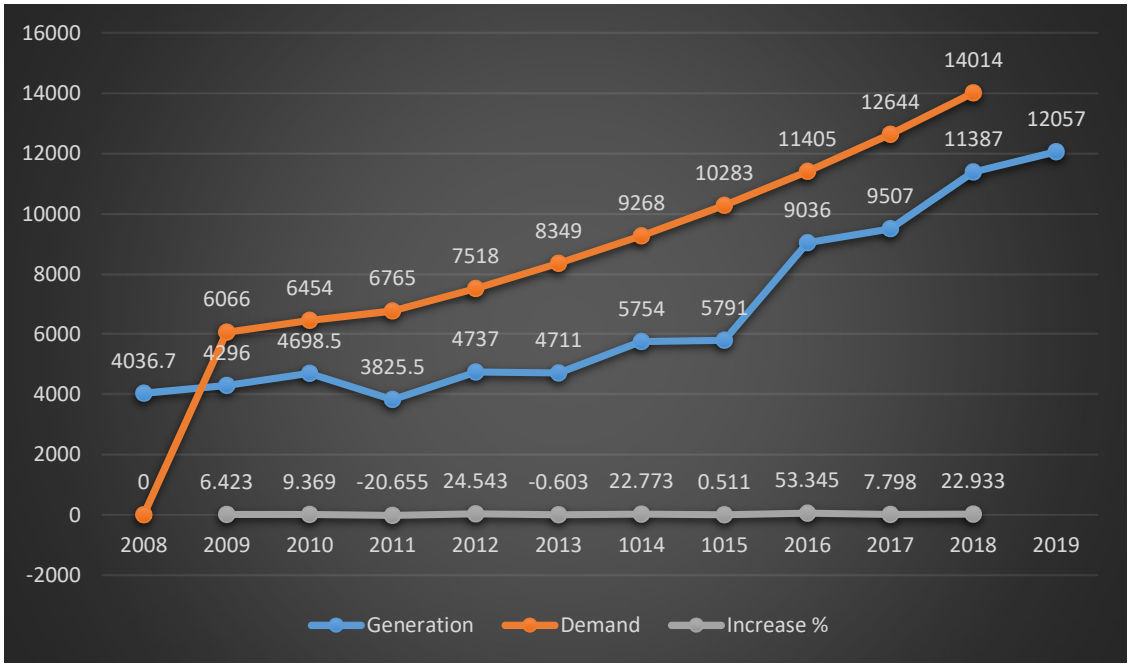


Fig 1.1 BREB Total Generation, Demand, Scarcity (2008-2019)

Fig: 1.1 Shown 2008 to 2019 demand of electricity, generation of electricity & Increase or Decrease. In 2008 Generation of electricity 4036.7 MW. In 2009 Generation of electricity 4036.7 MW and Demand of electricity 6066. In 2010 Generation of electricity 4296 MW and Demand of electricity 6454. In 2011 Generation of electricity 4698.50 MW and Demand of electricity 6765. In 2012 Generation of electricity 4036.7 MW and Demand of electricity 7518. In 2013 Generation of electricity **3728** MW and Demand of electricity 8349. In 2014 Generation of electricity 4643 MW and Demand of electricity 9268. In 2015 Generation of electricity 4615 MW and Demand of electricity 10283. In 2016 Generation of electricity 5666 MW and Demand of electricity 11405. In 2017 Generation of electricity 8733 MW and Demand of electricity 12644. In 2018 Generation of electricity 9414 MW and Demand of electricity 14014.

Table 1.2: Installed Capacity Derated capacity and of Power Plants as on January 2019

Fuel type	**Installed Capacity MW**	**Derated capacity MW**
Coal	524	444
Gas	9683	9246
HFO	4062	4060
HSD	2026	2002
Hydro	230	230
Imported	1160	1160
Total	17965	17422

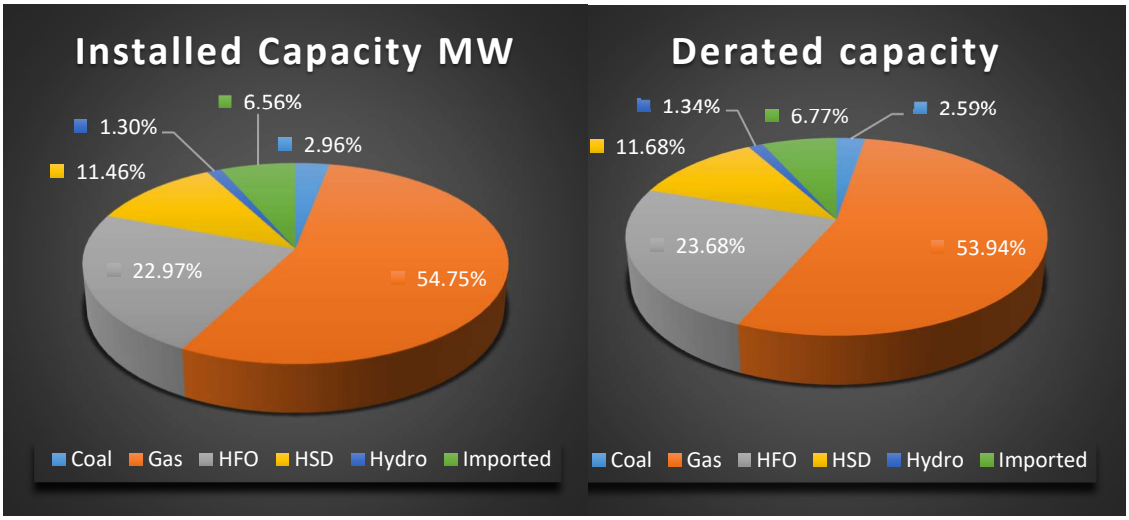


Fig 1.2: Installed Capacity Derated capacity and of Power Plants as on January 2019

Fig: 1.2 in shown installed capacity and derated capacity in January 2019 Coal, Gas, HFO, HSD, Hydro, Imported

1.3 PBS

Palli Bidyut Samity (PBS) is playing a vital role in Agricultural, Industrial and Socio-Economic Development of rural area. The rural electrification program, operated by the Rural Electrification Association, has made a progress in developing the socio-economic structure of the countryside in Bangladesh. There is 80 PBS in Our Bangladesh. By 2021, all the people of the country are brought into electrical service.

Table 1.3.1: Information of IPP Generation in REB

Sl. No.	Name of PBS	Name of Plant	Location	Plant Capacity (MW)
01	Dhaka PBS-l	Ashulia Power Plnt	Ashulia, Dhaka	11.00
02	Dhaka PBS-l	Ashulia Expansion Power Plnt	Ashulia, Dhaka	33.75
03	Narsingdi PBS-l	Madhabdi Power Plant	Madhabdi, Narsingdi	11.00
04	Narsingdi PBS-l	Madhabdi Expansion Power Plant	Madhabdi, Narsingdi	24.33
05	Comilla PBS-l	Chandia Power Plant	Chandia, comilla	11.00
06	Comilla PBS-l	Chandia Expansion Power Plant	Chandia, comilla	13.50
07	Narsingdi PBS-2	Narsingdi Power Plant	Dagoria, Narsingdi	22.00
08	Hobiganj PBS	Hobiganj Power Plant	Nansratpur, Habiganj	11.00
09	Sirajgonj PBS	Ullapara Power Plant	Ullapara, Sirajgonj	11.00
10	Feni PBS	Feni Power Plant	Mohipal, Feni	11.00
11	Mymensing PBS-2	Maona Power Plant	Maona, Gazipur	33.00
12	Narayanganj PBS	Rupganj Power Plant	Rupganj, Narayanganj	33.00

Table 1.3.2 Electricity Purchase from Captive/Small Power/Commercial Power Plant

Sl. No.	Captive/Small Power Plant's name	PBS's Name	Generation Capacity (MW)	Supply (MW)
01	Rahim Energy Ltd	Narayanganj PBS	30.4	Max-15 Min-05
02	United Generation & Distribution Co. Ltd.	Dhaka PBS-1	40	Max-25 Min-05
03	Everest Power Generation	Narayanganj PBS	25.17	Max-15 Min-05
04	Sakura Steel Ltd	Comilla PBS-2	4.20	Max-3.6 Min-2.6
05	Sahajahanullah Power Generation Ltd	Sylhet PBS-1	28.00	Max- Negotiable Min-10

Table 1.3.3: Consumer (By category):

1) LT-A (Domestic)	2,21,40,811
2) LT-B (Irrigation)	2,13,453
3) LT-C1 (Small Industry)	1,58,778
4) LT-C2 (Construction)	622
5) LT-D1 (Charitable Institute)	3,05,241
6) LT-D2 (Street Light)	21,179
7) LT-E (Commercial)	15,26,038
8) LT-T (Temporary)	722
9) MT-1 (Domestic)	107
10) MT-2 (Commercial)	939
11) MT-3 (Industry)	11,971
12) MT-4 (Construction)	85
13) MT-5 (General)	363
14) MT-6 (Temporary)	70
15) HT-1 (General)	7
16) HT -2 (Commercial)	0
17) HT-3 (Industry)	314
18) HT-4 (Construction)	0
19) EHT-1 (General)	0
20) EHT-2 (General)	0
21) Solar	13,834
Total	**2,43,94,534**

1.4 Narayanganj Palli Bidyut Samity-1 (NPBS-1)

Since its inception in 1986, Narayanganj Palli Bidyut Samity-1 is playing a vital role in Industrial and Socio-Economic Development of Narayanganj District. The Rural Electrification Program conducted by Narayanganj Palli Bidyut Samity-1 has acted a leap-forward in the development of socio-economic structure of rural areas in Narayanganj District. It has significant and sustained impact on industrialization and business & commercial activities in the rural areas.

Table 1.4: Some Information of Narayanganj Palli Bidyut Samity-1 (NPBS-1)

No	Heading	Value
1	Officially the date of electrification	01-007-2005
2	Geographic area	257.54 sq km
3	Number of upazila	03 (Sonargaon, Bandar, Rupganj(Partial))
4	Number of unions	18
5	Number of zonal offices	04 (Sonargaon, Bandar, Modonpur, Tarabo)
6	Total number of villages	690
7	Number of electrified villages	689
8	The amount of built-in line	2245 km
9	Connection facility creation	2,61,593 people
10	Sub-station number	16
11	Maximum demand	65 MW
12	System loss (up to June / 18)	3.61%
13	Customer number	Residential = 2,44,136, commerce = 10,229, industries = 3,262, Charitables & others = 3,966, people

1.5 Future Plans

Since independence, the power sector in Bangladesh has been represented by the Bangladesh Power Development Board (BPDB) which has been responsible for power generation, transmission and distribution in the country. In recognition of the need to improve the sector's performance, GOB, in consultation with the main development

partners, adopted a policy called 'Power Sector Reforms in Bangladesh' (PSRB) in 1994. Enhancement of imported energy infrastructure and its flexible operation. Efficient development and utilization of domestic natural resources (gas and coal). Bangladesh will bring full electricity under in 2021. Recently announced the generation of 24,000MW by 2021. It's nigh impossible! Most of the projected coal-based power stations are yet to be set up. As per the draft report, the demand for power by 2041 would be 82,000MW, instead of 61,000MW, if the efficiency and conservation programme is not implemented. By that time, the generation capacity would reach 94,000MW. The draft report states that LNG will be the basic fuel to generate power in 2041 as its market has widened gradually. By that time, the share of LNG in power generation resources will be 43 per cent. It will be 32 per cent for coal, 15 per cent for imported coal, and 10 per cent for others (hydro, liquid fuel, nuclear and renewable sources). In the draft document, the demand for power has been predicted as: 12,874MW in 2018, 18,374MW in 2021, 27,009 MW in 2025, 39,670MW in 2030 and 77,285MW in 2041. Currently, Bangladesh has 385,000 km of distribution lines, but they should be extended to 783,000 km to achieve the target.

Table 1.5: Future plan for Installed Capacity

Technology	Percentage of Production	Installed Capacity by 2050 (MW)
Residential rooftop solar	27.8%	66637
Commercial & government rooftop solar	7.8%	19026
Solar plants	40%	94722
Concentrated solar plant (CSP)	11.9%	10915 (additional 6548 MW of CSP and 28375 MW of solar thermal for heat to address intermittency of wind and solar)
Wind (Onshore)	5.8%	5944
Wind (Offshore)	5.8%	13077
Wave energy	0.5%	1584
Tidal energy	0.1%	150
Hydro power	0.3%	230
Geothermal	0%	0
Total	100%	212285

1.6 Changes in Bangladesh due to electricity generation

Electricity is a flexible form of energy and critical resource for modern life and a vital infrastructural input for economic development. In all economies, households and

companies have extensive demand for electricity. This demand is driven by such important factors as industrialization, extensive urbanization, population growth, rising standard of living and even the modernization of the agricultural sector. There is widespread discussion and research over the topic of relationship between electricity consumption and income particularly since early seventies of the last decades

Electricity is a major source of energy in the industrial and agricultural sectors in Bangladesh. These two sectors collectively contribute to 50.3 percent of Bangladesh's GDP. The contribution of agricultural and industry sector to GDP in fiscal year 2010-11 was 19.9 percent and 30.4 percent respectively (Bangladesh Bank, 2012). The share of agriculture and industry sectors in electricity consumption is increasing gradually. According to the Bangladesh Power Development Board (BPDB) statistics, about 45 percent (1995 to 2010) of total electricity was consumed by agriculture and industrial sectors. These statistics indicate that industry and agriculture together contribute significantly to GDP and electricity consumption as well. From this we can infer, therefore that electricity consumption plays an important role in economic growth of Bangladesh.

1.7 Outline

This Thesis/Project is organized as follows:

Chapter 1: Introduction of BREB and NPBS-1
Chapter 2: Literature Review
Chapter 3: Socio Economic Impact of REP in Bangladesh
Chapter 4: Import Energy of NPBS-1
Chapter 5: Revenue and Consumers of NPBS-1
Chapter 6: Electricity Cost and Rate
Chapter 7: Conclusion

CHAPTER 2
LITERATURE REVIEW

2.1 Literature Review

Generation plants consist of one or more generating units that convert mechanical energy into electricity by turning a prime mover coupled to an electric generator. The ability of generation plants to supply all of the power demanded by customers is referred to as system adequacy. Three conditions must be met to ensure system adequacy. First, available generation capacity must be greater than demanded load plus system losses. Second, the system must be able to transport demanded power to customers without overloading equipment. Third, customers must be served within an acceptable voltage range. Distribution reliability is one of the most important topics in the electric power industry due to its high impact on the cost of electricity and its high correlation with customer satisfaction. While scrupulously correct in theory and mathematics, provides a wealth of practical experience and useful knowledge that can be applied by any electric power engineer to improve power distribution reliability performance.

G.A. Putnus, P. Suwanaping Karl, D. Johnston, E. C. Bentley, M. Narayana said that fossil fuel consumption will be increased to increase the country's development or economic capability. He also said that the use of electricity-driven vehicles is still very low, but its use will grow very quickly, because continuous our mineral resources start to fall. This paper presents the results of an analysis of the impact of electric vehicles on existing power distribution networks. [1]

Helene Ahlborg and Linus Hammar reported that Mozambique and Tanzania are countries with very low rural electrification rates. There are significant barriers to effective rural electrification by grid-extension and off-grid installations. The main drivers are political ambitions based on expected growth of demand. The barriers are related to lack of access

to human capital, to difficulties in planning and donor dependency, to low rural markets and little interest from private sector and to more technical matters.

Yohanis, Mondol, Wright and Norton reported that Domestic energy consumption depends on the location, design together with the efficiency of appliances and the behavior and socio-demographical characteristics of and construction of a dwelling, and the specification of heating systems and their controls occupants [5].

M.S. Alam, E. Kabir, M.M. Rahman, M.A.K. Chowdhury are written in their paper that The most pressing problem in the power sector has been with the distribution system in Bangladesh since her independence; which is characterized by heavy system loss and poor collection performance. They told a solution to make it efficient and effective; its administration must be restructured. At the same time, its performance should be monitored continually on the basis of particular performance indicators.[1]

Boris Dodonov, Petra Opitz, Wolfgang Pfaffenberger reported that Increasing the electricity tariffs for private consumers to cost-covering levels has been a very sensitive issue for all transition countries.[2]

Eric Sortomme, Mohammad M. Hindi, S. D. James MacPherson, and S. S. Venkata reported that Coordinated Charging of Plug-In Hybrid Electric Vehicles (PHEVs) can reduce the distribution system losses. They also said that As the number of plug-in hybrid vehicles (PHEVs) increases, so might the impacts on the power system performance, such as overloading, reduced efficiency, power quality, and voltage regulation particularly at the distribution level.[3]

Without efficient, clean energy, people are undermined in their efforts to engage effectively in productive activities or to improve their quality of life. [4]

They also pointed that the electrical energy demand of a household can vary each hour of every day, weekdays and weekends, and for different months of the year. EBL Securities

reported in their project that incessant supply of power and energy is the prerequisite for the progress of an economy. The importance of energy is even more supplementary in the context of Bangladesh, an emerging economy that has been experiencing rapid economic growth but also has been experiencing prolonged period of energy crisis. Electricity is the main form of energy that is tapped on both private and commercial scales in Bangladesh. However, the country is still at a very low level of electrification. The government of Bangladesh has set a target to bring the whole country under electricity coverage by 2021. A long term plan of power generation up to 2030 was made in Power System Master Plan (PSMP)-2010. The power demand in Bangladesh is projected to be 33,708 MW by 2030 [6].

Hao and Alex write in their report Reactive power pricing and management under open-access will depend upon two important developments: 1) the functional unbundling of facilities that support the reactive power and voltage control service, 2) grid rules to facilitate the coordination between generation and transmission system for reliable system operation. [7]

G.A.Putnus,P.Suwanaping Karl,D.Johnston, E.C.Bentley, M. Narayana said that. The market for battery powered and plug-in hybrid electric vehicles is currently limited, but this is expected to grow rapidly with the increased concern about the environment and advances in technology. Due to their high energy capacity, mass deployment of electrical vehicles will have significant impact on power networks. This paper presents the results of an analysis of the impact of electric vehicles on existing power distribution networks [8].

R.SrinivasaRao,K.Ravindra,K.Satish ,S.V.L.Narasimhamrepresented that a new method to solve the network reconfiguration problem in the presence of distributed generation (DG) with an objective of minimizing real power loss and improving voltage profile in distribution system. Different scenarios of DG placement and reconfiguration of network are considered to study the performance of the proposed method. The method has been tested on 33-bus and 69-bus radial distribution systems at three different load levels to demonstrate the performance and effectiveness of the proposed method [9]

Michael caramains, Justin M.Foster considerd that the management of electric vehicle (EV) loads within a market-based Electric Power System Control Area. EV load management achieves cost savings in both (i) EV battery charging and (ii) the provision of additional regulation service required by wind farm expansion. A hierarchical decision making methodology is proposed for hedging in the day-ahead market and for playing the real-time market in a manner that yields regulation service revenues and allows for negotiated discounts on the use of distribution network payment [10]

Market has been established based on the assumption of open access and nondiscriminatory use of the T&D assets. This paper focuses on the distribution pricing methods and suggests one that is currently under development in Brazil. This method is based on incremental costs derived from the aggregated expansion plan of a particular utility, named model utility [11]

Chapter 3

SOCIO-ECONOMIC IMPACT OF REP IN BANGLADESH

3.1 Introduction

The Rural Electrification Program in Bangladesh began in 1978. Primarily with the technical assistance of National Rural Electrification Cooperative Association (NRECA), Rural Electrification Board started their journey in 1976 with an aim to provide electricity outside the urban strata. The program is based on the concept of member-owned Palli Bidyut Samities (PBSs) similar to the rural electric cooperatives that exist in the United States. PBSs as the model of local governance act as nucleus of REP. Seventy-eight PBSs have been organized to date in Bangladesh. REP aimed initially at electrification of irrigation pumps and tube-wells, agro-based industries and serving domestic and commercial loads of only those villages, which fall right alongside the electrical distribution facilities built for irrigation purposes. To date, electricity made available through PBS areas, is intended to be used for all possible applications that serve the purpose of improved living conditions of the rural people. This can be achieved and has been achieved to a large extent (present research findings substantiate this) by introducing electricity into households (e.g., for lighting and domestic appliances), into rural industry (e.g., for powering tools), and into agriculture (e.g., for water pumping in irrigation systems, raising farm yields), in to market places, and into public (street lighting, power and cooling of medicines or vaccines in medical centers) to ensure improved health facilities, lighting in schools, offices and other institutions.

3.2 Economic and Social Impact

3.2.1 Household level

The economic and social effects of rural electrification at the household level are multi-dimensional, and both are real and inappropriate. The electricity has brought light to many families, hitherto remaining in complete darkness. It has given them the enlightenment towards modern lining, freedom from poverty, malnutrition and hunger. Rural's consume above 65 percent of supplied electricity in household level in 2015. The people of household level now have much better work-habits and an improved sense of discipline and social security, which came as a result of the assurances of basic amenities in life. Rural Electric Societies have provided jobs to rural families/youths. In addition, a total of 8000 persons are employed in the construction firms and consulting offices working for the program. Presently 55.41% villages and 5.08 million rural households are electrified and no. of beneficiaries are 30.5 million.

3.2.2 Impact on commercial activities

Rural electricity has worked as a leap-forward for the development of commercial activities in rural Bangladesh. Electricity irrigation pumps, industrial and commercial shops create a direct employment opportunity of 5.06 million. Rural electricity has deep and remote economic, socio-cultural and demographic impact of the life and living of the rural masses in Bangladesh. It has significant and lasting impact on agricultural growth, industrialization and business and commercial activities. It affects the formation of capital through knowledge building through electricity-driven media exposure. Thus, in order to accelerate the process of economic growth, strengthening pro-poor orientation in the growth process, attain the millennium development goal with an emphasis to PRSP and to further boost up human development in Bangladesh access to electricity of the households and social and economic institutions should be expanded within shortest time

3.2.3 Impact on education

Compared to non-electric families, the overall literacy rate of both men and women was significantly higher in terms of electricity, especially due to the use of electricity in the household, which contributed a lot to increase the awareness of economic and educational standards. The poor-poor divide is less pronounced in the power plant than the non-power

plants. Measurement on education, final examination, school dropout, school attendance rate and the number of students spent at night spent studying at the number (grade) - all the power centers have improved very much. Compared to non-electric power. Literacy rate in the rural areas has increased significantly due to the expansion of mass education program. Power issues to improve the quality of education. These qualitative improvements in power plants work through many channels: due to high quality of time after sunset, due to adequate lighting and comfortable fans, quality of the time increases the appetite for knowledge-based strengthening education due to TV access), parents (especially mothers / other senior female members) To help children in education compared to the previous generation Gives more time. Literacy rate in the electrified households is 71%, where 54% in the un-electrified households. Poor workers can attend the night schools at the end of the day's business. They can also sit beside the children to supervise their education.93.7% children increase there study time.

3.2.4 Impact on Ownership and Assets

The higher proportion of electrified households is the cultivable land compared to their cultivable non-electric families. The report related to the undemocratic economic and social impact assessment study of rural electrification program in Bangladesh was 59%: At the cost of electricity, the HDRC Viii family 73% households for electricity consumption. The electrified household own cultivable land is 178.2, the average-EV is 74.2, and WE-NEV, 147.8 decimals. About 79% of the electrified households (HE) reported ownership of cultivable land.

3.2.5 Impact on Gender Dimension

Electrification contributed to the positive development of women's socio-economic status. Power mobility, participation in IGA, decision making, freedom of income and savings, good use of loans, knowledge of gender discrimination problems, housing plans on the basis of convenience, change of attitude among benefits, has a profound effect on electricity. Reducing health care discrimination, increasing the overall schooling for children and girls for school, sending girls to schools, awareness of legal issues (for

example, marriage of 18 years of girls and boys at the age of 21) and awareness of negative impact dowry.

3.2.6 Impact on industrial development

Industrial electricity is the second highest consumer by using 42.3% of total MWH. Over the past twenty years, the total number of rural electricity industries increased by 3210 times, and the average number of industrial connections per PBS increased by 550 times. A significant increase in industrial output (in both cases of volume and value) has been identified in the research. In the last five years, the rate of increase in the electricity industry was 295%. Output volume (Tone) increased by 78 percent, the same growth was only 8 percent in non-electrical industries. he output of the piece unit (excluding tons and pulse) has increased by 121% in volume electricity, and in the last five years it was -0.44% (negative) in non-electric industries.

3.2.7 Employment Sector

Electricity generates employment. Employment impact was both direct and indirect. In agricultural fields, the estimated population involved in direct farming using rural electricity connections. Currently, 63322 employs 983,829 persons using industrial rural electricity; and electrified industries generate 11 times more jobs than non-electric industries. Rural and wholesale shops employ 848,630 people using rural electricity. There are 16,223 direct employment in PBS. Further, electrified females are more involved in household-level income-generation activities than women without electricity, and time is restored for useful employment; the unemployment rate is relatively less than the electric family. And indicates the effect of the modernization of electricity by occupying more than half of the electrified family's non-agricultural employment. At the top of them, rural electrification on employment has huge impact on employment support services.

3.2.8 Cultural Sector

Electricity enlightens people. Human development is not possible as a condition of increasing human opportunities and choices without providing electricity benefits to the

public. The impact of electricity affects the social and cultural development of individuals, families and communities. This effect mediates through watching channels, listening to the radio, during extended discussions, etc. through various intervention channels like handmade and behavioral changes. Changes in economic life (income, employment, expenditure, savings, credit, asset building, already discussed) together with varying levels of changes in social and cultural life have resulted in multiple synergistic effects for developing agents. Which, determine the role of electricity. In this way, "Power as a Mediating Agent for Social and Cultural Development", based on this trend, present in the following relevant broad areas the power impact analysis: education, health hygiene, gender empowerment, gender disparities, and changing status, attitudes and ideological changes, extended time and time allocation, and social Modernization as environmental and protective security.

3.2.9 Impaction Irrigation and Agriculture Production

RRP has contributed significantly in the field of agriculture, production and utilization of skilled irrigation equipment to achieve food self-sufficiency and creates stable employment opportunities. Generally, electricity irrigation machinery is more reliable than diesel. Compared to diesel operators, the average cost of three-quarters of the power equipment is cost effective and energy expenditure. Electric-centric irrigation equipment creates employment for two to two people annually and by generating one hundred thousand additional jobs throughout the year in rural areas of the country by irradiation of irrigation equipment. Electricity has intensified land use intensity and cropping intensity and its operation cost is less than the diesel equipment (including breakdown and related problems), and irrigated on other types of irrigation. Works with nearly 0 percent pollution of electrical equipment. This is "more clean and safe than driving in the del.ic." Power contribution clearly evident in the agricultural sector of Bangladesh, so on one hand more generation of electricity, and better delivery of others, proposed. Initial operation of irrigation pump connection to RRB and its mission / target to connect with electricity generation.

.

3.2.10 Social Impact of Mass Media

Due to all the surplus movement of the family, industrial and seed power plants from one majority area to the non-electrified area, the power centers have shown many economic trends measured by the high speed movement of their economic power.

3.2.11 Impact on Health, Hygiene and Sanitation

The key to human health is the health condition of human. For this reason, the longevity (birth of birth expectancy) of human beings, which is officially accepted as the number one variable in measuring the measurement of human development or human deprivation, is essentially a function of health. Relations between health, poverty reduction and economic growth are generally much stronger than understanding. The WHO Commission in Macroeconomics and Healthy challenges the traditional argument that the reason for the economic development is that health will automatically improve health is the opposite: Contrary to the fact: In a developed country, an urgent need for economic development in the poor country. The Commission's roadmap report says, "Health is a central input to prioritize its own rights, economic development and poverty reduction, increased investment in health will increase billions of dollars to increase income. Whereas, a function of health practices and behavioral health awareness (among others), has been analyzed later. Such awareness is mediated through many agents, among which television is a major issue. So, in all possible health related issues, the role of electricity was detected by electric equipment, especially in the use of TV as an agent. The effects of electricity on health (or effects) are not only through the TV, but also through the other benefits of freezing, fan, modern diagnostic facilities (only possible if electricity is available).

3.3 Summary

Rural electrification reflects positive effects in both social and economic sectors. Rural electricity industries play an important role in transforming the livelihood of rural people with agricultural productivity till the arrival of rural electrification. Rural area of Bangladesh is 90%. We can develop rural electrification technologies, at the same time the country will be improved.

CHPATER 4

IMPORT ENERGY OF NARAYANGANJ PBS-1

4.1 Introduction

Electricity is the most important part in our developing country and any country. In view of the increasing demand for electricity around the world, Bangladesh is no exception. Daily demand of electricity is increasing in Bangladesh. For the economic release and to meet consumers' needs, electricity is increasing, power generation is increasing, generating more transmission / distribution capacity, increased electricity / more population through electricity supply and it is important to ensure more efficient management. Bangladesh has already a Bilateral Agreement with India under which about 1200 MW of power can be imported. The government of Bangladesh (GoB) has decided to set up power plants in the private sector and the independent electricity generator (IPP) has launched their business in Bangladesh.

4.2 NPBS-1 Imports from BPDB

To meet the demand of consumers and to meet the requirements of NPBS-1, directly bought Electricity from Government sector. In this chapter we discuss about Energy Purchase and purchase cost from Public and private sector for Three year (2015-2016, 2016-2017, 2017-2018), also explain about different grid capacity, supply and peak demand, system loss, KWh sold to the consumers.

4.3 Data Analysis

Table 4.1: Energy Import of NPBS -1, 2015-16

Name of Substation	July'15			August'15		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	2,709,049	61,798,100	8.34	2,813,130	71,717,178	9.41
Meghnaghat Grid-2	4,319,448			4,429,440		
Meghnaghat Horipur	4,098,672			4,438,620		
Sonargaon Grid-1	6,882,240			8,446,080		
Sonargaon Grid-2	8,832,480			10,027,680		
Horipur GT-1	4,721,250			24,415,344		
Horipur GT-2	14,233,867			-		
PGCBL-Tartiary Aux3	23,839			33,476		
Summit Purbanchal PCL	8,290,322			14,161,800		
Rohim Energy Ltd	6,038,400			3,968,160		
Eversest Power G. CO	6,803,064			6,119,748		
A.M. Energy Ltd	-			97,059		
Meghna Energy Ltd	471,474			198,666		
Narayanganj PBS-2	-			21,896		
Nara PBS-2 (Bhulta R2)	-			-		
Nara PBS-2 (Bhulta Grid)	-			-		
Total	67,424,105	61,798,100		79,171,099	71,717,178	

Name of Substation	September'15			October'15		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	2,773,994	65,685,192	7.85	2,764,113	73,655,469	5.83
Meghnaghat Grid-2	4,288,263			4,168,294		
Meghnaghat Horipur	4,432,904			4,324,204		
Sonargaon Grid-1	7,411,680			7,664,160		
Sonargaon Grid-2	9,539,040			9,924,000		
Horipur GT-1	21,425,183			24,449,400		
Horipur GT-2	-			-		
PGCBL-Tartiary Aux3	31,945			44,878		
Summit Purbanchal PCL	10,543,423			10,836,603		
Rohim Energy Ltd	4,582,080			6,038,400		
Eversest Power G. CO	6,047,784			7,811,856		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	186,960			170,790		
Narayanganj PBS-2	21,332			20,153		
Nara PBS-2 (Bhulta R2)	-			-		
Nara PBS-2 (Bhulta Grid)	-			-		
Total	71,284,588	65,685,192		78,216,851	73,655,469	

Name of Substation	November'15			December'15		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	1,982,303	68,137,084	5.35	1,627,290	63,597,366	6.05
Meghnaghat Grid-2	2,921,255			2,645,370		
Meghnaghat Horipur	3,749,504			2,835,000		
Sonargaon Grid-1	6,439,680			5,514,240		
Sonargaon Grid-2	7,961,760			7,305,120		
Horipur GT-1	21,820,571			23,042,392		
Horipur GT-2	-			-		
PGCBL-Tartiary Aux3	32,910			27,953		
Summit Purbanchal PCL	10,360,523			9,810,588		
Rohim Energy Ltd	8,416,800			7,068,960		
Eversest Power G. CO	7,343,892			7,162,164		
A.M. Energy Ltd	513,343			395,763		
Meghna Energy Ltd	432,624			242,136		
Narayanganj PBS-2	15,123			12,955		
Nara PBS-2 (Bhulta R2)	-			-		
Nara PBS-2 (Bhulta Grid)	-			-		
Total	71,990,288	68,137,084		67,689,931	63,597,366	

Name of Substation	January'16			February'16		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	1,514,045	65,292,526	5.48	1,712,519	82,616,695	2.84
Meghnaghat Grid-2	2,657,266			2,710,323		
Meghnaghat Horipur	2,867,867			3,065,901		
Sonargaon Grid-1	6,609,600			7,815,840		
Sonargaon Grid-2	8,498,880			10,054,080		
Horipur GT-1	20,902,563			32,700,000		
Horipur GT-2	-			183,750		
PGCBL-Tartiary Aux3	25,828			27,508		
Summit Purbanchal PCL	12,462,782			14,007,600		
Rohim Energy Ltd	5,716,320			5,722,080		
Eversest Power G. CO	7,052,868			6,839,676		
A.M. Energy Ltd	405,616			155,829		
Meghna Energy Ltd	346,308			23,136		
Narayanganj PBS-2	15,554			16,720		
Nara PBS-2 (Bhulta R2)	-			-		
Nara PBS-2 (Bhulta Grid)	-			-		
Total	69,075,497	65,292,526		85,034,962	82,616,695	

Name of Substation	March'16			April'16		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	2,412,329	97,597,770	5.07	3,266,582	96,838,053	6.02
Meghnaghat Grid-2	3,724,728			3,856,737		
Meghnaghat Horipur	3,768,250			4,062,048		
Sonargaon Grid-1	9,603,360			9,221,280		
Sonargaon Grid-2	12,348,480			11,939,040		
Horipur GT-1	38,325,000			36,097,500		
Horipur GT-2	-			-		
PGCBL-Tartiary Aux3	30,060			33,630		
Summit Purbanchal PCL	18,888,480			20,635,920		
Rohim Energy Ltd	7,127,040			6,529,920		
Eversest Power G. CO	5,039,244			5,326,020		
A.M. Energy Ltd	233,309			49,350		
Meghna Energy Ltd	-			193,200		
Narayanganj PBS-2	16,998			20,460		
Nara PBS-2 (Bhulta R2)	1,290,000			1,810,000		
Nara PBS-2 (Bhulta Grid)	-			-		
Total	102,807,278	97,597,770		103,041,687	96,838,053	

Name of Substation	May'16			June'16		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	4,571,446	90,996,836	8.02	5,203,302	360,151,697	2.53
Meghnaghat Grid-2	2,271,392			2,743,343		
Meghnaghat Horipur	4,954,698			5,231,604		
Sonargaon Grid-1	8,430,240			11,247,360		
Sonargaon Grid-2	10,985,760			14,389,440		
Horipur GT-1	37,443,750			159,958,154		
Horipur GT-2	-			-		
PGCBL-Tartiary Aux3	34,900			34,550		
Summit Purbanchal PCL	17,490,600			71,397,479		
Rohim Energy Ltd	5,553,120			3,872,160		
Eversest Power G. CO	5,794,956			5,213,196		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	130,680			127,830		
Narayanganj PBS-2	17,662			19,248		
Nara PBS-2 (Bhulta R2)	1,257,000			1,862,000		
Nara PBS-2 (Bhulta Grid)	-			88,190,029		
Total	98,936,204	90,996,836		369,489,695	360,151,697	

Electricity imported in NPBS-1 total 67,200,701 units of July 2015, out of which Sonargaon 44,55,000 units and which is 6.63 % of total unit import for this month, Meghnaghat-1 2,696,000 units and which is 4.01 % of total unit import for this month, Meghnaghat-2 1,548,000 units and which is 2.30 % of total unit import for this month,

Ananda Baza 2,357,616 units and which is 3.51 % of total unit import for this month, Head Office 4,011,000 units and which is 5.97 % of total unit import for this month, Noyapur 2,679,000 units and which is 3.99 % of total unit import for this month, Modingonj-1 2,705,670 units and which is 4.03 % of total unit import for this month, Modingonj-2 4,314,060 units and which is 6.42 % of total unit import for this month, Modingonj-Dasergao 4,093,560 units and which is 6.09 % of total unit import for this month, Tarabo-1 5,362,500 units and which is 7.98 % of total unit import for this month, Tarabo-2 3,593,500 units and which is 5.35 % of total unit import for this month, Borpa 3,027,750 units and which is 4.51 % of total unit import for this month, Horipur GIS 5,081,000 units and which is 7.56 % of total unit import for this month, BSIC Kanchpur 4,281,750 units and which is 6.37 % of total unit import for this month, Bhulta-Kanchan 396,000 units and which is 0.59 % of total unit import for this month, Bhulta-REB Ring-2 3,513,565 units and which is 5.23 % of total unit import for this month, Horipur-Meghnaghat 3,267,000 units and which is 4.86 % of total unit import for this month, Horipur-Narsingdi 1,960,310 units and which is 2.92 % of total unit import for this month, Horipur-Kanchan 2,322,405 units and which is 3.46 % of total unit import for this month, Horipur-Demra 544,500 units and which is 0.81 % of total unit import for this month, Horipur-Rohim steel 494,205 units and which is 0.74 % of total unit import for this month, Sonargaon-Meghnagh 3,935,250 units and which is 5.86 % of total unit import for this month, Sonarhaon-Narsingdi 541,750 units and which is 0.81 % of total unit import for this month, Horipur-PGCBL 19,310 units and which is 0.03 % of total unit import for this month.

Table 4.2: Energy Import of NPBS -1, 2016-17

Name of Substation	July'16			August'16		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	5,032,532	90,269,245	4.93	5,186,709	103,964,318	5.88
Meghnaghat Grid-2	2,749,234			2,782,972		
Meghnaghat Horipur	4,792,673			5,462,303		
Sonargaon Grid-1	9,030,720			10,305,120		
Sonargaon Grid-2	11,447,040			13,231,680		
Horipur GT-1	28,181,250			39,971,250		
Horipur GT-2	-			-		
PGCBL-Tartiary Aux3	33,720			38,810		
Summit Purbanchal PCL	18,118,800			19,014,181		
Rohim Energy Ltd	8,495,040			8,081,760		
Eversest Power G. CO	5,252,652			5,408,532		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	355,452			288,252		
Narayanganj PBS-2	17,813			17,700		
Nara PBS-2 (Bhulta R2)	1,439,000			674,319		
Nara PBS-2 (Bhulta Grid)	-			-		
Total	94,945,926	90,269,245		110,463,588	103,964,318	

Name of Substation	September'16			October'16		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	5,021,029	91,002,358	5.71	5,270,673	111,165,295	5.50
Meghnaghat Grid-2	2,805,110			2,766,401		
Meghnaghat Horipur	5,454,998			5,125,913		
Sonargaon Grid-1	8,541,600			10,445,760		
Sonargaon Grid-2	10,966,560			13,420,800		
Horipur GT-1	31,215,000			41,805,000		
Horipur GT-2	-			-		
PGCBL-Tartiary Aux3	31,780			36,670		
Summit Purbanchal PCL	17,023,575			23,003,280		
Rohim Energy Ltd	8,351,040			8,626,080		
Eversest Power G. CO	5,723,064			6,117,732		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	359,904			466,788		
Narayanganj PBS-2	20,302			19,949		
Nara PBS-2 (Bhulta R2)	997,092			532,000		
Nara PBS-2 (Bhulta Grid)	-			-		
Total	96,511,054	91,002,358		117,637,046	111,165,295	

Name of Substation	November'16			December'16		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	5,019,568	99,431,512	2.15	3,717,054	95,924,885	9.32
Meghnaghat Grid-2	412,158			1,040,138		
Meghnaghat Horipur	3,438,633			3,945,892		
Sonargaon Grid-1	7,926,720			7,036,800		
Sonargaon Grid-2	10,303,200			9,023,040		
Horipur GT-1	35,250,000			33,577,500		
Horipur GT-2	-			6,146,250		
PGCBL-Tartiary Aux3	30,960			27,340		
Summit Purbanchal PCL	20,738,160			21,472,200		
Rohim Energy Ltd	8,794,560			8,319,360		
Eversest Power G. CO	7,847,820			10,151,712		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	538,104			434,994		
Narayanganj PBS-2	14,590			12,752		
Nara PBS-2 (Bhulta R2)	1,305,000			-		
Nara PBS-2 (Bhulta Grid)	-			879,000		
Total	101,619,473	99,431,512		105,784,032	95,924,885	

Name of Substation	January'17			February'17		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	3,107,674	98,952,242	0.98	2,998,354	92,483,012	1.04
Meghnaghat Grid-2	1,565,092			1,532,745		
Meghnaghat Horipur	4,347,647			3,907,202		
Sonargaon Grid-1	7,095,840			10,282,560		
Sonargaon Grid-2	9,105,120			13,229,280		
Horipur GT-1	19,150,000			-		
Horipur GT-2	13,215,000			21,815,000		
PGCBL-Tartiary Aux3	26,570			26,610		
Summit Purbanchal PCL	22,007,160			20,075,760		
Rohim Energy Ltd	9,064,800			9,667,680		
Eversest Power G. CO	10,547,856			9,143,856		
A.M. Energy Ltd	-			270,319		
Meghna Energy Ltd	287,244			-		
Narayanganj PBS-2	11,344			11,732		
Nara PBS-2 (Bhulta R2)	399,000			496,000		
Nara PBS-2 (Bhulta Grid)	-			-		
Total	99,930,347	98,952,242		93,457,098	92,483,012	

Name of Substation	March'17			April'17		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	3,640,267	103,796,853	2.66	4,298,628	101,794,512	8.14
Meghnaghat Grid-2	1,915,712			2,363,782		
Meghnaghat Horipur	4,186,365			5,322,402		
Sonargaon Grid-1	13,322,400			10,942,560		
Sonargaon Grid-2	17,132,640			14,125,920		
Horipur GT-1	-			22,578,750		
Horipur GT-2	23,992,500			13,252,500		
PGCBL-Tartiary Aux3	28,880			32,120		
Summit Purbanchal PCL	22,862,160			18,947,880		
Rohim Energy Ltd	9,523,200			9,687,360		
Eversest Power G. CO	9,287,568			8,746,236		
A.M. Energy Ltd	372,003			54,070		
Meghna Energy Ltd	-			-		
Narayanganj PBS-2	21,001			30,670		
Nara PBS-2 (Bhulta R2)	344,000			431,000		
Nara PBS-2 (Bhulta Grid)	-			-		
Total	106,628,696	103,796,853		110,813,878	101,794,512	

Name of Substation	May'17			June'17		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	5,327,272	110,440,483	9.51	6,393,101	101,499,444	9.84
Meghnaghat Grid-2	2,926,300			1,803,873		
Meghnaghat Horipur	5,963,679			4,920,653		
Sonargaon Grid-1	11,598,720			10,476,000		
Sonargaon Grid-2	15,380,640			13,747,680		
Horipur GT-1	26,981,250			19,346,250		
Horipur GT-2	16,428,750			21,090,000		
PGCBL-Tartiary Aux3	34,320			34,530		
Summit Purbanchal PCL	20,383,560			20,797,200		
Rohim Energy Ltd	7,213,920			5,872,320		
Eversest Power G. CO	9,106,272			7,631,604		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	-			-		
Narayanganj PBS-2	29,571			61,585		
Nara PBS-2 (Bhulta R2)	673,277			401,000		
Nara PBS-2 (Bhulta Grid)	-			-		
Total	122,047,531	110,440,483		112,575,796	101,499,444	

Table 4.3: Energy Import of NPBS -1, 2017-18

Name of Substation	July'17			August'17		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	5,497,417	115,353,939	3.07	5,620,008	124,403,594	6.01
Meghnaghat Grid-2	2,898,131			3,147,954		
Meghnaghat Horipur	5,268,084			5,997,629		
Sonargaon Grid-1	9,710,400			11,126,880		
Sonargaon Grid-2	12,414,720			16,949,760		
Horipur GT-1	18,877,500			26,208,750		
Horipur GT-2	23,362,500			22,331,250		
PGCBL-Tartiary Aux3	40,300			28,290		
Summit Purbanchal PCL	21,859,200			23,642,280		
Rohim Energy Ltd	9,843,840			9,249,600		
Eversest Power G. CO	9,143,532			7,845,804		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	-			-		
Narayanganj PBS-2	45,108			44,145		
Nara PBS-2 (Bhulta R2)	-			165,857		
Nara PBS-2 (Bhulta Grid)	44,143			-		
Total	119,004,875	115,353,939		132,358,207	124,403,594	

Name of Substation	September'17			October'17		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	5,179,545	105,146,794	2.26	5,009,589	119,932,445	4.48
Meghnaghat Grid-2	3,016,520			2,741,294		
Meghnaghat Horipur	5,215,667			5,309,298		
Sonargaon Grid-1	9,514,080			9,988,800		
Sonargaon Grid-2	15,670,080			17,367,840		
Horipur GT-1	24,183,750			24,652,500		
Horipur GT-2	13,245,000			24,172,500		
PGCBL-Tartiary Aux3	14,340			38,780		
Summit Purbanchal PCL	19,721,520			22,458,240		
Rohim Energy Ltd	6,183,840			6,992,160		
Eversest Power G. CO	4,895,388			6,479,856		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	-			-		
Narayanganj PBS-2	40,896			40,659		
Nara PBS-2 (Bhulta R2)	-			-		
Nara PBS-2 (Bhulta Grid)	700,000			312,000		
Total	107,580,626	105,146,794		125,563,516	119,932,445	

Name of Substation	November'17			December'17		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	3,805,419	113,814,878	1.15	3,256,109	109,878,387	2.59
Meghnaghat Grid-2	2,097,358			1,727,683		
Meghnaghat Horipur	4,888,461			4,797,878		
Sonargaon Grid-1	9,675,360			11,055,840		
Sonargaon Grid-2	15,094,080			14,316,480		
Horipur GT-1	23,205,000			21,348,750		
Horipur GT-2	21,483,750			19,796,250		
PGCBL-Tartiary Aux3	36,440			27,030		
Summit Purbanchal PCL	19,809,360			21,001,320		
Rohim Energy Ltd	7,707,360			8,304,480		
Eversest Power G. CO	5,975,676			6,731,712		
A.M. Energy Ltd	265,704			33,052		
Meghna Energy Ltd	-			-		
Narayanganj PBS-2	31,470			22,343		
Nara PBS-2 (Bhulta R2)	-			-		
Nara PBS-2 (Bhulta Grid)	1,068,000			384,000		
Total	115,143,438	113,814,878		112,802,927	109,878,387	

Name of Substation	January'18			February'18		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	3,225,419	105,913,405	3.70	3,217,107	99,329,789	3.47
Meghnaghat Grid-2	1,704,051			1,701,182		
Meghnaghat Horipur	4,442,045			4,533,005		
Sonargaon Grid-1	9,769,920			8,097,600		
Sonargaon Grid-2	14,199,360			10,802,880		
Horipur GT-1	4,567,500			17,583,750		
Horipur GT-2	33,123,750			21,641,250		
PGCBL-Tartiary Aux3	24,010			22,460		
Summit Purbanchal PCL	21,282,840			20,138,040		
Rohim Energy Ltd	8,281,440			6,022,080		
Eversest Power G. CO	7,702,416			8,710,812		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	-			-		
Narayanganj PBS-2	28,646			26,118		
Nara PBS-2 (Bhulta R2)	1,627,000			-		
Nara PBS-2 (Bhulta Grid)	-			409,000		
Total	109,978,397	105,913,405		102,905,284	99,329,789	

Name of Substation	March'18			April'18		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	4,660,259	120,324,060	8.64	4,402,892	115,879,914	4.11
Meghnaghat Grid-2	2,634,533			2,516,042		
Meghnaghat Horipur	6,012,454			6,090,843		
Sonargaon Grid-1	13,131,360			10,731,840		
Sonargaon Grid-2	16,858,560			13,824,000		
Horipur GT-1	22,470,000			24,168,750		
Horipur GT-2	25,961,250			22,766,250		
PGCBL-Tartiary Aux3	32,150			30,790		
Summit Purbanchal PCL	23,447,160			19,194,840		
Rohim Energy Ltd	6,469,920			7,379,040		
Eversest Power G. CO	9,863,532			8,711,604		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	-			-		
Narayanganj PBS-2	32,303			32,722		
Nara PBS-2 (Bhulta R2)	-			-		
Nara PBS-2 (Bhulta Grid)	123,000			998,000		
Total	131,696,481	120,324,060		120,847,613	115,879,914	

Name of Substation	May'18			June'18		
	Unit kWh(Purchase)	Total KWh(sold)	SL %	Unit kWh(Purchase)	Total KWh(sold)	SL %
Meghnaghat Grid-1	5,115,478	119,927,305	9.29	5,516,130	110,818,813	8.49
Meghnaghat Grid-2	2,849,392			3,148,307		
Meghnaghat Horipur	5,962,492			6,998,257		
Sonargaon Grid-1	10,788,960			9,420,000		
Sonargaon Grid-2	13,887,360			12,071,520		
Horipur GT-1	27,086,250			31,083,750		
Horipur GT-2	24,881,250			13,372,500		
PGCBL-Tartiary Aux3	20,810			37,020		
Summit Purbanchal PCL	22,520,880			19,147,320		
Rohim Energy Ltd	8,518,650			7,450,560		
Eversest Power G. CO	8,975,628			9,481,176		
A.M. Energy Ltd	-			-		
Meghna Energy Ltd	-			-		
Narayanganj PBS-2	28,646			43,235		
Nara PBS-2 (Bhulta R2)	-			-		
Nara PBS-2 (Bhulta Grid)	1,580,000			3,327,000		
Total	132,215,796	119,927,305		121,096,775	110,818,813	

Energy imports analysis has been shown in Table 4.1, 4.2, 4.3. Electricity demand in Bangladesh changes in some seasons, like as winter, summer, and rainy.

We try to show relevant analysis for winter and summer seasons. June 2016, the energy import is 367,430,911 units, May 2017, the energy import is 120,532,454 units, March 2018, the energy import is 131,216,026 units, which is high import from previous months and system loss is also comparatively low and it's an effect of summer season because in the summer, energy consumption of different consumer is high, especially for domestic side. Same as at March, 2016 the energy import is 102,627,942 units which is also quite high.

On the other hand, the energy import for the month of July, August, September, October, November, December, January and February are low to compare as other months of the year. It is seasonal effect of winter when the domestic consumer consume lower amount of electricity and same as some industries are consume lower amount of energy as per demand of production. In December 2015, the energy import is 67,429,546 units, In December 2016, the energy import is 99,084,150 units, In December 2017, the energy import is 112,482,169 units, which is low import from previous month and January 2016 and February 2016, January 2017 and February 2017, January 2018 and February 2018 the energy import quite same and the system loss is also quite same. Again the energy import demand is high for the month of March, April, May and June 2016. For June 2016, energy import is 367,430,911 units which is the highest amount of import for the year and the system loss is also comparatively high 1.98 MU. Also we present energy import scenario in this chapter by showing graphical figure.

4.4 Graphical Analysis

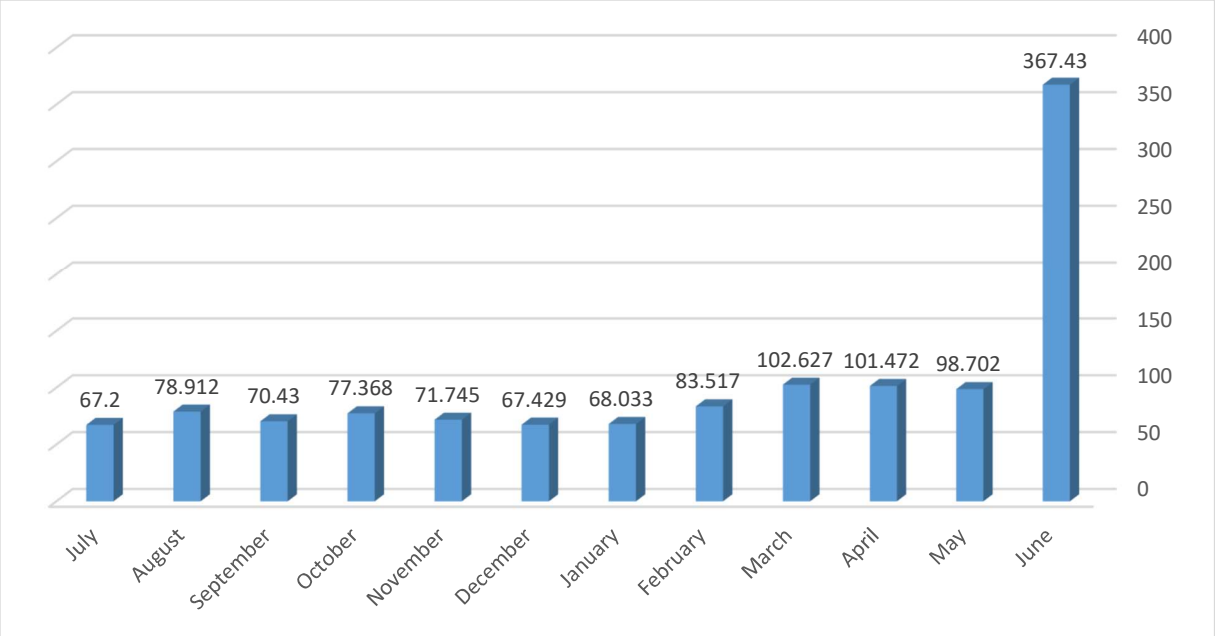


Fig 4.1: Month wise Energy Import (MU) of NPBS-1 (2015-2016)

The above graphical state shows that, the energy import is high in August, September 2015 and March, April, May, June 2016. On the other hand, energy import is comparatively low in July 2015, November, December 2015 and January, February 2016. Season to season the energy import and supply to the consumer may vary. Maximum import electricity in June 16 (2015-2016 fiscal year), because there is many new connected substation and more load Growing.

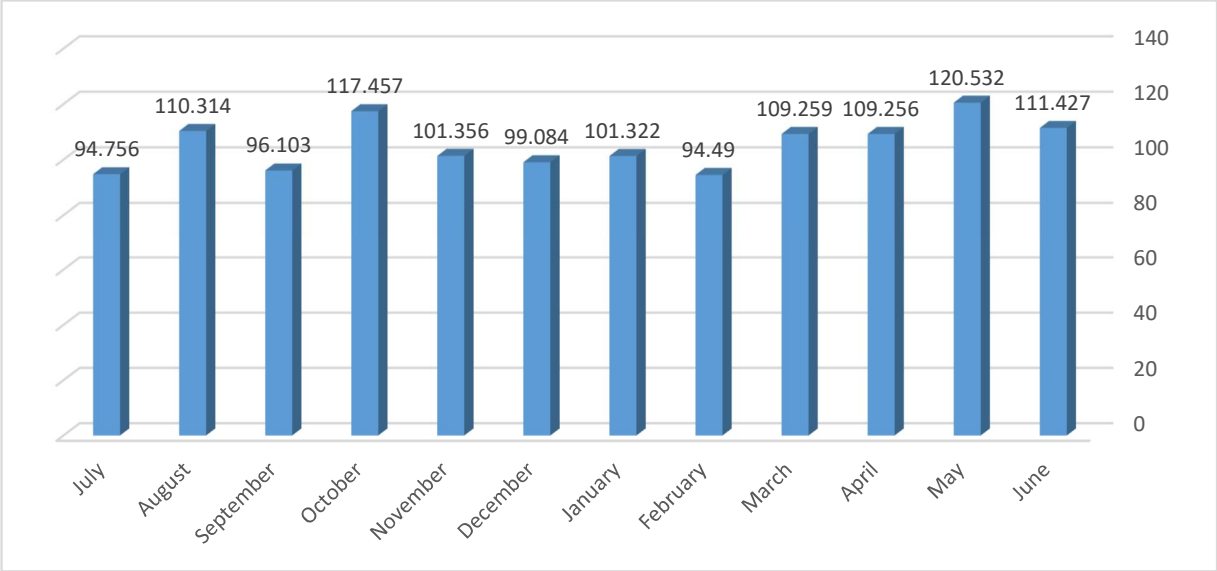


Fig 4.2: Month wise Energy Import (MU) of NPBS-1 (2016-2017)

The above graphical state shows that, the energy import is high in August, October 2016 and March, April, May, June 2017. On the other hand, energy import is comparatively low in July 2016, November, December 2016 and January, February 2017. Season to season the energy import and supply to the consumer may vary.

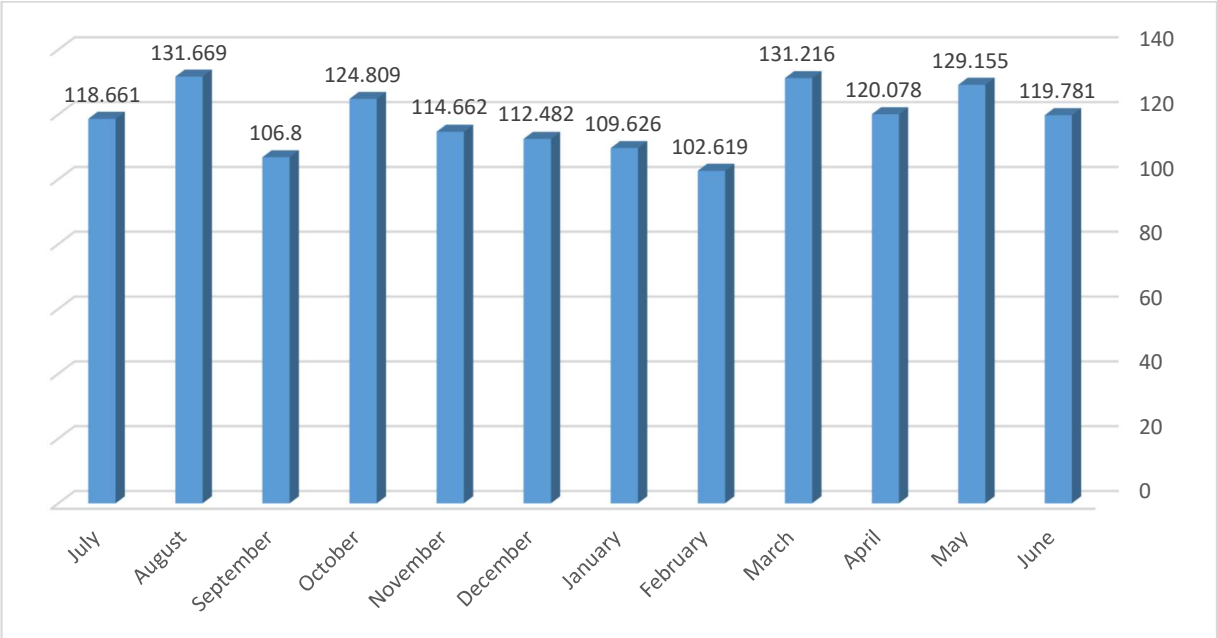


Fig 4.3: Month wise Energy Import (MU) of NPBS-1 (2017-2018)

The above graphical state shows that, the energy import is high in August, October 2017 and March, April, May, June 2018. On the other hand, energy import is comparatively low in July 2016, November, December 2017 and January, February 2018. Season to season the energy import and supply to the consumer may vary.

4.5 Substations of NPBS-1

There are 36 sub-stations under NPBS-1, which connected with various grids. Energy storage and consumption various form one substation to another substation based on the location, consumer demand, industrial zone, transmission distance and many factors. The imported energy may reduce during the transmission process due to system loss.

Below is the name of the NPBS-1 substation.

1. Sonargaon
2. Meghnaghat-1
3. Meghnaghat-2
4. Ananda Baza
5. Head Office
6. Noyapur
7. Modingonj-1
8. Modingonj-2
9. Modingonj-Dasergao
10. Tarabo-1
11. Tarabo-2
12. Borpa
13. Horipur GIS
14. BSIC Kanchpur
15. Bhulta-Kanchan
16. Bhulta-REB Ring-2
17. Horipur-Meghnaghat
18. Horipur-Narsingdi

19. Horipur-Kanchan
20. Horipur-Demra
21. Horipur-Rohim steel
22. Sonargaon-Meghnagh
23. Sonarhaon-Narsingdi
24. Horipur-PGCBL
25. Horipur-Sonargaon-1
26. BASIC Kannchpur
27. Nara PBS-2 HP GT-1
28. Nara PBS-2 SPPCL
29. Head Quarte Express
30. Narayanganj
31. Everest PGCL(33kv)
32. Ananda Baza(Othe)
33. Abdul Monem Ltd.
34. Kabilgonj SS
35. Akhalia SS
36. Horipur-Sonargaon-2

4.6 System Losses

Table 4.4: System Loss of NPBS-1 in 2015-16

Month	Grid Wise Import (MKWh)	Substation Wise Import (MKWh)	Unit Sold at Consumer End (MKWh)	33 KV Loss (MKWh)	Sub-station System Loss (MKWh)	Total System Loss (MKWh)
July	67.2	67.424	61.798	0.224	5.626	5.402
August	78.912	71.171	71.717	7.741	0.546	1.948
September	70.43	71.284	65.685	0.854	5.599	1.751
October	77.368	78.216	73.655	0.848	4.561	1.331
November	71.745	71.99	68.137	0.245	3.853	0.575
December	67.429	67.689	63.597	0.26	4.092	1.161
January	68.033	69.075	65.292	1.042	3.783	0.848
February	83.517	85.034	82.616	1.517	2.418	0.89
March	102.627	102.807	97.597	0.18	5.21	1.901
April	101.472	103.041	96.838	1.569	6.203	2.005
May	98.702	98.936	90.996	0.234	7.94	1.434
June	367.43	369.489	360.151	2.059	9.338	1.791

In Table 4.4, Total System Loss = Grid to sold energy at Consumer end,

Sub-station System Loss = Substation to Sold energy at Consumer end,

33 KV Line Loss = Energy loss between Grid and Sub-station.

We found it from table 4.4, Total loss of energy in summer is much higher than winter. Heat increases the line resistance and resistance makes the amount of loss higher. 33 KV Line losses are quite similar but sub-station system losses differ huge. Where form October 2015 to January 2016; during winter season, system losses were below than 2 MKWh. In July 2015 and June 2016; both of these in summer, we found the total system loss about 3 times higher than winter. PBS says illegal use of electricity is also responsible for this. Illegal use of electricity rise in summer very badly. That's why; loss is much higher in summer. PBS try to stop illegal use of electricity but public awareness can stop this "Thief Loss". PBS also has some loss for storms during summer and rainy season.

Table 4.5: System Loss of NPBS-1 in 2016-17

Month	Grid Wise Import (MKWh)	Substation Wise Import (MKWh)	Unit Sold at Consumer End (MKWh)	33 KV Loss (MKWh)	Sub-station System Loss (MKWh)	Total System Loss (MKWh)
July	94.756	94.945	90.269	0.189	4.676	4.487
August	110.314	110.463	103.964	0.149	6.499	1.948
September	96.103	96.511	91.002	0.408	5.509	1.751
October	117.457	117.637	111.165	0.18	6.472	1.331
November	101.356	101.619	99.431	0.263	2.188	0.575
December	99.084	105.784	95.924	6.7	9.86	1.161
January	101.322	99.93	98.952	1.392	0.978	0.848
February	94.49	93.457	92.483	1.033	0.974	0.89
March	109.259	106.628	103.796	2.631	2.832	1.901
April	109.256	110.813	101.794	1.557	9.019	2.005
May	120.532	122.047	110.44	1.515	11.607	1.434
June	111.427	112.575	101.499	1.148	11.076	1.791

In Table 4.5, Total System Loss = Grid to sold energy at Consumer end,

Sub-station System Loss = Substation to Sold energy at Consumer end,

33 KV Line Loss = Energy loss between Grid and Sub-station.

We found it from table 4.5, Total loss of energy in summer is much higher than winter. Heat increases the line resistance and resistance makes the amount of loss higher. 33 KV Line losses are quite similar but sub-station system losses differ huge. Where form October, 2016 to January, 2017; during winter season, system losses were below than 2 MKWh. In July 2016 and June 2017; both of these in summer, we found the total system loss about 3 times higher than winter. PBS says illegal use of electricity is also responsible for this. Illegal use of electricity rise in summer very badly. That's why; loss is much higher in summer. PBS try to stop illegal use of electricity but public awareness can stop this "Thief Loss". PBS also has some loss for storms during summer and rainy season.

Table 4.6: System Loss of NPBS-1 in 2017-18

Month	Grid Wise Import (MKWh)	Substation Wise Import (MKWh)	Unit Sold at Consumer End (MKWh)	33 KV Loss (MKWh)	Sub-station System Loss (MKWh)	Total System Loss (MKWh)
July	118.661	119.004	115.351	0.343	3.653	3.31
August	131.669	132.358	124.403	0.689	7.955	1.948
September	106.8	107.58	105.146	0.78	2.434	1.751
October	124.809	125.563	119.932	0.754	5.631	1.331
November	114.662	115.143	113.814	0.481	1.329	0.575
December	112.482	112.802	109.878	0.32	2.924	1.161
January	109.626	109.978	105.913	0.352	4.065	0.848
February	102.619	102.905	99.329	0.286	3.576	0.89
March	131.216	131.696	120.324	0.48	11.372	1.901
April	120.078	120.847	115.879	0.769	4.968	2.005
May	129.155	132.215	119.927	3.06	12.288	1.434
June	119.781	121.096	110.818	1.315	10.278	1.791

In Table 4.6, Total System Loss = Grid to sold energy at Consumer end,

Sub-station System Loss = Substation to Sold energy at Consumer end,

33 KV Line Loss = Energy loss between Grid and Sub-station.

We found it from table 4.6, Total loss of energy in summer is much higher than winter. Heat increases the line resistance and resistance makes the amount of loss higher. 33 KV Line losses are quite similar but sub-station system losses differ huge. Where form October, 2017 to January, 2018; during winter season, system losses were below than 2 MKWh. In July 2017 and June 2018; both of these in summer, we found the total system loss about 3 times higher than winter. PBS says illegal use of electricity is also responsible for this. Illegal use of electricity rise in summer very badly. That's why; loss is much higher in summer. PBS try to stop illegal use of electricity but public awareness can stop this "Thief Loss". PBS also has some loss for storms during summer and rainy season.

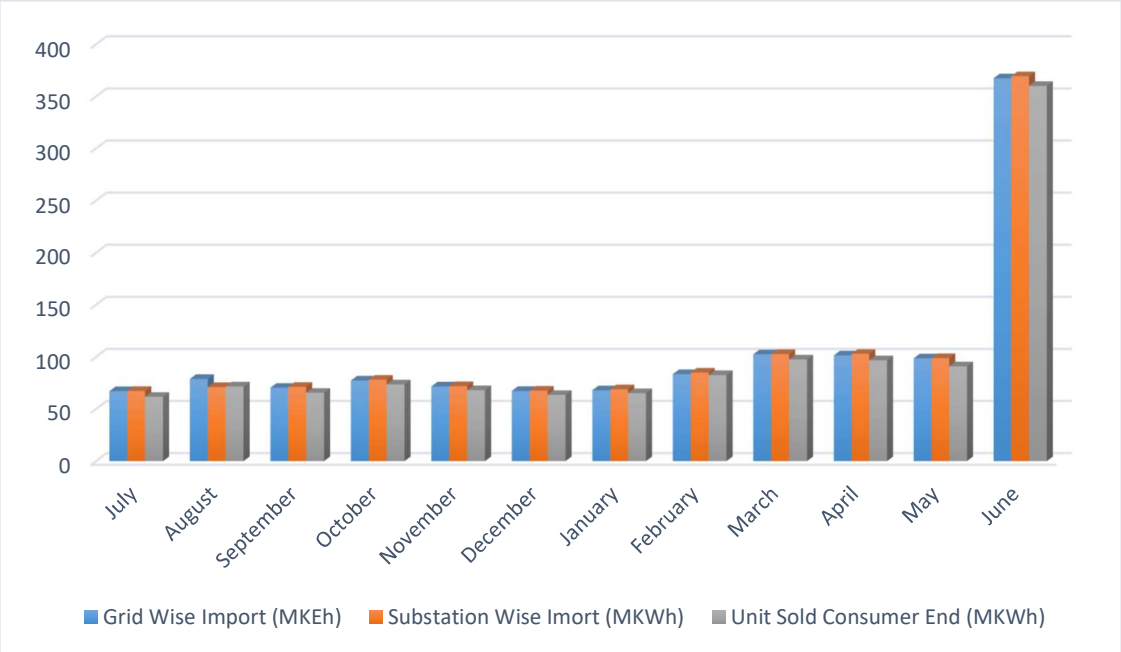


Fig 4.4: Grid and Sub-station wise import with Unit sold at consumer end (2015-2016)

We know that there are certain losses which affect the economy of the power system. It is a well-known fact that all energy supplied to a distribution utility does not reach the end consumer. A substantial amount of energy is lost in the distribution system by way of Technical and Non-Technical losses. The distribution system accounts for highest technical and non-technical losses in the power sector. In Bangladesh, the percentage of transmission and distribution losses has been quite high.

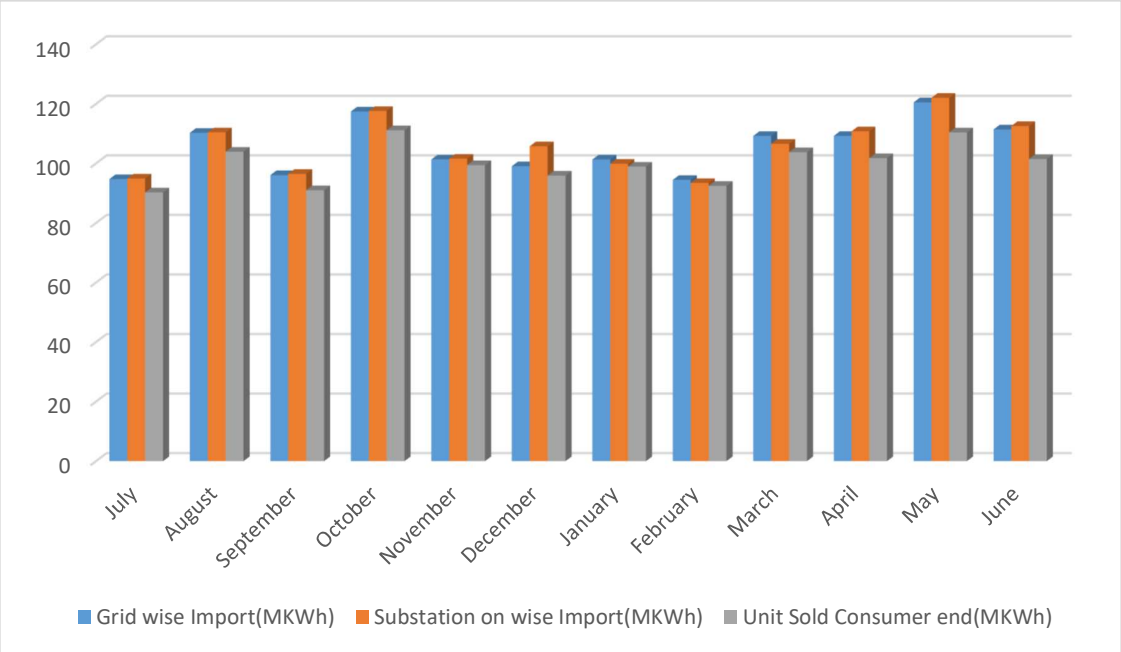


Fig 4.5: Grid and Sub-station wise import with Unit sold at consumer end (2016-2017)

We know that there are certain losses which affect the economy of the power system. It is a well-known fact that all energy supplied to a distribution utility does not reach the end consumer. A substantial amount of energy is lost in the distribution system by way of Technical and Non-Technical losses. The distribution system accounts for highest technical and non-technical losses in the power sector. In Bangladesh, the percentage of transmission and distribution losses has been quite high.

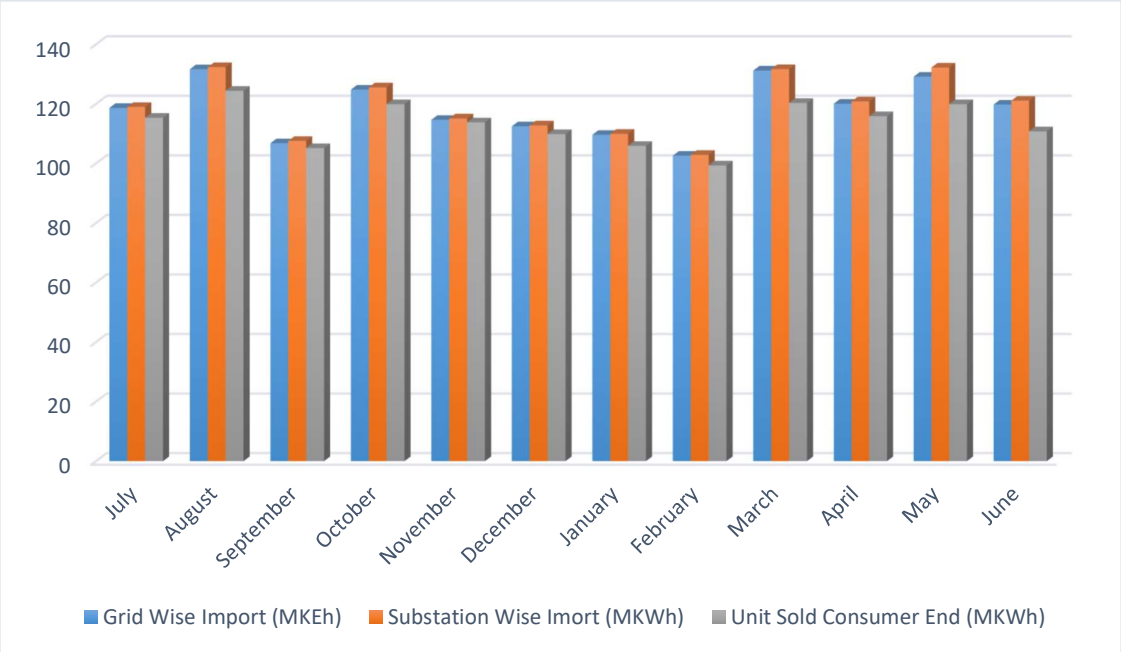


Fig 4.6: Grid and Sub-station wise import with Unit sold at consumer end (2017-2018)

We know that there are certain losses which affect the economy of the power system. It is a well-known fact that all energy supplied to a distribution utility does not reach the end consumer. A substantial amount of energy is lost in the distribution system by way of Technical and Non-Technical losses. The distribution system accounts for highest technical and non-technical losses in the power sector. In Bangladesh, the percentage of transmission and distribution losses has been quite high.

Distribution line losses are comprised of two types: Technical losses and Non-Technical losses.

4.6.1 Technical Losses

Technical losses in power system are caused by the physical properties of the components of the power system. The most obvious example is the power dissipated in transmission lines and transformers due to internal electrical resistance. The technical losses are due to energy dissipated in the conductors, equipment used for transmission line, transformer, sub transmission line and distribution line and magnetic losses in transformers.

4.6.2 Non-Technical Losses

Non-Technical losses, on the other hand, are caused by actions external to the power system or are caused by loads and condition that the Technical losses computation failed to take into account. Non- Technical losses are more difficult to measure because these losses are often unaccounted for by the system operators and thus have no recorded information. Non- Technical losses are more difficult to measure because these losses are often unaccounted for by the system operators and thus have no recorded information. For example, if a monthly-read meter is read incorrectly such that the consumption is one month is too low, when the meter is read correctly next month, there will be additional KWh recorded. The missing KWh will initially appear to be losses of electricity.

4.7 Summary

It is possible to control load demand by proper load management, encouraging Independent Power Producers (IPP) and reducing transmission loss. Initiative should be taken to develop skilled manpower required for the power sector considering incorporating IPP and local Government (GOV), central GOB, private sector may take the responsibility to increase the power generation and ensure its proper use in Bangladesh. The process of energy import and distribution of NPBS-1 is low from some other PBS. NPBS-1 tries to reduce their problems.

CHAPTER 5
Revenue and Consumers of Narayanganj PBS-1

5.1 Introduction

Electricity is the major source of power for most of the country's economic activities. The largest energy consumers in Bangladesh are industries and the residential sector, followed by the commercial and agricultural sectors. Bangladesh is considered one of the most arousing energy growth nations. Bangladesh has small reserves of oil and coal, but very large natural gas resources. Commercial energy consumption comes mostly from natural gas (around 66%), followed by oil, hydropower, and coal. Non-commercial energy sources, such as wood fuel, and crop residues, are estimated to account for over half of the country's energy consumption.

5.2 Description of Consumer Class

Consumer in every PBS under BREB based on their demand and category of energy use eight type's consumer class. Those classes are bellows

5.2.1 Domestic Consumers

Residential load consists of lights, fans, and appliances such as radios, TVs, heaters, electric irons, refrigerators, electric water heaters, washing machines, coolers, air-conditioners, domestic pump sets etc. Domestic consumers are given single phase supply up to a load of 5 kW and a 3-phase supply for load exceeding 5 kW. Domestic consumers are classified into eight slabs. These are types of the other consumer category are follows:

1. Minimum KWh
2. 0-50 KWh

3. 0-75 KWh
4. 76-200 KWh
5. 201-300 KWh
6. 301-400 KWh
7. 401-600 KWh
8. Above 600 KWh

5.2.2 Commercial Consumers

Non-residential premises, such as shops, business-houses, cinemas, hotels, public offices, clubs etc. fall under this category. The load mainly consists of lights, fans and small electric appliances. The load remains fairly constant from around morning 10 to evening 9 hours. During night the load may consist of some lighting load. The demand factor is fairly high. Such consumers are given single phase supply for loads up to 5 kW and three phase supply for loads exceeding 5 kW.

5.2.3 Charitable Institute

Charitable institutes are depends on charity of the Government or any private sector. Charitable institutes may any educational, religious or social development institutions. Types of consumer under this category will be as follows, Masjid, Temple, Church, Pagoda, School, College, Madrasah, Club, Orphanage, Charitable institution (Not complex), Charitable dispensary, Crippled rehabilitation center etc.

5.2.4 Irrigation

Consumers drawing power up to 20 kW for irrigation pumping units are categorized as agricultural consumers. Such consumers are given a three phase supply. The loads of the tube wells used for irrigation constitute a substantial portion of the system load. The demand factor and diversity factor are both almost unity.

5.2.5 General Power

Industrial consumers may further be categorized as small industrial consumers, medium industrial consumers and large industrial consumers according to the rating of loads.

Generally Palli Bidyut Samity will implement secondary metering (L.T. metering) for such types of consumer where supply voltage will be 230/400 V and power will be 50KW.Types of consumer under this category will be as follows:

All types of industries and industrial complex, Government office complex, Government and charitable hospital complex, Charitable, religious and education complex, Small Industries related to production or fabrication, Union Paribar Kalian Kendra, Cantonment, air or naval base/installation, Police station, Camp, Outpost etc. and BDR Camp, BOP Installation etc.

5.2.6 Large Power

This category relates to supply of power to industries with a contract demand, where power is substantially utilized as motive force for industrial production. Types of consumer under this category will be as follows:

All types of industries and industrial complex, Government office complex, Government and charitable hospital complex, Charitable, religious and education complex, Small Industries related to production or fabrication, Cantonment, Air or Naval base/installation etc. Police station, BDR Camp, BOP Installation etc.

5.2.7 33KV

DPDC sources said a 33/11 KV substation was launched. Narayanganj district has become the first place in Bangladesh with a guaranteed electricity supply after the Dhaka Power Distribution Company (DPDC) opened a new substation. This category relates to supply of power to industries with a contract demand above where power is substantially utilized as a motive force. The radial type system is the simplest and the one most commonly used.

5.2.8 Street Lights

Power supply given for the lighting of parks, roads and streets under the municipal committees, municipal boards or panchayats comes under this category. The switching on the lights and their switching off is synchronized with dusk and dawn respectively. Separate distributors are run for street lighting to enable their switching simultaneously.

5.3 Description of Table and its Analysis

In making of revenue sheet we use Electricity rate, used electricity in KWh, Consumer class, and revenue in monthly and finally we calculate it in yearly. In analysis part we want to show that rate changing of electricity, Number of consumer and its increment or decrement in monthly, used electricity in KWh and its monthly status and revenue increment or decrement in monthly. From these analysis we will see that the present condition of the revenue of BREB.

Table 5.1: Monthly Revenue data of NPBS-1

Customer Class	Rate Tariff	July					
	Present	Unit	%	Consumers	%	Revenue	%
Domestic							
Minimum	0	71655	0.12	4160	3.09	374,400	0.09
0-50	3.62	1710997	2.84	26676	19.80	6,522,969	1.65
0-75	3.87	2885166	4.79	35982	26.71	12,065,142	3.05
76-200	5.01	15389680	25.56	57949	43.02	78,551,022	19.84
201-300	5.19	2066275	3.43	8025	5.96	10,924,592	2.76
301-400	5.42	577665	0.96	1136	0.84	3,159,344	0.80
401-600	8.51	164300	0.27	514	0.38	1,411,043	0.36
600++	9.93	101365	0.17	260	0.19	1,013,054	0.26
Total	0	**22967103**	38.15	134702	**100**	**114021566**	**28.79**
Commercial	9.58	1891631	3.14	5588		18,534,702	4.68
Charitable	4.98	392209	0.65	1586		2,036,285	0.51
Irrigation	3.73	16075	0.03	109		65,967	0.02
General Power	7.42	2862534	4.75	1550		22,057,030	5.57
Large Power	7.32	13017387	21.62	467		100,609,158	25.41
Street Light	6.93	11361	0.02	48.00		80,091	0.02
33 KV	7.2	19047277	31.64	36		138,575,973	35.00
Grand Total		**60205577**	**100**	**144086**		**395980772**	**100**

Customer Class	Rate Tariff	August							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	77868	0	8.67	4619	3.35	11.03	415,710	0.09
0-50	3.62	2003712	3	17.11	28893	20.98	8.31	7,975,762	1.72
0-75	3.87	2919820	4	1.20	36982	26.86	2.78	12,224,253	2.64
76-200	5.01	15470992	22	0.53	56749	41.21	-2.07	78,928,395	17.01
201-300	5.19	1852860	3	-10.33	8513	6.18	6.08	9,829,168	2.12
301-400	5.42	367055	1	-36.46	1197	0.87	5.37	2,019,363	0.44
401-600	8.51	104345	0	-36.49	498	0.36	-3.11	900,426	0.19
600++	9.93	141880	0	39.97	256	0.19	-1.54	1,415,268	0.31
Total	0	**22938532**	**33**	-0.12	**137707**	**100**	2.23	**113708345**	**24.51**
Commercial	9.58	1905810	3	0.75	5623		0.63	18,714,518	4.03
Charitable	4.98	389313	1	-0.74	1594		0.50	2,040,120	0.44
Irrigation	3.73	14473	0	-9.97	85		-22.02	60,209	0.01
General Power	7.42	3852611	6	34.59	1561		0.71	29,510,692	6.36
Large Power	7.32	18900599	27	45.20	465		-0.43	141,530,380	30.51
Street Light	6.93	10893	0	-4.12	48		0.00	78,970	0.02
33 KV	7.2	21878142	31	14.86	36		0.00	158,258,670	34.11
Grand Total		**69890373**	**100**	16.09	**147119**		2.10	**463901904**	**100**

Customer Class	Rate Tariff	September							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	75945	0	-2.47	4731	3.36	2.42	425,790	0.10
0-50	3.62	2393615	4	19.46	30029	21.35	3.93	9,415,611	2.19
0-75	3.87	2806178	4	-3.89	32892	23.39	-11.06	11,682,209	2.72
76-200	5.01	15766200	25	1.91	59013	41.96	3.99	80,463,987	18.72
201-300	5.19	2270730	4	22.55	10313	7.33	21.14	12,042,914	2.80
301-400	5.42	649028	1	76.82	1800	1.28	50.38	3,562,732	0.83
401-600	8.51	394757	1	278.32	970	0.69	94.78	3,383,632	0.79
600++	9.93	70800	0	-50.10	881	0.63	244.14	725,069	0.17
Total	0	**24427253**	**38**	6.49	**140629**	**100**	2.12	**121701944**	**28.31**
Commercial	9.58	2069243	3	8.58	5692		1.23	20,422,493	4.75
Charitable	4.98	440385	1	13.12	1609		0.94	2,279,484	0.53
Irrigation	3.73	18060	0	24.78	75		-11.76	74,130	0.02
General Power	7.42	3185011	5	-17.33	1570		0.58	25,163,570	5.85
Large Power	7.32	15321309	24	-18.94	467		0.43	120,310,500	27.98
Street Light	6.93	11678	0	7.21	48		0.00	86,358	0.02
33 KV	7.2	18494602	29	-15.47	36		0.00	139,888,173	32.54
Grand Total		**63967541**	**100**	-8.47	**150126**		2.04	**429926652**	**100**

Customer Class	Rate Tariff	October							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	79873	0	5.17	4992	3.47	5.52	449,280	0.09
0-50	3.62	3801977	5	58.84	31920	22.17	6.30	14,561,157	2.97
0-75	3.87	4041900	6	44.04	33189	23.05	0.90	16,188,945	3.30
76-200	5.01	11871800	17	-24.70	58859	40.88	-0.26	62,492,527	12.76
201-300	5.19	2998000	4	32.03	10016	6.96	-2.88	16,319,680	3.33
301-400	5.42	1230171	2	89.54	3154	2.19	75.22	7,004,713	1.43
401-600	8.51	501422	1	27.02	980	0.68	1.03	4,386,871	0.90
600++	9.93	411895	1	481.77	863	0.60	-2.04	4,132,287	0.84
Total	0	**24937038**	**35**	2.09	**143973**	**100**	2.38	**125535460**	**25.62**
Commercial	9.58	2002316	3	-3.23	5784		1.62	20,113,290	4.11
Charitable	4.98	402854	1	-8.52	1636		1.68	2,188,154	0.45
Irrigation	3.73	19952	0	10.48	69		-8.00	79,344	0.02
General Power	7.42	3554580	5	11.60	1571		0.06	27,995,345	5.71
Large Power	7.32	18733441	26	22.27	474		1.50	145,749,023	29.75
Street Light	6.93	12758	0	9.25	48		0.00	93,610	0.02
33 KV	7.2	22277240	31	20.45	36		0.00	168,175,887	34.33
Grand Total		**71940179**	**100**	12.46	**153591**		2.31	**489930113**	**100**

Customer Class	Rate Tariff	November							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	92265	0	15.51	8275	5.63	65.77	744,750	0.16
0-50	3.62	1848960	3	-51.37	38520	26.21	20.68	7,656,235	1.65
0-75	3.87	4842809	7	19.82	33593	22.86	1.22	19,242,499	4.15
76-200	5.01	7907821	12	-33.39	52913	36.01	-10.10	41,969,025	9.04
201-300	5.19	2531500	4	-15.56	8926	6.07	-10.88	13,791,990	2.97
301-400	5.42	1203900	2	-2.14	3154	2.15	0.00	6,856,806	1.48
401-600	8.51	316685	0	-36.84	911	0.62	-7.04	2,777,935	0.60
600++	9.93	64654	0	-84.30	648	0.44	-24.91	661,447	0.14
Total	0	**18808594**	**28**	-24.58	**146940**	**100**	2.06	**93700687**	**20.19**
Commercial	9.58	1688217	3	-15.69	5878		1.63	17,011,341	3.67
Charitable	4.98	346587	1	-13.97	1663		1.65	1,898,757	0.41
Irrigation	3.73	16311	0	-18.25	69		0.00	64,594	0.01
General Power	7.42	3622748	5	1.92	1564		-0.45	28,560,896	6.15
Large Power	7.32	16050778	24	-14.32	474		0.00	125,937,999	27.14
Street Light	6.93	12707	0	-0.40	47		-2.08	93,089	0.02
33 KV	7.2	26147273	39	17.37	34		-5.56	196,816,380	42.41
Grand Total		**66693215**	**100**	-7.29	**156669**		2.00	**464083743**	**100**

Customer Class	Rate Tariff	December							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	220308	0	138.78	14412	9.56	74.16	1,297,079	0.29
0-50	3.62	1871844	3	1.24	39426	26.15	2.35	7,761,725	1.76
0-75	3.87	4893527	8	1.05	41358	27.43	23.11	19,629,353	4.46
76-200	5.01	5442186	9	-31.18	47955	31.81	-9.37	29,171,711	6.62
201-300	5.19	1148804	2	-54.62	5470	3.63	-38.72	6,294,339	1.43
301-400	5.42	302380	0	-74.88	989	0.66	-68.64	1,759,599	0.40
401-600	8.51	140920	0	-55.50	765	0.51	-16.03	1,245,129	0.28
600++	9.93	40569	0	-37.25	381	0.25	-41.20	414,404	0.09
Total	0	**14060538**	**23**	-25.24	**150756**	**100**	2.60	**67573339**	**15.34**
Commercial	9.58	1528355	2	-9.47	5965		1.48	15,486,813	3.51
Charitable	4.98	226092	0	-34.77	1675		0.72	1,277,790	0.29
Irrigation	3.73	14938	0	-8.42	75		8.70	59,409	0.01
General Power	7.42	3488173	6	-3.71	1561		-0.19	27,376,850	6.21
Large Power	7.32	15655447	25	-2.46	474		0.00	122,782,945	27.87
Street Light	6.93	14448	0	13.70	45		-4.26	105,866	0.02
33 KV	7.2	27247790	44	4.21	34		0.00	205,945,649	46.74
Grand Total		**62235781**	**100**	-6.68	**160585**		2.50	**440608661**	**100**

Customer Class	Rate Tariff	January							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	253673	0	15.14	16366	10.63	13.56	1,472,941	0.33
0-50	3.62	2090083	3	11.66	43637	28.33	10.68	8,657,025	1.92
0-75	3.87	3981197	6	-18.64	40229	26.12	-2.73	16,134,274	3.57
76-200	5.01	4776720	7	-12.23	45934	29.82	-4.21	25,700,691	5.69
201-300	5.19	1181159	2	2.82	5624	3.65	2.82	6,471,612	1.43
301-400	5.42	395250	1	30.71	1275	0.83	28.92	2,257,133	0.50
401-600	8.51	124950	0	-11.33	714	0.46	-6.67	1,104,915	0.24
600++	9.93	22230	0	-45.20	234	0.15	-38.58	227,705	0.05
Total	0	**12825262**	**20**	-8.79	**154013**	**100**	2.16	**62026296**	**13.74**
Commercial	9.58	1632315	3	6.80	6078		1.89	16,522,317	3.66
Charitable	4.98	199781	0	-11.64	1695		1.19	1,153,560	0.26
Irrigation	3.73	236297	0	1481.85	384		412.00	914,666	0.20
General Power	7.42	3736790	6	7.13	1568		0.45	29,520,067	6.54
Large Power	7.32	15133708	24	-3.33	475		0.21	115,475,299	25.58
Street Light	6.93	13217	0	-8.52	46		2.22	98,249	0.02
33 KV	7.2	30049814	47	10.28	34		0.00	225,667,268	50.00
Grand Total		**63827184**	**100**	2.56	**164293**		2.31	**451377722**	**100**

Customer Class	Rate Tariff	February							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	270240	0	6.53	16279	10.37	-0.53	1,465,110	0.32
0-50	3.62	2236541	3	7.01	46169	29.42	5.80	9,250,501	2.02
0-75	3.87	4320976	7	8.53	41906	26.70	4.17	17,467,359	3.82
76-200	5.01	4720690	7	-1.17	44579	28.41	-2.95	25,378,822	5.55
201-300	5.19	1184868	2	0.31	5724	3.65	1.78	6,493,992	1.42
301-400	5.42	406468	1	2.84	1324	0.84	3.84	2,321,515	0.51
401-600	8.51	97410	0	-22.04	709	0.45	-0.70	865,192	0.19
600++	9.93	20540	0	-7.60	244	0.16	4.27	211,089	0.05
Total	0	**13257733**	**20**	3.37	**156934**	**100**	1.90	**63453580**	**13.87**
Commercial	9.58	1691742	3	3.64	6143		1.07	17,113,122	3.74
Charitable	4.98	214897	0	7.57	1709		0.83	1,240,102	0.27
Irrigation	3.73	922718	1	290.49	577		50.26	3,542,299	0.77
General Power	7.42	3863798	6	3.40	1561		-0.45	30,420,955	6.65
Large Power	7.32	14920740	23	-1.41	479		0.84	116,425,776	25.46
Street Light	6.93	13175	0	-0.32	46		0.00	97,355	0.02
33 KV	7.2	29804651	46	-0.82	34		0.00	225,067,978	49.21
Grand Total		**64689454**	**100**	1.35	**167483**		1.94	**457361167**	**100**

Customer Class	Rate Tariff	March							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	172578	0	-36.14	12327	7.70	-24.28	1,109,430	0.21
0-50	3.62	2030578	3	-9.21	44043	27.53	-4.60	8,451,767	1.63
0-75	3.87	5335750	7	23.48	47836	29.90	14.15	21,471,750	4.13
76-200	5.01	8389866	11	77.73	45328	28.33	1.68	44,257,111	8.51
201-300	5.19	1649585	2	39.22	6791	4.24	18.64	9,011,551	1.73
301-400	5.42	759990	1	86.97	2203	1.38	66.39	4,333,819	0.83
401-600	8.51	153795	0	57.88	1011	0.63	42.60	1,363,292	0.26
600++	9.93	50900	0	147.81	466	0.29	90.98	519,632	0.10
Total	0	**18543042**	**25**	39.87	**160005**	**100**	1.96	**90518352**	**17.41**
Commercial	9.58	1914912	3	13.19	6225		1.33	19,290,127	3.71
Charitable	4.98	325533	0	51.48	1721		0.70	1,817,444	0.35
Irrigation	3.73	930741	1	0.87	580		0.52	3,586,254	0.69
General Power	7.42	3926763	5	1.63	1558		-0.19	29,830,297	5.74
Large Power	7.32	15251038	20	2.21	476		-0.63	117,816,683	22.66
Street Light	6.93	16368	0	24.24	48		4.35	119,905	0.02
33 KV	7.2	34129211	45	14.51	36		5.88	257,057,822	49.43
Grand Total		**75037608**	**100**	16.00	**170649**		1.89	**520036884**	**100**

Customer Class	Rate Tariff	April							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	127104	0	-26.35	9083	5.56	-26.32	817,470	0.16
0-50	3.62	1611960	2	-20.62	40299	24.65	-8.50	6,842,770	1.34
0-75	3.87	6031338	8	13.04	43516	26.62	-9.03	24,006,984	4.71
76-200	5.01	10911710	15	30.06	55957	34.23	23.45	57,485,114	11.27
201-300	5.19	2731505	4	65.59	10112	6.19	48.90	14,893,667	2.92
301-400	5.42	788139	1	3.70	2507	1.53	13.80	4,499,896	0.88
401-600	8.51	203334	0	32.21	1532	0.94	51.53	1,807,306	0.35
600++	9.93	52975	0	4.08	485	0.30	4.08	540,818	0.11
Total	0	**22458065**	**30**	21.11	**163491**	**100**	2.18	**110894025**	**21.74**
Commercial	9.58	2259181	3	17.98	6346		1.94	22,680,762	4.45
Charitable	4.98	422573	1	29.81	1740		1.10	2,304,959	0.45
Irrigation	3.73	582323	1	-37.43	581		0.17	2,253,415	0.44
General Power	7.42	3919534	5	-0.18	1569		0.71	30,755,057	6.03
Large Power	7.32	15023317	20	-1.49	479		0.63	116,823,202	22.91
Street Light	6.93	17223	0	5.22	50		4.17	122,414	0.02
33 KV	7.2	29677953	40	-13.04	36		0.00	224,198,391	43.96
Grand Total		**74360169**	**100**	-0.90	**174292**		2.13	**510032225**	**100**

Customer Class	Rate Tariff	May							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	98172	0	-22.76	8111	4.87	-10.70	729,990	0.15
0-50	3.62	1686832	2	4.64	39009	23.41	-3.20	7,081,559	1.44
0-75	3.87	6117591	8	1.43	45737	27.45	5.10	24,390,271	4.95
76-200	5.01	10951901	15	0.37	57374	34.43	2.53	57,727,121	11.72
201-300	5.19	3082937	4	12.87	11413	6.85	12.87	16,809,867	3.41
301-400	5.42	1049425	1	33.15	3229	1.94	28.80	5,988,988	1.22
401-600	8.51	174536	0	-14.16	1299	0.78	-15.21	1,550,938	0.31
600++	9.93	52101	0	-1.65	477	0.29	-1.65	531,893	0.11
Total	0	**23213495**	**32**	3.36	**166649**	**100**	1.93	**114810627**	**23.30**
Commercial	9.58	1867345	3	-17.34	6430		1.32	18,845,535	3.83
Charitable	4.98	418096	1	-1.06	1754		0.80	2,276,710	0.46
Irrigation	3.73	67325	0	-88.44	569		-2.07	336,584	0.07
General Power	7.42	3027902	4	-22.75	1568		-0.06	24,054,676	4.88
Large Power	7.32	19710016	27	31.20	486		1.46	152,511,864	30.96
Street Light	6.93	11495	0	-33.26	48		-4.00	85,234	0.02
33 KV	7.2	23771245	33	-19.90	36		0.00	179,736,058	36.48
Grand Total		**72086919**	**100**	-3.06	**177540**		1.86	**492657288**	**100**

Customer Class	Rate Tariff	June							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	119686	0	21.91	7979	4.72	-1.63	718,110	0.13
0-50	3.62	1870168	2	10.87	39126	23.14	0.30	7,748,159	1.40
0-75	3.87	6332281	8	3.51	46955	27.77	2.66	25,236,543	4.57
76-200	5.01	10957340	14	0.05	58092	34.36	1.25	57,773,028	10.46
201-300	5.19	3017510	4	-2.12	11813	6.99	3.50	16,469,179	2.98
301-400	5.42	1057600	1	0.78	3305	1.95	2.35	6,036,913	1.09
401-600	8.51	169650	0	-2.80	1305	0.77	0.46	1,508,580	0.27
600++	9.93	48804	0	-6.33	498	0.29	4.40	499,514	0.09
Total	0	**23573039**	**29**	1.55	**169073**	**100**	1.45	**115990026**	**20.99**
Commercial	9.58	2008622	3	7.57	6512		1.28	20,227,630	3.66
Charitable	4.98	408955	1	-2.19	1776		1.25	2,256,972	0.41
Irrigation	3.73	21343	0	-68.30	135		-76.27	84,768	0.02
General Power	7.42	3733743	5	23.31	1561		-0.45	29,373,972	5.32
Large Power	7.32	21207359	26	7.60	490		0.82	163,562,480	29.60
Street Light	6.93	11695	0	1.74	48		0.00	87,761	0.02
33 KV	7.2	29295589	37	23.24	36		0.00	220,996,109	39.99
Grand Total		**80260345**	**100**	11.34	**179631**		1.18	**552579718**	**100**

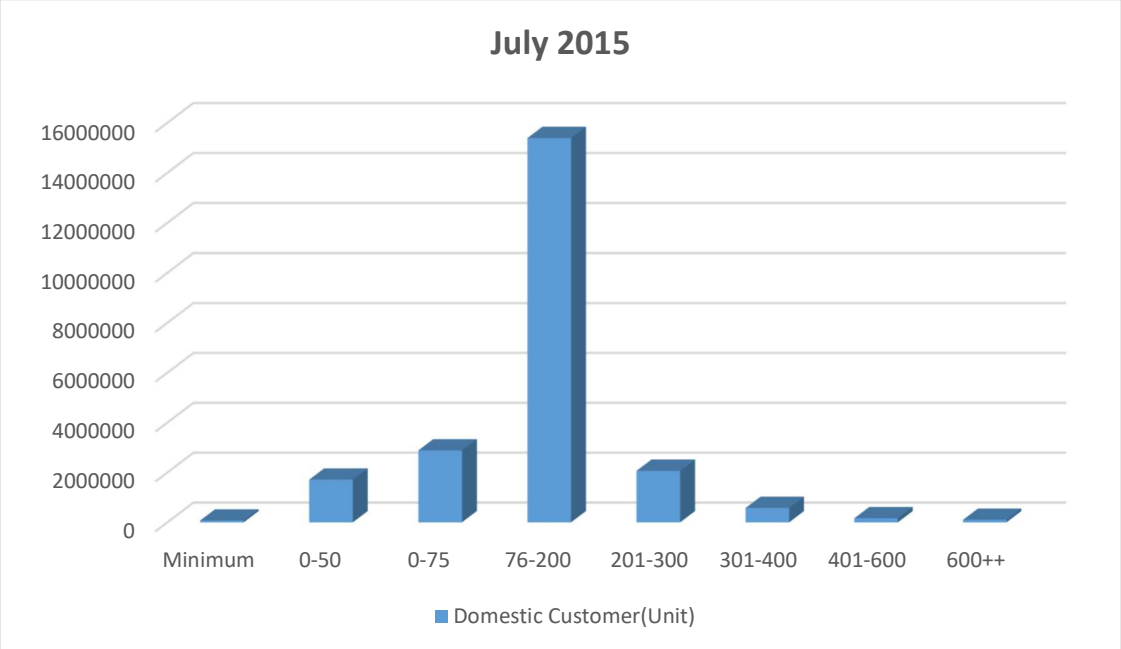


Fig: 5.1 Monthly Revenue data of NPBS-1

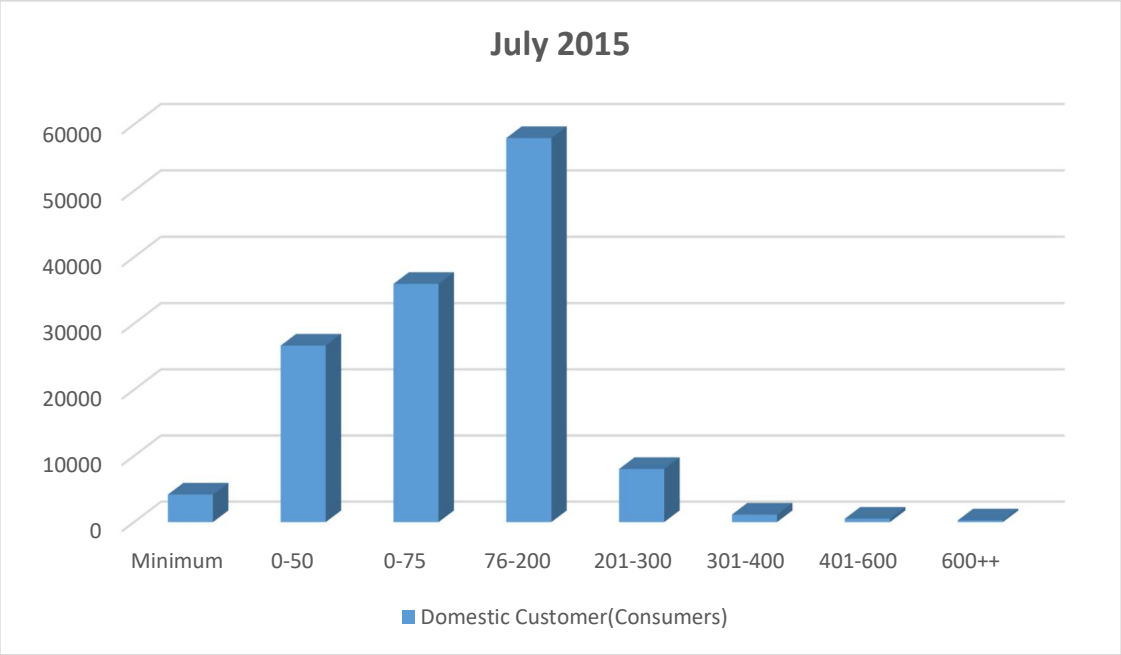


Fig: 5.2 Monthly Revenue data of NPBS-1

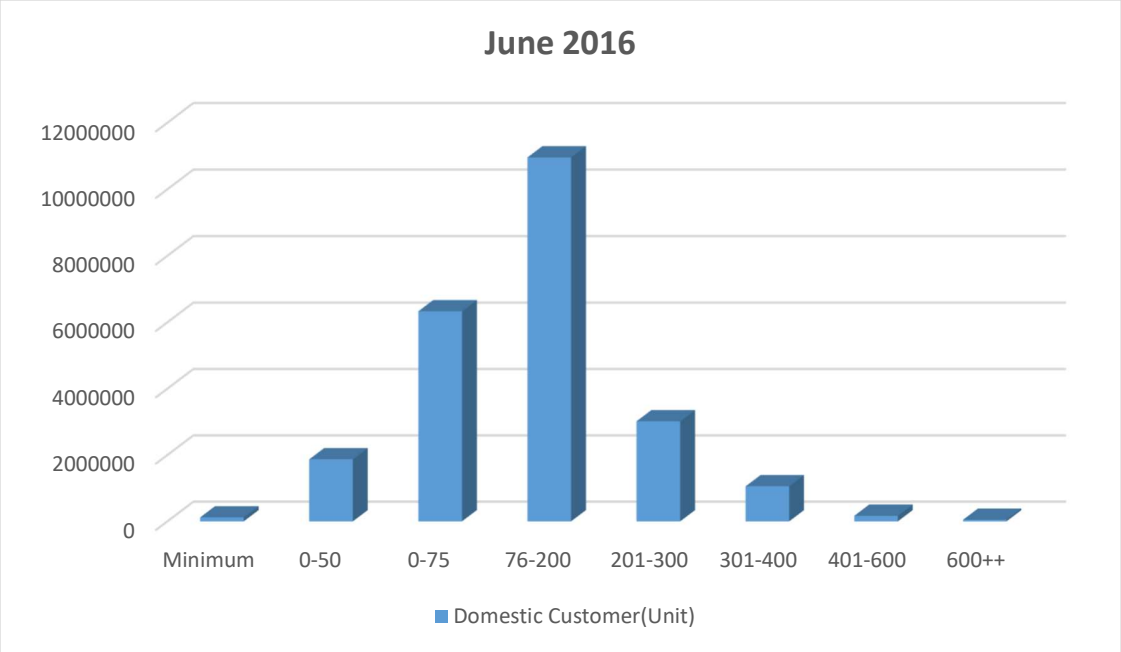


Fig: 5.3 Monthly Revenue data of NPBS-1

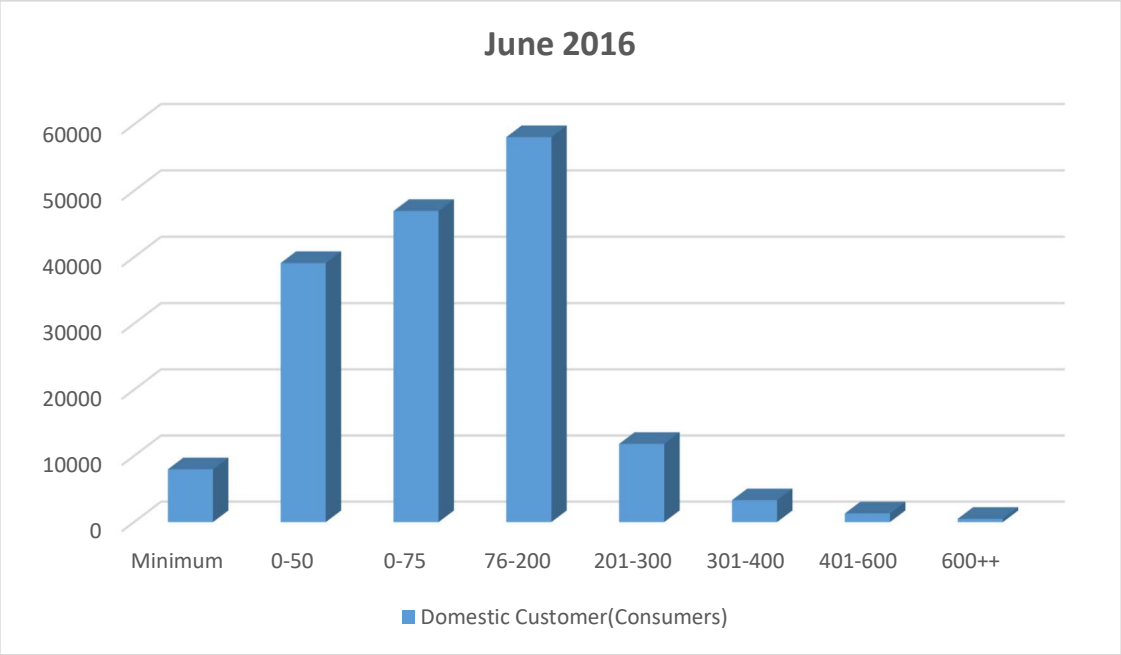


Fig: 5.4 Monthly Revenue data of NPBS-1

If we look at the month of July 2015 consumed 60205577 Units, Units 22967103 has been used by domestic consumers. Total Number of consumer 134702 and total revenue 114021566 TK where minimum slab was 71655 units, Number of consumer 4160 and revenue 374,400 TK.

In 0-50 total consumed 1710997 units, Number of total consumer 26676 and total revenue 6,522,969 TK. In 0-75 total consumed 2885166 units, Number of total consumer 35982 and total revenue 12,065,142 TK. In 76-200 total consumed 15389680 units, Number of total consumer 57949 and total revenue 78,551,022 TK. In 201-300 total consumed 2066275 units, Number of total consumer 8025 and total revenue 10,924,592 TK. In 301-400 total consumed 577665 units, Number of total consumer 1136 and total revenue 3,159,344 TK. In 401-600 total consumed 164300 units, Number of total consumer 514 and total revenue 1,411,043 TK. In 600 plus total consumed 101365 units, Number of total consumer 260 and total revenue 1,013,054 TK.

In Commercial total consumed 1891631 units, Number of total consumer 5588 and total revenue 18,534,702 TK. In Charitable total consumed 392209 units, Number of total consumer 1586 and total revenue 2,036,285 TK. In Irrigation total consumed 16075 units,

Number of total consumer 109 and total revenue 65,967 TK. In General Power total consumed 2862534 units, Number of total consumer 1550 and total revenue 22,057,030 TK. In Large Power total consumed 13017387 units, Number of total consumer 467 and total revenue 100,609,158 TK. In Street Light total consumed 11361 units, Number of total consumer 48.00 and total revenue 80,091 TK. In 33 KV total consumed 19047277 units, Number of total consumer 36 and total revenue 138,575,973 TK.

Again if we look at the month of June 2016 consumed 80260345 Units, Units 23573039 has been used by domestic consumers. Total Number of consumer 169073 and total revenue 115990026 TK where minimum slab was119686 units, Number of consumer7979 and revenue 718,110 TK.

In 0-50 total consumed1870168 units, Number of total consumer 39126 and total revenue 7,748,159 TK. In 0-75 total consumed 6332281 units, Number of total consumer 46955 and total revenue 25,236,543 TK. In 76-200 total consumed 10957340 units, Number of total consumer 58092 and total revenue 57,773,028 TK. In 201-300 total consumed3017510 units, Number of total consumer 11813 and total revenue 16,469,179 TK. In 301-400 total consumed 1057600 units, Number of total consumer 3305 and total revenue 6,036,913 TK. In 401-600 total consumed 169650 units, Number of total consumer 1305 and total revenue 1,508,580 TK. In 600plus total consumed 48804 units, Number of total consumer 498 and total revenue 499,514 TK.

In Commercial total consumed 2008622 units, Number of total consumer 6512 and total revenue 20,227,630 TK. In Charitable total consumed 408955 units, Number of total consumer 1776 and total revenue 2,256,972 TK. In Irrigation total consumed 21343 units, Number of total consumer 135 and total revenue 84,768 TK. In General Power total consumed 3733743 units, Number of total consumer 1561 and total revenue 29,373,972 TK. In Large Power total consumed 21207359 units, Number of total consumer 490 and total revenue 163,562,480 TK. In Street Light total consumed 11695 units, Number of total consumer 48 and total revenue 87,761 TK. In 33 KV total consumed 29295589 units, Number of total consumer 36 and total revenue 220,996,109 TK.

Table 5.2: Monthly Revenue data of NPBS-1

Customer Class	Rate Tariff	July					
	Present	Unit	%	Consumers	%	Revenue	%
Domestic							
Minimum	0	52122	0.07	7125	4.15	641,250	0.14
0-50	3.62	1870769	2.65	39908	23.26	7,769,885	1.64
0-75	3.87	6752228	9.55	35549	20.72	26,547,191	5.60
76-200	5.01	11888663	16.81	62270	36.29	62,664,478	13.22
201-300	5.19	4605930	6.51	16191	9.44	25,092,560	5.29
301-400	5.42	2719280	3.85	7429	4.33	15,495,271	3.27
401-600	8.51	531529	0.75	2284	1.33	4,681,402	0.99
600++	9.93	75120	0.11	835	0.49	770,573	0.16
Total	0	**28495641**	40.30	171591	**100.00**	**143662610**	**30.31**
Commercial	9.58	2290125	3.24	6607		22,992,390	4.85
Charitable	4.98	506107	0.72	1792		2,746,127	0.58
Irrigation	3.73	14555	0.02	55		67,269	0.01
General Power	7.42	3206779	4.54	1555		25,412,065	5.36
Large Power	7.32	14117993	19.97	494		110,146,905	23.24
Street Light	6.93	27436	0.04	63.00		199,631	0.04
33 KV	7.2	22050942	31.19	37		168,696,585	35.60
Grand Total		**70709578**	**100.00**	**182194**		**473923582**	**100.00**

Customer Class	Rate Tariff	August							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	124251	0.15	138.38	7681	4.41	7.80	691,290	0.12
0-50	3.62	1447449	1.75	-22.63	29801	17.11	-25.33	5,984,790	1.05
0-75	3.87	7423773	8.98	9.95	49596	28.48	39.51	29,450,237	5.19
76-200	5.01	10690539	12.94	-10.08	60282	34.62	-3.19	56,456,420	9.95
201-300	5.19	3458600	4.18	-24.91	17293	9.93	6.81	18,983,384	3.35
301-400	5.42	1811300	2.19	-33.39	6371	3.66	-14.24	10,380,774	1.83
401-600	8.51	309475	0.37	-41.78	2165	1.24	-5.21	2,762,788	0.49
600++	9.93	50800	0.06	-32.37	935	0.54	11.98	543,679	0.10
Total	0	**25316187**	**30.63**	-11.16	**174124**	**100**	1.48	**125253362**	**22.07**
Commercial	9.58	2194949	2.66	-4.16	6724		1.77	22,049,570	3.89
Charitable	4.98	486190	0.59	-3.94	1811		1.06	2,641,748	0.47
Irrigation	3.73	12748	0.02	-12.41	48		-12.73	52,817	0.01
General Power	7.42	3911573	4.73	21.98	1567		0.77	30,666,212	5.40
Large Power	7.32	24080369	29.14	70.57	497		0.61	185,271,041	32.65
Street Light	6.93	31916	0.04	16.33	70		11.11	231,823	0.04
33 KV	7.2	26611870	32.20	20.68	37		0.00	201,273,736	35.47
Grand Total		**82645802**	**100.00**	16.88	**184878**		1.47	**567440309**	**100**

Customer Class	Rate Tariff	September							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	126526	0.18	1.83	7509	4.25	-2.24	675,810	0.14
0-50	3.62	1817149	2.52	25.54	37167	21.03	24.72	7,507,254	1.54
0-75	3.87	6615335	9.18	-10.89	42376	23.97	-14.56	26,197,673	5.38
76-200	5.01	12345256	17.12	15.48	62986	35.63	4.49	65,029,266	13.36
201-300	5.19	3962419	5.50	14.57	17584	9.95	1.68	21,686,764	4.45
301-400	5.42	2066949	2.87	14.11	6407	3.62	0.57	11,820,438	2.43
401-600	8.51	342115	0.47	10.55	2015	1.14	-6.93	3,042,801	0.62
600++	9.93	60760	0.08	19.61	716	0.41	-23.42	640,845	0.13
Total	0	**27336509**	**37.91**	7.98	**176760**	**100**	1.51	**136600851**	**28.06**
Commercial	9.58	2296963	3.19	4.65	6845		1.80	23,052,754	4.73
Charitable	4.98	474608	0.66	-2.38	1835		1.33	2,587,579	0.53
Irrigation	3.73	12295	0.02	-3.55	46		-4.17	51,234	0.01
General Power	7.42	3136592	4.35	-19.81	1574		0.45	24,915,284	5.12
Large Power	7.32	16018504	22.22	-33.48	501		0.80	126,403,405	25.96
Street Light	6.93	34124	0.05	6.92	70		0.00	247,144	0.05
33 KV	7.2	22791935	31.61	-14.35	38		2.70	173,018,505	35.54
Grand Total		**72101530**	**100.00**	-12.76	**187669**		1.51	**486876756**	**100**

Customer Class	Rate Tariff	October							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	128263	0.15	1.37	7879	4.38	4.93	709,110	0.12
0-50	3.62	1886445	2.17	3.81	39839	22.16	7.19	7,824,906	1.31
0-75	3.87	6604241	7.61	-0.17	42806	23.81	1.01	26,166,266	4.40
76-200	5.01	12459844	14.35	0.93	63230	35.17	0.39	65,624,348	11.02
201-300	5.19	3959514	4.56	-0.07	17682	9.83	0.56	21,670,010	3.64
301-400	5.42	1920855	2.21	-7.07	6253	3.48	-2.40	10,983,471	1.84
401-600	8.51	241175	0.28	-29.50	1501	0.83	-25.51	2,150,868	0.36
600++	9.93	50245	0.06	-17.31	612	0.34	-14.53	526,015	0.09
Total	0	**27250582**	**31.39**	-0.31	**179802**	**100**	1.72	**135654994**	**22.79**
Commercial	9.58	2256574	2.60	-1.76	6982		2.00	22,682,552	3.81
Charitable	4.98	478556	0.55	0.83	1870		1.91	2,596,921	0.44
Irrigation	3.73	12130	0.01	-1.34	45		-2.17	48,162	0.01
General Power	7.42	4037081	4.65	28.71	1576		0.13	31,805,426	5.34
Large Power	7.32	21039266	24.24	31.34	501		0.00	162,756,719	27.34
Street Light	6.93	35550	0.04	4.18	70		0.00	266,254	0.04
33 KV	7.2	31694932	36.51	39.06	38		0.00	239,526,514	40.23
Grand Total		**86804671**	**100.00**	20.39	**190884**		1.71	**595337542**	**100**

Customer Class	Rate Tariff	November							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	170417	0.22	32.87	10672	5.86	35.45	960,480	0.17
0-50	3.62	2061605	2.61	9.29	42718	23.45	7.23	8,530,960	1.54
0-75	3.87	4323532	5.47	-34.53	54542	29.94	27.42	17,792,972	3.21
76-200	5.01	9744287	12.34	-21.79	55213	30.31	-12.68	51,465,960	9.29
201-300	5.19	2701713	3.42	-31.77	12566	6.90	-28.93	14,795,332	2.67
301-400	5.42	1402240	1.78	-27.00	4568	2.51	-26.95	8,023,211	1.45
401-600	8.51	136175	0.17	-43.54	1398	0.77	-6.86	1,221,473	0.22
600++	9.93	30513	0.04	-39.27	503	0.28	-17.81	322,375	0.06
Total	0	**20570482**	**26.05**	-24.51	**182180**	**100**	1.32	**103112763**	**18.62**
Commercial	9.58	2048844	2.59	-9.21	7103		1.73	20,905,627	3.78
Charitable	4.98	403176	0.51	-15.75	1878		0.43	2,212,831	0.40
Irrigation	3.73	8473	0.01	-30.15	44		-2.22	34,796	0.01
General Power	7.42	3710420	4.70	-8.09	1595		1.21	29,790,393	5.38
Large Power	7.32	19213451	24.33	-8.68	504		0.60	148,173,266	26.76
Street Light	6.93	39619	0.05	11.45	70		0.00	286,474	0.05
33 KV	7.2	32979001	41.76	4.05	38		0.00	249,198,456	45.00
Grand Total		**78973466**	**100.00**	-9.02	**193412**		1.32	**553714606**	**100**

Customer Class	Rate Tariff	December							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	245278	0.32	43.93	22298	12.10	108.94	2,006,820	0.37
0-50	3.62	2926994	3.87	41.98	60349	32.75	41.27	12,104,443	2.25
0-75	3.87	4648845	6.15	7.52	48742	26.45	-10.63	18,884,161	3.51
76-200	5.01	5070618	6.71	-47.96	42055	22.82	-23.83	27,114,352	5.04
201-300	5.19	1587930	2.10	-41.23	7746	4.20	-38.36	8,707,490	1.62
301-400	5.42	502206	0.66	-64.19	1674	0.91	-63.35	2,871,535	0.53
401-600	8.51	128622	0.17	-5.55	977	0.53	-30.11	1,143,901	0.21
600++	9.93	84376	0.11	176.52	435	0.24	-13.52	853,217	0.16
Total	0	**15194869**	**20.11**	-26.13	**184276**	**100**	1.15	**73685919**	**13.70**
Commercial	9.58	1878973	2.49	-8.29	7218		1.62	18,856,918	3.50
Charitable	4.98	237339	0.31	-41.13	1883		0.27	1,355,568	0.25
Irrigation	3.73	13583	0.02	60.31	44		0.00	53,941	0.01
General Power	7.42	4029271	5.33	8.59	1599		0.25	31,761,128	5.90
Large Power	7.32	19617384	25.96	2.10	506		0.40	150,846,972	28.04
Street Light	6.93	39850	0.05	0.58	67		-4.29	287,089	0.05
33 KV	7.2	34565963	45.74	4.81	39		2.63	261,193,219	48.55
Grand Total		**75577232**	**100.00**	-4.30	**195632**		1.15	**538040754**	**100**

Customer Class	Rate Tariff	January							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	292205	0.37	19.13	23861	12.80	7.01	2,147,490	0.38
0-50	3.62	3179091	4.02	8.61	65344	35.04	8.28	13,141,909	2.31
0-75	3.87	4155432	5.25	-10.61	42933	23.02	-11.92	16,863,967	2.97
76-200	5.01	4708270	5.95	-7.15	43511	23.33	3.46	25,288,283	4.45
201-300	5.19	1599205	2.02	0.71	7801	4.18	0.71	8,772,718	1.54
301-400	5.42	543205	0.69	8.16	1781	0.96	6.39	3,106,234	0.55
401-600	8.51	128513	0.16	-0.08	832	0.45	-14.84	1,141,128	0.20
600++	9.93	32190	0.04	-61.85	414	0.22	-4.83	332,206	0.06
Total	0	**14638111**	**18.49**	-3.66	**186477**	**100**	1.19	**70793935**	**12.46**
Commercial	9.58	1873766	2.37	-0.28	7339		1.68	19,122,827	3.37
Charitable	4.98	226951	0.29	-4.38	1897		0.74	1,305,048	0.23
Irrigation	3.73	122524	0.15	802.04	208		372.73	475,065	0.08
General Power	7.42	4566840	5.77	13.34	1606		0.44	36,204,345	6.37
Large Power	7.32	22493047	28.41	14.66	512		1.19	173,768,314	30.59
Street Light	6.93	44296	0.06	11.16	67		0.00	319,338	0.06
33 KV	7.2	35208278	44.47	1.86	39		0.00	266,043,129	46.84
Grand Total		**79173813**	**100.00**	4.76	**198145**		1.28	**568032001**	**100**

Customer Class	Rate Tariff	February							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	300975	0.41	3.00	24078	12.77	0.91	2,167,020	0.41
0-50	3.62	3229130	4.35	1.57	66683	35.37	2.05	13,356,526	2.53
0-75	3.87	4396921	5.93	5.81	42670	22.63	-0.61	17,775,050	3.37
76-200	5.01	4643056	6.26	-1.39	43862	23.26	0.81	24,999,358	4.74
201-300	5.19	1678744	2.26	4.97	8064	4.28	3.37	9,211,323	1.75
301-400	5.42	544170	0.73	0.18	1794	0.95	0.73	3,115,591	0.59
401-600	8.51	129135	0.17	0.48	936	0.50	12.50	1,149,260	0.22
600++	9.93	33080	0.04	2.76	448	0.24	8.21	342,043	0.06
Total	0	**14955211**	**20.17**	2.17	**188535**	**100**	1.10	**72116171**	**13.68**
Commercial	9.58	1901394	2.56	1.47	7421		1.12	19,254,858	3.65
Charitable	4.98	233414	0.31	2.85	1921		1.27	1,339,655	0.25
Irrigation	3.73	634866	0.86	418.16	521		150.48	2,443,608	0.46
General Power	7.42	4530264	6.11	-0.80	1609		0.19	36,168,353	6.86
Large Power	7.32	17880917	24.11	-20.50	514		0.39	138,885,500	26.34
Street Light	6.93	41585	0.06	-6.12	67		0.00	299,039	0.06
33 KV	7.2	33983284	45.82	-3.48	39		0.00	256,838,855	48.70
Grand Total		**74160935**	**100.00**	-6.33	**200627**		1.25	**527346039**	**100**

Customer Class	Rate Tariff	March							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	304175	0.36	1.06	23563	12.35	-2.14	2,120,670	0.35
0-50	3.62	2990640	3.53	-7.39	62305	32.65	-6.57	12,383,742	2.06
0-75	3.87	5369871	6.35	22.13	45263	23.72	6.08	21,537,085	3.57
76-200	5.01	4730716	5.59	1.89	47412	24.85	8.09	25,501,180	4.23
201-300	5.19	1909845	2.26	13.77	8883	4.66	10.16	10,474,399	1.74
301-400	5.42	597344	0.71	9.77	1926	1.01	7.36	3,415,652	0.57
401-600	8.51	171851	0.20	33.08	999	0.52	6.73	1,520,694	0.25
600++	9.93	33080	0.04	0.00	471	0.25	5.13	342,783	0.06
Total	0	**16107522**	**19.03**	7.71	**190822**	**100**	1.21	**77296205**	**12.83**
Commercial	9.58	1989208	2.35	4.62	7543		1.64	20,146,351	3.34
Charitable	4.98	270676	0.32	15.96	1933		0.62	1,530,147	0.25
Irrigation	3.73	760707	0.90	19.82	533		2.30	2,933,840	0.49
General Power	7.42	5607709	6.63	23.78	1612		0.19	44,378,662	7.37
Large Power	7.32	23148873	27.35	29.46	514		0.00	178,857,881	29.69
Street Light	6.93	42775	0.05	2.86	65		-2.99	307,532	0.05
33 KV	7.2	36699906	43.37	7.99	39		0.00	277,015,723	45.98
Grand Total		**84627376**	**100.00**	14.11	**203061**		1.21	**602466341**	**100**

Customer Class	Rate Tariff	April							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	254310	0.30	-16.39	15270	7.92	-35.20	1,374,300	0.23
0-50	3.62	2506688	2.92	-16.18	51748	26.83	-16.94	10,367,911	1.73
0-75	3.87	6661332	7.75	24.05	49745	25.79	9.90	26,556,687	4.43
76-200	5.01	9691593	11.27	104.87	62633	32.47	32.10	51,380,613	8.58
201-300	5.19	1981605	2.31	3.76	9530	4.94	7.28	10,877,137	1.82
301-400	5.42	648595	0.75	8.58	2140	1.11	11.11	3,712,460	0.62
401-600	8.51	185788	0.22	8.11	1252	0.65	25.33	1,653,281	0.28
600++	9.93	244757	0.28	639.89	574	0.30	21.87	2,461,330	0.41
Total	0	**22174668**	**25.80**	37.67	**192892**	**100**	1.08	**108383719**	**18.09**
Commercial	9.58	2143690	2.49	7.77	7613		0.93	21,626,627	3.61
Charitable	4.98	407713	0.47	50.63	1950		0.88	2,238,992	0.37
Irrigation	3.73	538848	0.63	-29.16	532		-0.19	2,094,584	0.35
General Power	7.42	5749381	6.69	2.53	1616		0.25	45,537,485	7.60
Large Power	7.32	19166048	22.30	-17.21	519		0.97	149,303,957	24.92
Street Light	6.93	41128	0.05	-3.85	68		4.62	300,956	0.05
33 KV	7.2	35741069	41.58	-2.61	40		2.56	269,664,892	45.01
Grand Total		**85962545**	**100.00**	1.58	**205230**		1.07	**599151212**	**100**

Customer Class	Rate Tariff	May							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	189040	0.21	-25.67	11815	6.08	-22.63	1,063,350	0.17
0-50	3.62	2577351	2.80	2.82	52599	27.07	1.64	10,644,986	1.67
0-75	3.87	7696321	8.37	15.54	51918	26.72	4.37	30,543,970	4.78
76-200	5.01	10434657	11.35	7.67	62860	32.35	0.36	55,202,232	8.64
201-300	5.19	2392875	2.60	20.75	10635	5.47	11.59	13,106,685	2.05
301-400	5.42	841150	0.92	29.69	2430	1.25	13.55	4,801,000	0.75
401-600	8.51	217968	0.24	17.32	1434	0.74	14.54	1,938,172	0.30
600++	9.93	226940	0.25	-7.28	613	0.32	6.79	2,281,566	0.36
Total	0	**24576302**	**26.74**	10.83	**194304**	**100**	0.73	**119581961**	**18.71**
Commercial	9.58	2243665	2.44	4.66	7654		0.54	22,610,063	3.54
Charitable	4.98	451572	0.49	10.76	1970		1.03	2,463,968	0.39
Irrigation	3.73	95467	0.10	-82.28	518		-2.63	435,981	0.07
General Power	7.42	6965547	7.58	21.15	1644		1.73	55,044,511	8.61
Large Power	7.32	19362818	21.06	1.03	511		-1.54	150,536,968	23.55
Street Light	6.93	38939	0.04	-5.32	68		0.00	282,049	0.04
33 KV	7.2	38185105	41.54	6.84	40		0.00	288,149,140	45.09
Grand Total		**91919415**	**100.00**	6.93	**206709**		0.72	**639104641**	**100**

Customer Class	Rate Tariff	June							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	159216	0.19	-15.78	9951	5.09	-15.78	895,590	0.16
0-50	3.62	2495148	3.02	-3.19	51052	26.10	-2.94	10,308,736	1.81
0-75	3.87	7313823	8.86	-4.97	50153	25.64	-3.40	29,046,352	5.10
76-200	5.01	11312855	13.70	8.42	68576	35.06	9.09	59,862,475	10.52
201-300	5.19	2734975	3.31	14.30	10911	5.58	2.60	14,950,153	2.63
301-400	5.42	920788	1.11	9.47	2722	1.39	12.02	5,263,951	0.93
401-600	8.51	349093	0.42	60.16	1608	0.82	12.13	3,084,314	0.54
600++	9.93	242992	0.29	7.07	634	0.32	3.43	2,442,425	0.43
Total	0	**25528890**	**30.91**	3.88	**195607**	**100**	0.67	**125853996**	**22.12**
Commercial	9.58	2163127	2.62	-3.59	7732		1.02	21,841,295	3.84
Charitable	4.98	499616	0.60	10.64	1989		0.96	2,720,417	0.48
Irrigation	3.73	15783	0.02	-83.47	266		-48.65	90,340	0.02
General Power	7.42	6745257	8.17	-3.16	1653		0.55	53,330,605	9.37
Large Power	7.32	18313441	22.17	-5.42	507		-0.78	142,757,153	25.09
Street Light	6.93	32185	0.04	-17.35	68		0.00	233,356	0.04
33 KV	7.2	29289336	35.46	-23.30	41		2.50	222,198,179	39.05
Grand Total		**82587635**	**100.00**	-10.15	**207863**		0.56	**569025341**	**100**

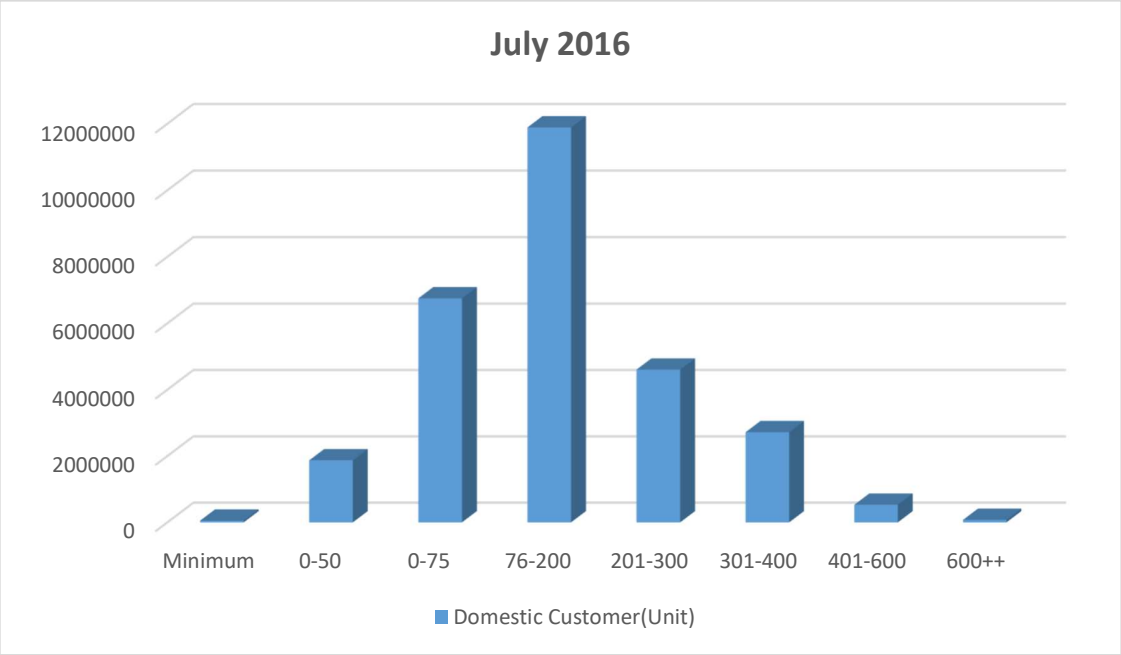


Fig 5.5: Monthly Revenue data of NPBS-1

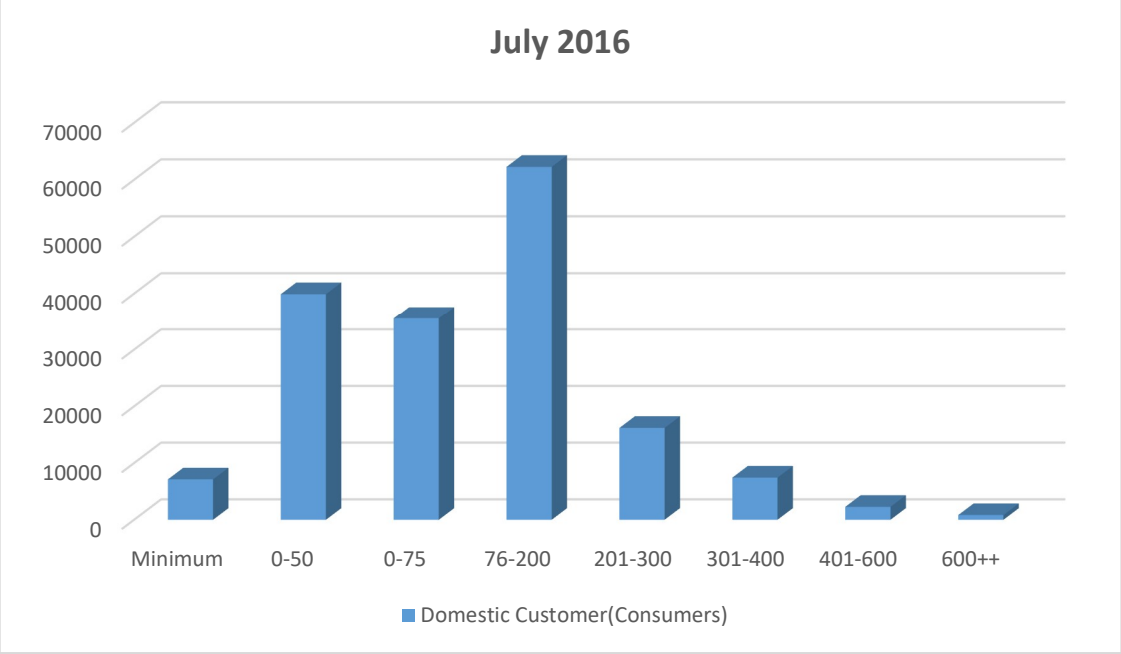


Fig 5.6: Monthly Revenue data of NPBS-1

If we look at the month of July 2016 consumed 70709578 Units, Units 28495641 has been used by domestic consumers. Total Number of consumer 171591 and total revenue

143662610 TK where minimum slab was 52122 units, Number of consumer 7125 and revenue 641,250 TK.

In 0-50 total consumed 1870769 units, Number of total consumer 39908 and total revenue 7,769,885 TK. In 0-75 total consumed 6752228 units, Number of total consumer 35549 and total revenue 26,547,191 TK. In 76-200 total consumed 11888663 units, Number of total consumer 62270 and total revenue 62,664,478 TK. In 201-300 total consumed 4605930 units, Number of total consumer 16191 and total revenue 25,092,560 TK. In 301-400 total consumed 2719280 units, Number of total consumer 7429 and total revenue 15,495,271 TK. In 401-600 total consumed 531529 units, Number of total consumer 2284 and total revenue 4,681,402 TK. In 600plus total consumed 75120 units, Number of total consumer 835 and total revenue 770,573 TK.

In Commercial total consumed 2290125 units, Number of total consumer 6607 and total revenue 22,992,390 TK. In Charitable total consumed 506107 units, Number of total consumer 1792 and total revenue 2,746,127 TK. In Irrigation total consumed 14555 units, Number of total consumer 55 and total revenue 67,269 TK. In General Power total consumed 3206779 units, Number of total consumer 1555 and total revenue 25,412,065 TK. In Large Power total consumed 14117993 units, Number of total consumer 494 and total revenue 110,146,905 TK. In Street Light total consumed 27436 units, Number of total consumer 63 and total revenue 199,631 TK. In 33 KV total consumed 22050942 units, Number of total consumer 37 and total revenue 168,696,585 TK.

Table 5.3: Monthly Revenue data of NPBS-1

Customer Class	Rate Tariff	July					
	Present	Unit	%	Consumers	%	Revenue	%
Domestic							
Minimum	0	160179	0.17	9369	4.72	843,210	0.13
0-50	3.62	2546891	2.68	52052	26.24	10,521,045	1.62
0-75	3.87	8484288	8.94	49754	25.08	33,484,144	5.16
76-200	5.01	12394590	13.06	63562	32.04	65,297,243	10.07
201-300	5.19	5356680	5.64	18131	9.14	29,203,060	4.50
301-400	5.42	1755560	1.85	3262	1.64	9,969,118	1.54
401-600	8.51	825660	0.87	1623	0.82	7,230,597	1.12
600++	9.93	448087	0.47	648	0.33	4,489,413	0.69
Total	0	**31971935**	33.69	198401	**100**	**161037830**	**24.84**
Commercial	9.58	2647845	2.79	7855		26,998,015	4.16
Charitable	4.98	547371	0.58	2025		3,014,425	0.46
Irrigation	3.73	13758	0.01	71		56,988	0.01
General Power	7.42	6538412	6.89	1682		51,607,694	7.96
Large Power	7.32	21008054	22.14	510		162,808,526	25.11
Street Light	6.93	43141	0.05	68.00		311,715	0.05
33 KV	7.2	32124480	33.85	41		242,528,183	37.41
Grand Total		**94894996**	**100**	**210653**		**648363376**	**100**

Customer Class	Rate Tariff	August							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	87752	0.09	-45.22	9622	4.79	2.70	865,980	0.12
0-50	3.62	1980293	1.92	-22.25	46881	23.36	-9.93	8,340,686	1.18
0-75	3.87	9171761	8.91	8.10	43507	21.68	-12.56	35,940,367	5.07
76-200	5.01	13113540	12.73	5.80	66230	33.00	4.20	69,059,346	9.74
201-300	5.19	4399247	4.27	-17.87	21829	10.88	20.40	24,136,713	3.40
301-400	5.42	1179160	1.15	-32.83	8084	4.03	147.82	6,858,936	0.97
401-600	8.51	863204	0.84	4.55	3636	1.81	124.03	7,623,950	1.07
600++	9.93	319183	0.31	-28.77	880	0.44	35.80	3,214,046	0.45
Total	0	**31114140**	**30.21**	-2.68	**200669**	**100**	1.14	**156040024**	**22.00**
Commercial	9.58	2445339	2.37	-7.65	7934		1.01	25,190,604	3.55
Charitable	4.98	573947	0.56	4.86	2041		0.79	3,122,492	0.44
Irrigation	3.73	10152	0.01	-26.21	49		-30.99	41,297	0.01
General Power	7.42	6449732	6.26	-1.36	1714		1.90	50,853,493	7.17
Large Power	7.32	23076871	22.41	9.85	512		0.39	178,006,655	25.09
Street Light	6.93	47283	0.05	9.60	68		0.00	341,635	0.05
33 KV	7.2	39265756	38.13	22.23	42		2.44	295,755,198	41.69
Grand Total		**102983220**	**100**	8.52	**213029**		1.13	**709351398**	**100**

Customer Class	Rate Tariff	September							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	83805	0.10	-4.50	9160	4.51	-4.80	824,400	0.14
0-50	3.62	1258335	1.43	-36.46	31963	15.73	-31.82	5,354,248	0.90
0-75	3.87	11099029	12.60	21.01	49991	24.61	14.90	43,426,085	7.29
76-200	5.01	12531716	14.23	-4.44	73649	36.26	11.20	66,254,245	11.13
201-300	5.19	3987205	4.53	-9.37	20013	9.85	-8.32	21,889,758	3.68
301-400	5.42	1642385	1.86	39.28	11395	5.61	40.96	9,547,748	1.60
401-600	8.51	1061080	1.20	22.92	5606	2.76	54.18	9,377,425	1.58
600++	9.93	251600	0.29	-21.17	1360	0.67	54.55	2,546,603	0.43
Total	0	**31915155**	**36.23**	2.57	**203137**	**100**	1.23	**159220512**	**26.75**
Commercial	9.58	2468775	2.80	0.96	7969		0.44	24,844,967	4.17
Charitable	4.98	550886	0.63	-4.02	2054		0.64	2,989,428	0.50
Irrigation	3.73	9982	0.01	-1.67	46		-6.12	40,556	0.01
General Power	7.42	4534154	5.15	-29.70	1656		-3.38	36,220,985	6.08
Large Power	7.32	19061704	21.64	-17.40	516		0.78	148,712,674	24.98
Street Light	6.93	41494	0.05	-12.24	68		0.00	300,353	0.05
33 KV	7.2	29507560	33.50	-24.85	42		0.00	222,995,020	37.46
Grand Total		**88089710**	**100**	-14.46	**215488**		1.15	**595324495**	**100**

Customer Class	Rate Tariff	October							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	98986	0.10	18.11	9984	4.86	9.00	898,560	0.13
0-50	3.62	1326386	1.33	5.41	37363	18.20	16.89	5,735,592	0.83
0-75	3.87	10923101	10.95	-1.59	48346	23.56	-3.29	42,716,434	6.21
76-200	5.01	10866876	10.89	-13.29	70402	34.30	-4.41	57,615,793	8.37
201-300	5.19	3466200	3.47	-13.07	24790	12.08	23.87	19,217,190	2.79
301-400	5.42	1209575	1.21	-26.35	9021	4.40	-20.83	7,087,287	1.03
401-600	8.51	894619	0.90	-15.69	4297	2.09	-23.35	7,900,270	1.15
600++	9.93	271765	0.27	8.01	1033	0.50	-24.04	2,740,350	0.40
Total	0	**29057508**	**29.13**	-8.95	**205236**	**100**	1.03	**143911476**	**20.91**
Commercial	9.58	2283409	2.29	-7.51	8086		1.47	23,203,273	3.37
Charitable	4.98	539795	0.54	-2.01	2076		1.07	2,982,961	0.43
Irrigation	3.73	10025	0.01	0.43	46		0.00	40,452	0.01
General Power	7.42	6233864	6.25	37.49	1665		0.54	49,297,651	7.16
Large Power	7.32	20530989	20.58	7.71	518		0.39	159,395,425	23.16
Street Light	6.93	42039	0.04	1.31	68		0.00	303,498	0.04
33 KV	7.2	41058869	41.16	39.15	42		0.00	309,104,757	44.91
Grand Total		**99756498**	**100**	13.24	**217737**		1.04	**688239493**	**100**

Customer Class	Rate Tariff	November							
	Present	Unit	%	Inc %	Consumers	%	Inc %	Revenue	%
Domestic									
Minimum	0	96736	0.10	-2.27	12991	6.26	30.12	1,169,190	0.17
0-50	3.62	2365265	2.47	78.32	50038	24.13	33.92	9,813,209	1.46
0-75	3.87	8817860	9.22	-19.27	53343	25.72	10.34	34,841,443	5.19
76-200	5.01	7097361	7.42	-34.69	57763	27.85	-17.95	37,924,511	5.65
201-300	5.19	2634389	2.76	-24.00	21787	10.50	-12.11	14,697,205	2.19
301-400	5.42	1217518	1.27	0.66	7213	3.48	-20.04	7,060,721	1.05
401-600	8.51	755305	0.79	-15.57	3375	1.63	-21.46	6,669,255	0.99
600++	9.93	297187	0.31	9.35	894	0.43	-13.46	2,993,226	0.45
Total	0	**23281621**	**24.35**	-19.88	**207404**	**100**	1.06	**115168760**	**17.17**
Commercial	9.58	2192576	2.29	-3.98	8172		1.06	22,325,209	3.33
Charitable	4.98	421954	0.44	-21.83	2079		0.14	2,337,693	0.35
Irrigation	3.73	10164	0.01	1.39	46		0.00	40,989	0.01
General Power	7.42	7144073	7.47	14.60	1681		0.96	56,400,052	8.41
Large Power	7.32	3562844	3.73	-82.65	527		1.74	30,932,529	4.61
Street Light	6.93	45403	0.05	8.00	71		4.41	327,494	0.05
33 KV	7.2	58955592	61.66	43.59	41		-2.38	443,177,470	66.08
Grand Total		**95614227**	**100**	-4.15	**220021**		1.05	**670710196**	**100**

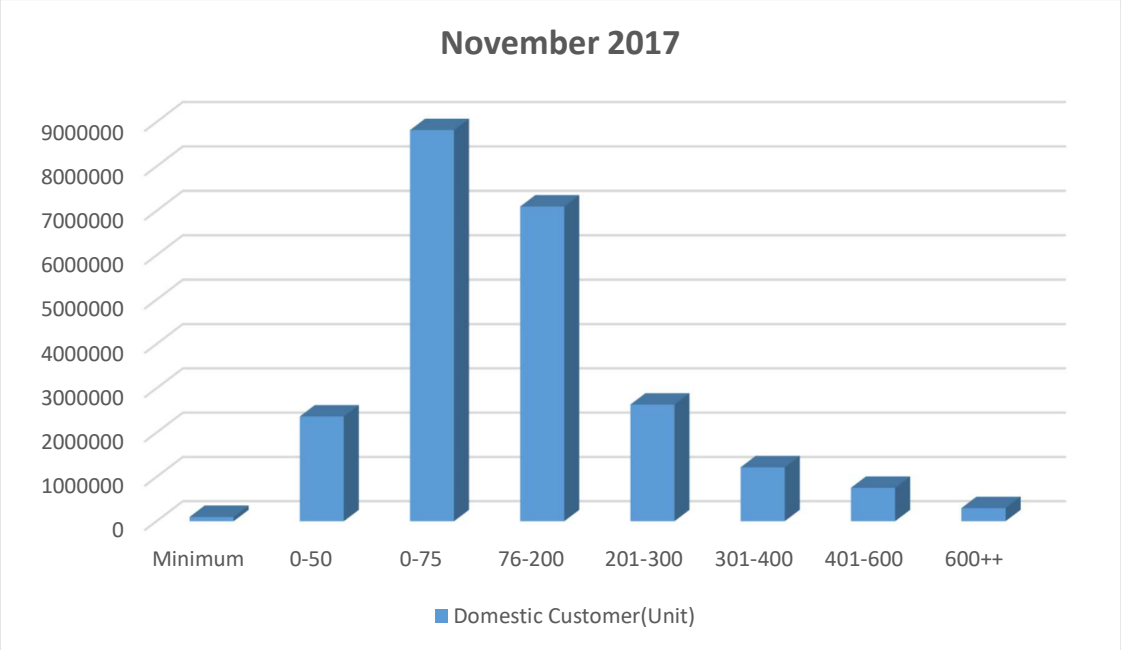


Fig 5.7: Monthly Revenue data of NPBS-1

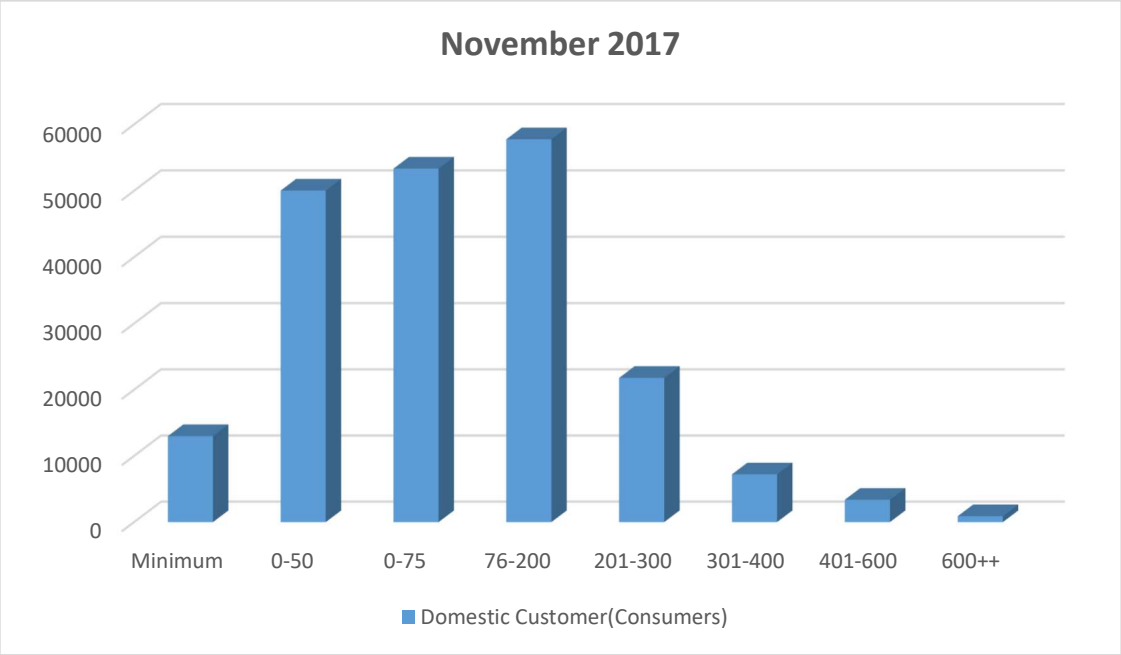


Fig 5.8: Monthly Revenue data of NPBS-1

If we look at the month of November 2017 consumed 95614227 Units, Units 23281621 has been used by domestic consumers. Total Number of consumer 207404 and total revenue 115168760 TK where minimum slab was 96736 units, Number of consumer 12991 and revenue 1,169,190 TK.

In 0-50 total consumed 2365265 units, Number of total consumer 50038 and total revenue 9,813,209 TK. In 0-75 total consumed 8817860 units, Number of total consumer 53343 and total revenue 34,841,443 TK. In 76-200 total consumed 7097361 units, Number of total consumer 57763 and total revenue 37,924,511 TK. In 201-300 total consumed 2634389 units, Number of total consumer 21787 and total revenue 14,697,205 TK. In 301-400 total consumed 1217518 units, Number of total consumer 7213 and total revenue 7,060,721 TK. In 401-600 total consumed 755305 units, Number of total consumer 3375 and total revenue 6,669,255 TK. In 600plus total consumed 297187 units, Number of total consumer 894 and total revenue 2,993,226 TK.

In Commercial total consumed 2192576 units, Number of total consumer 8172 and total revenue 22,325,209 TK. In Charitable total consumed 421954 units, Number of total consumer 2079 and total revenue 2,337,693 TK. In Irrigation total consumed 10164 units, Number of total consumer 46 and total revenue 40,989 TK. In General Power total

consumed 7144073 units, Number of total consumer 1681 and total revenue 56,400,052 TK. In Large Power total consumed 3562844 units, Number of total consumer 527 and total revenue 30,932,529 TK. In Street Light total consumed 45403 units, Number of total consumer 71 and total revenue 327,494 TK. In 33 KV total consumed 58955592 units, Number of total consumer 41and total revenue 443,177,470TK.

Table 5.4: Monthly Revenue data of NPBS-1

Customer Class	Slab	Rate Tariff	December 2017 to June 2018					
		Present	Unit	%	Consumers	%	Revenue	%
LT_A (DOM)	**0-50**	3.62	22650105	3.51	474192	31.55	93,848,180	1.92
	0-75	4.00	49387273	7.65	382917	25.48	207,122,017	4.24
	76-200	5.45	54072099	8.37	464248	30.89	306,299,140	6.26
	201-300	5.70	13605716	2.11	121525	8.09	80,742,606	1.65
	301-400	6.02	5681209	0.88	45373	3.02	35,448,629	0.72
	401-600	9.30	2155877	0.33	11479	0.76	20,350,981	0.42
	600++	10.70	737165	0.11	3309	0.22	7,995,416	0.16
	Total		**148289444**	22.96	**1503043**	**100.00**	**751806969**	15.37
LT_B(IRRI)		4	2114715	0.33	2513		8855184	0.18
LT_C1 (S INDUSTRY)		8.2	27246910	4.22	11233		231097741	4.73
LT_C2 (Cons)		12	35961	0.01	86		510217	0.01
LT_D1(Edu.Cl&Hosp)		5.73	2681400	0.42	14890		16272772	0.33
LT_D2((SL. WP & BCS)		7.7	601419	0.09	595		4781229	0.10
LT_E(COMMERCIAL&OFFICE)		10.3	11441258	1.77	59744		122490572	2.50
LT_T(TEMP)		16	60548	0.01	29		1013277	0.02
MT_1(DOM)		8	98411	0.02	13		925155	0.02
MT_2(COM)		8.4	3492281	0.54	181		32176782	0.66
MT_3(INDISTRY)	Flat	8.15	162783571		3479		1391385131	
	Off-Peak	7.34	9575726		85		73727837	
	Peak	10.19	3329795				33930611	
	Total		175689092	27.20	3564		1499043579	30.65
MT_4(CONS)		11	3193719	0.49	32		36298692	0.74
MT_5(GEN)		8.05	2131517	0.33	130		19859034	0.41
HT_1(GEN)		8	412483	0.06	15		6730488	0.14
HT_3(INDUSTRY)	Flat	8.05	212751813		243		1718828275	
	Off-Peak	7.25	43277636		72		315778861	
	Peak	10.06	12325197				123991482	
	Total		268354646	41.55	315		2158598618	44.14
Grand Total	Total		645843804	100.00	1596383		4890460309	100.00

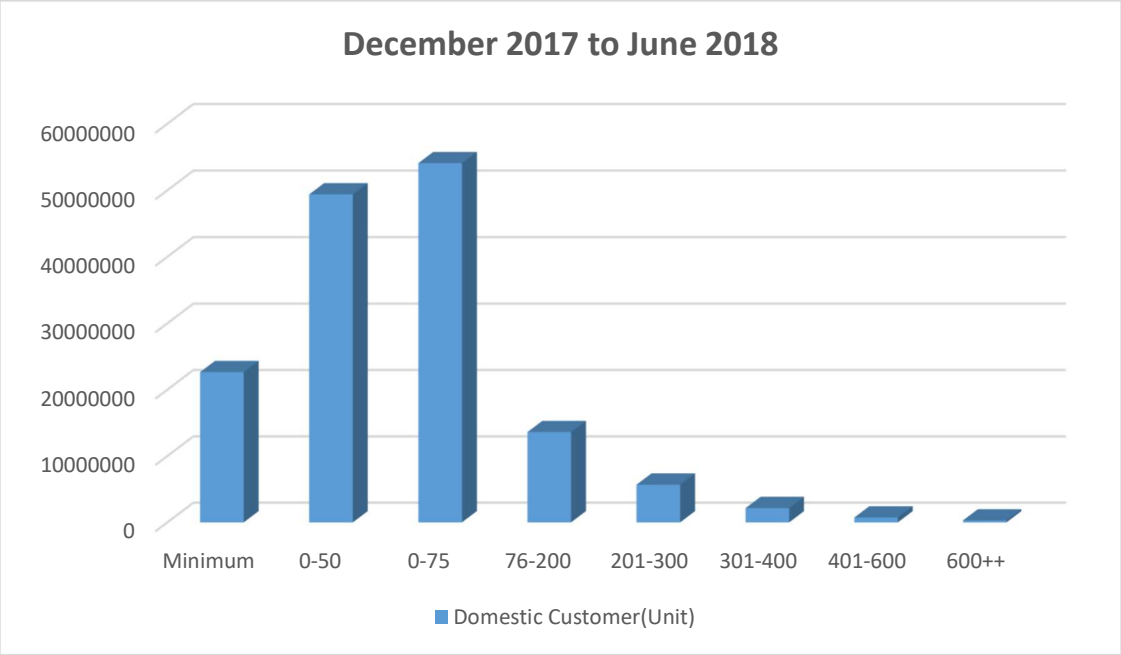


Fig 5.9: Monthly Revenue data of NPBS-1

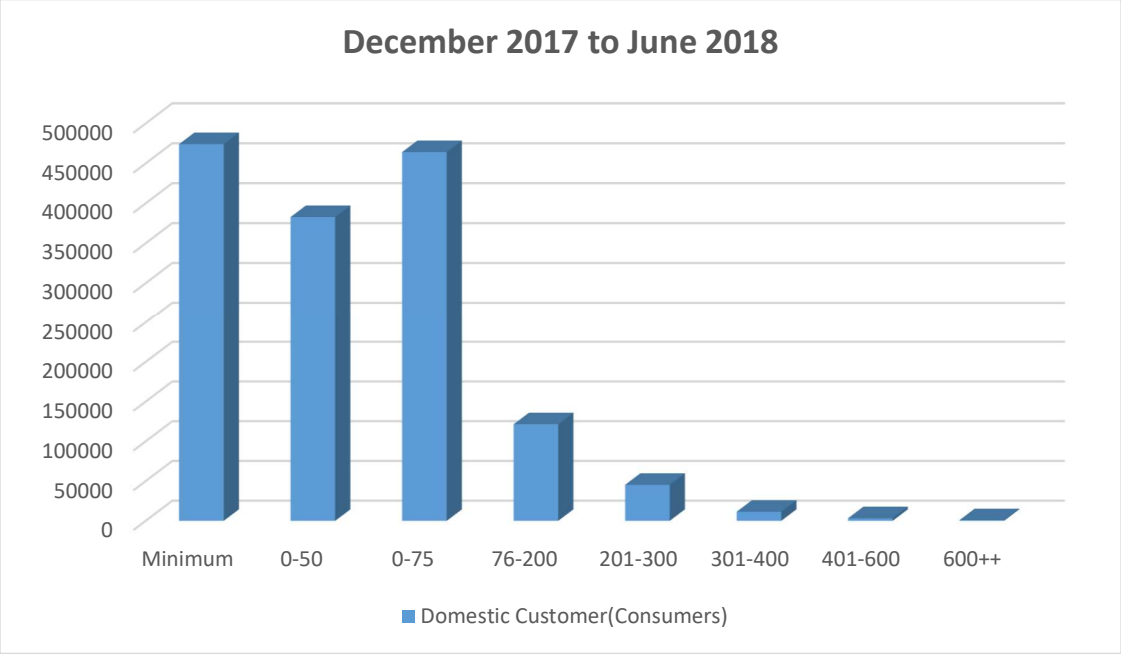


Fig 5.10: Monthly Revenue data of NPBS-1

Data for December 2017 to June 2018 has been shown, the change in customer class and slab has been shown on this table. We look at the month of December 2017 to June 2018

consumed 645843804 Units, Units 148289444 has been used by domestic consumers. Total Number of consumer 1503043 and total revenue 751806969 TK.

In 0-50 total consumed 22650105 units, Number of total consumer 474192 and total revenue 93,848,180 TK. In 0-75 total consumed 49387273 units, Number of total consumer 382917 and total revenue 207,122,017 TK. In 76-200 total consumed 54072099 units, Number of total consumer 464248 and total revenue 306,299,140 TK. In 201-300 total consumed 13605716 units, Number of total consumer 121525 and total revenue 80,742,606 TK. In 301-400 total consumed 5681209 units, Number of total consumer 45373 and total revenue 35,448,629 TK. In 401-600 total consumed 2155877 units, Number of total consumer 11479 and total revenue 20,350,981 TK. In 600plus total consumed 737165 units, Number of total consumer 3309 and total revenue 7,995,416 TK.

In Commercial total consumed 2192576 units, Number of total consumer 8172 and total revenue 22,325,209 TK. In Charitable total consumed 421954 units, Number of total consumer 2079 and total revenue 2,337,693 TK. In Irrigation total consumed 10164 units, Number of total consumer 46 and total revenue 40,989 TK. In General Power total consumed 7144073 units, Number of total consumer 1681 and total revenue 56,400,052 TK. In Large Power total consumed 3562844 units, Number of total consumer 527 and total revenue 30,932,529 TK. In Street Light total consumed 45403 units, Number of total consumer 71 and total revenue 327,494 TK. In 33 KV total consumed 58955592 units, Number of total consumer 41and total revenue 443,177,470TK.

5.4 Graphical Analysis (Domestic)

In these processes we calculate all the month of the year of 2015-2016. We divided the year in three season for our capitalize which are,

- Summer season (March-June).
- Rainy season (July-October).
- Winter season (November-February).

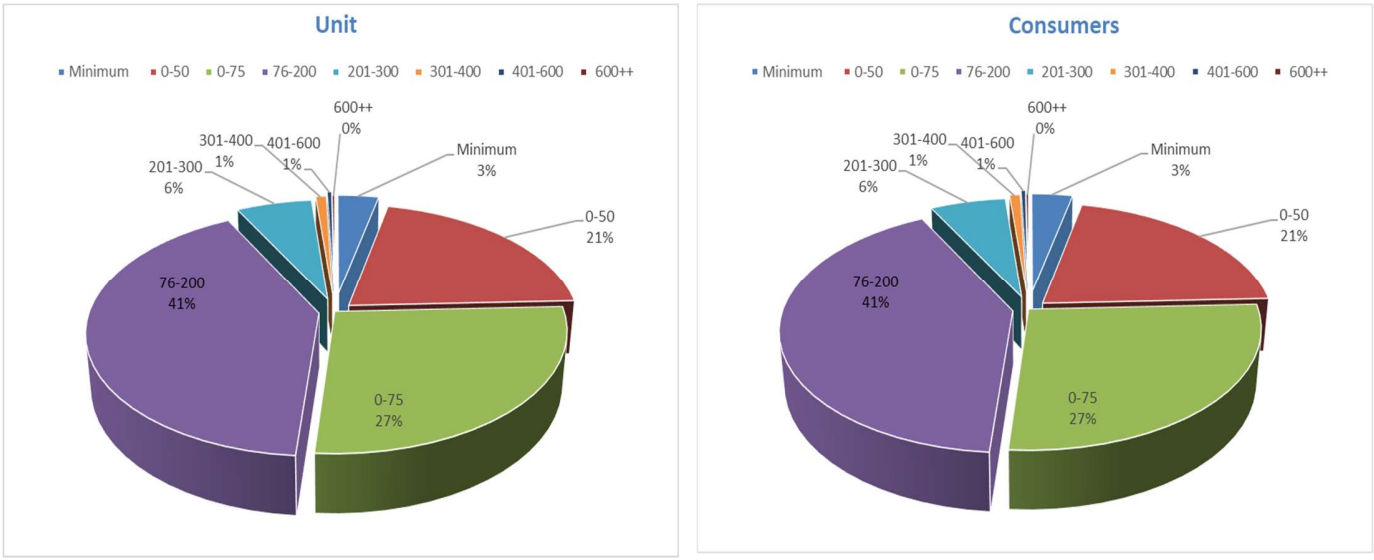


Fig 5.1.1: Domestic Unit and Consumer on Aguest, 2015

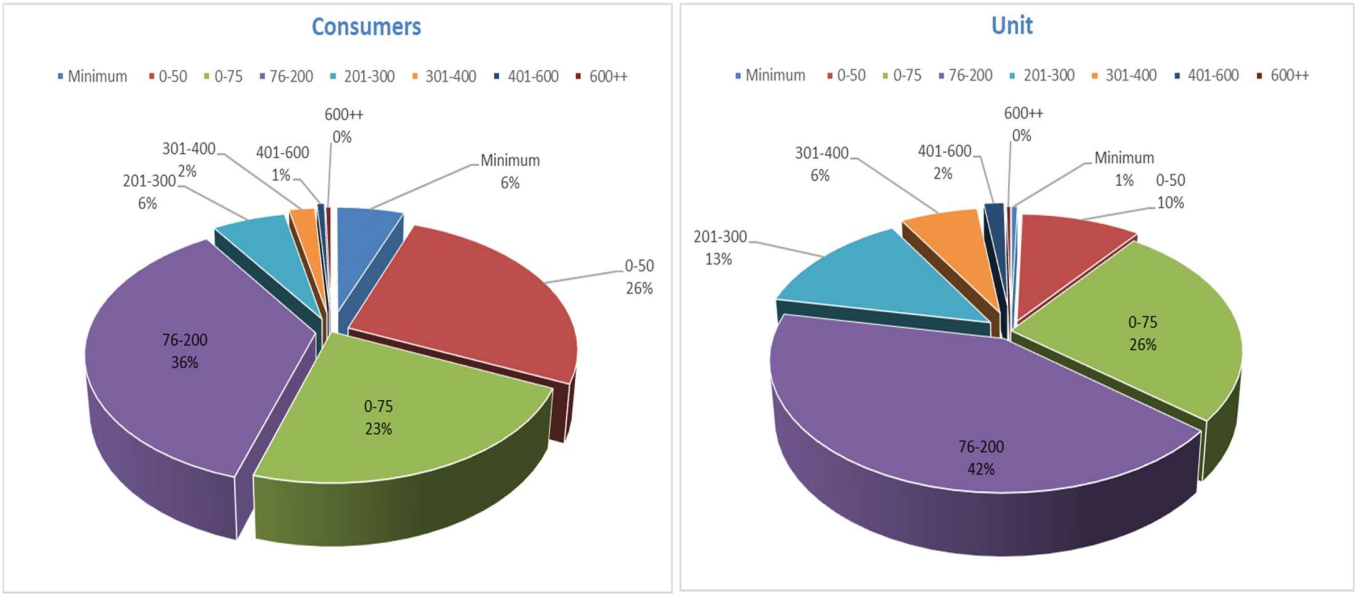


Fig 5.1.2: Domestic Unit and Consumer on November, 2015

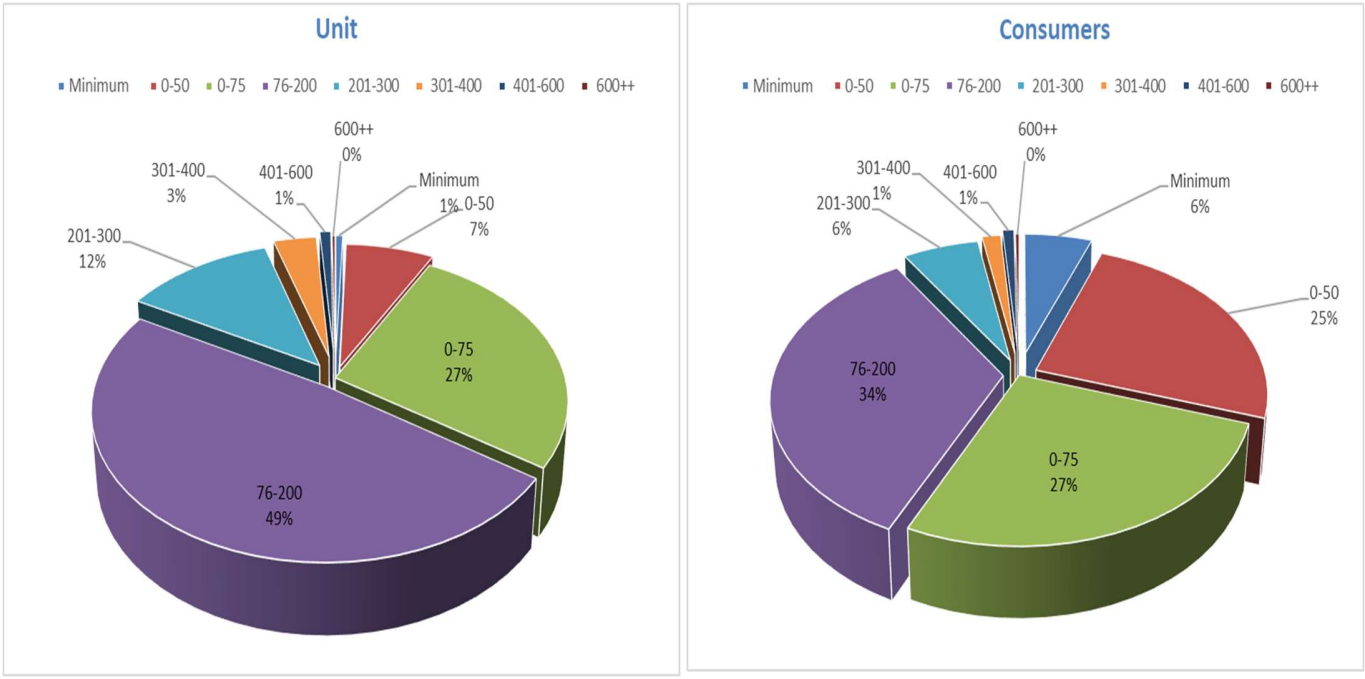


Fig 5.1.3: Domestic Unit and Consumer on April, 2016

The above graph express about number of consumer of domestic slab for different seasons. The Number of consumer varies season to season from upper slab to lower slab and lower slab to upper slab. There eight types of consumer in domestic slab such as, Minimum, 0-50 KWh, 0-75 KWh, 76-200 KWh, 201-300 KWh, 301-400 KWh, 401-600 KWh and 600++ KWh.

In Fig 5.1.1, energy consumption is 21% for 0-50 KWh with 21% consumer, 0-75 KWh consume 27% of energy with 27% consumer which is the highest percentage of consumer of the graph, 76-200 consume 41% of energy with 41% consumer which is the highest percentage of consumer of the graph , 201-300 KWh consume 6% of energy with 6% consumer, 301-400 KWh consume 1% energy with 1% consumer, 401-600 KWh consume 1% energy with 1% consumer, Minimum slab consume 3% with 3% consumer and both 600++ consumer and consume energy are about to 0%. In summer season, consumer increases in higher consumed slabs due to more use of electrical appliance. In Fig 5.1.2, energy consumption is 10% for 0-50 KWh slab with 26% consumer, 0-75 KWh slab consume 26% with 23%, 76-200 KWh consume 42% energy with 36% consumer which is

the highest percentage of consume of the graph, 201-300 KWh consume 13% energy with 6% consumer, 301-400 KWh consume 6% energy with 2% consumer, 401-600 KWh consume 2% energy with 1% consumer, Minimum consumer is 6%; consume 1% energy and both 600++ consumer and energy consume are about to 0 %. In winter season, consumer goes down into lower slabs due to less use of electrical appliance like AC, fan, refrigerator etc. In Fig 5.1.3, the number of consumer is 25% consume 7% energy for 0-50 KWh, 0-75 KWh consumer is 27% consume 27% of energy, 76-200 KWh consume 49% energy with 34% consumer which is the highest percentage of consume of the graph, 201-300 KWh consume 12% energy with 6% consumer, 301-400 KWh consume 3% energy with 1% consumer, 401-600 KWh consume 1% energy with 1% consumer, Minimum consumer is 6 % consume 1% energy and both 600++ consumer and energy consume is still about 0 %.

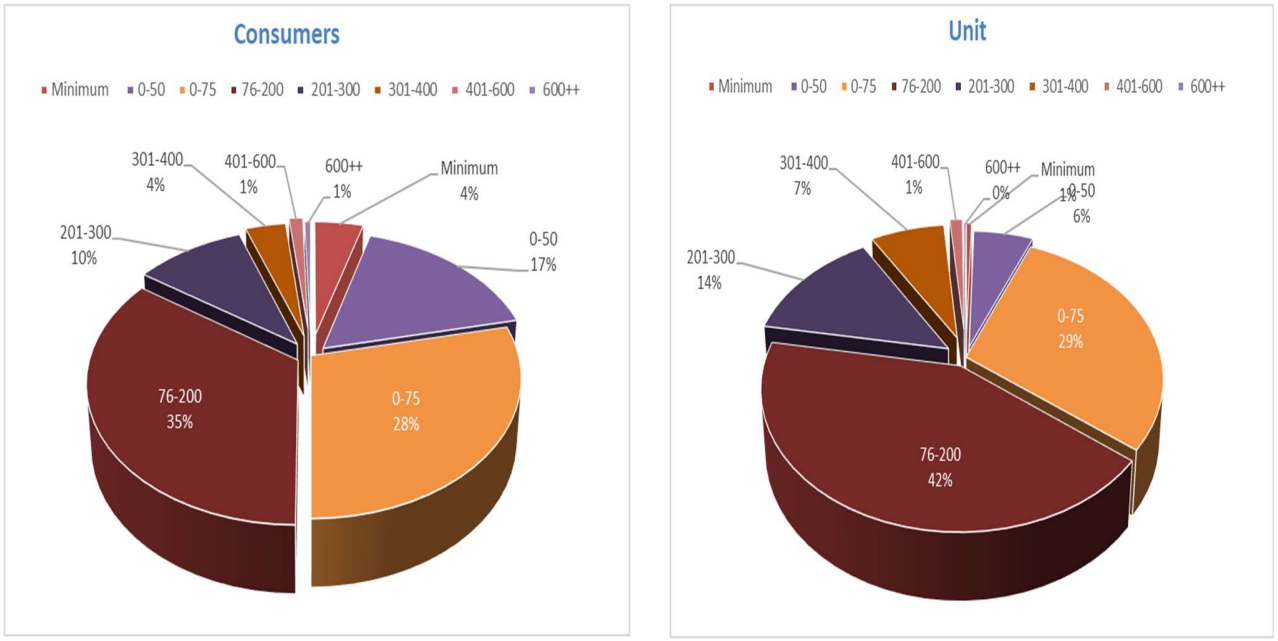
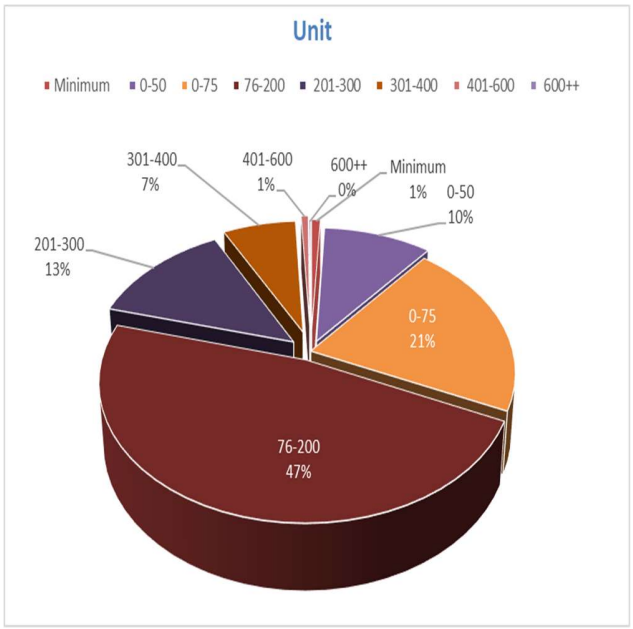


Fig 5.2.1: Domestic Unit and Consumer on Aguest, 2016



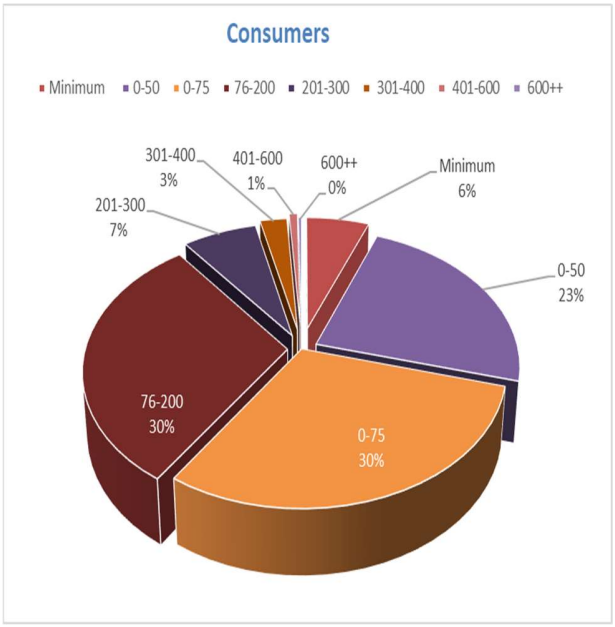
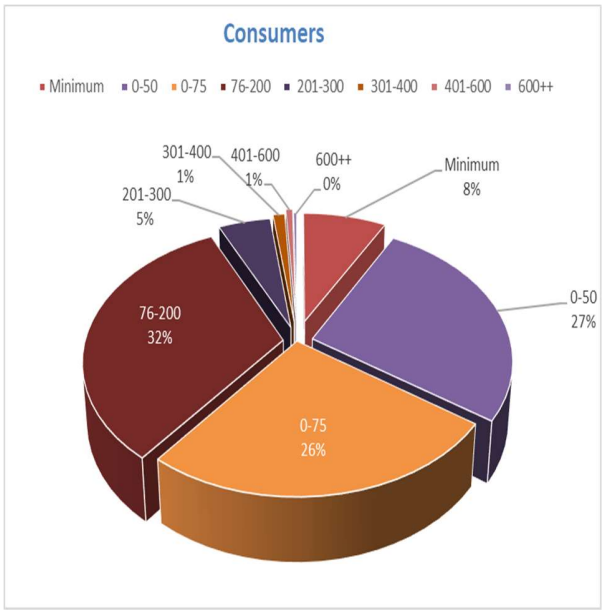


Fig 5.2.2: Domestic Unit and Consumer on November, 2016



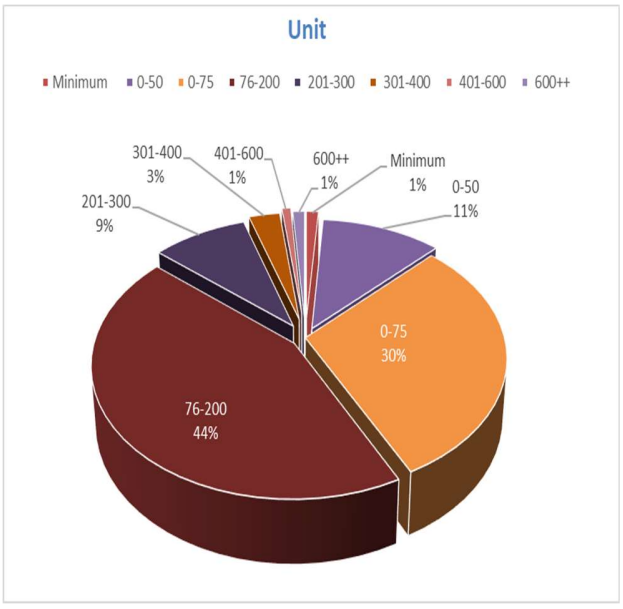


Fig 5.2.3: Domestic Unit and Consumer on April, 2017

In Fig 5.2.1, energy consumption is 6% for 0-50 KWh with 17% consumer, 0-75 KWh consume 29% of energy with 28% consumer, 76-200 consume 42% of energy with 35% consumer which is the highest percentage of consume of the graph, 201-300 KWh consume 14% of energy with 10% consumer, 301-400 KWh consume 7% energy with 4% consumer, 401-600 KWh consume 1% energy with 1% consumer, Minimum slab consume 1% with 4% consumer and 600++ consumer 1% and consume energy is 0%. In summer season, consumer increases in higher consumed slabs due to more use of electrical appliance. In Fig 5.2.2, energy consumption is 10% for 0-50 KWh slab with 23% consumer, 0-75 KWh slab consume 21% with 30% consumer, 76-200 consume 47% of energy with 30% consumer which is the highest percentage of consume of the graph, 201-300 KWh consume 13% of energy with 7% consumer, 301-400 KWh consume 7% energy with 3% consumer, 401-600 KWh consume 1% energy with 1% consumer, Minimum consumer is 6%; consume 1% energy and 600++ consumer 0% and energy consume 0%. In winter season, consumer goes down into lower slabs due to less use of electrical appliance like AC, fan, refrigerator etc. In Fig 5.2.3, the number of consumer is 27% consume 11% energy for 0-50 KWh, 0-75 KWh consumer is 26% consume30% of energy, 76-200 consume 44% of energy with 32% consumer which is the highest percentage of consume of the graph, 201-300 KWh consume 9% of energy with 5% consumer, 301-400 KWh consume 3% energy with 1% consumer, 401-600 KWh consume 1% energy with 1% consumer, Minimum consumer is 8 % with consume 1% energy and 600++ consumer 0% and energy consume is still about 1%.

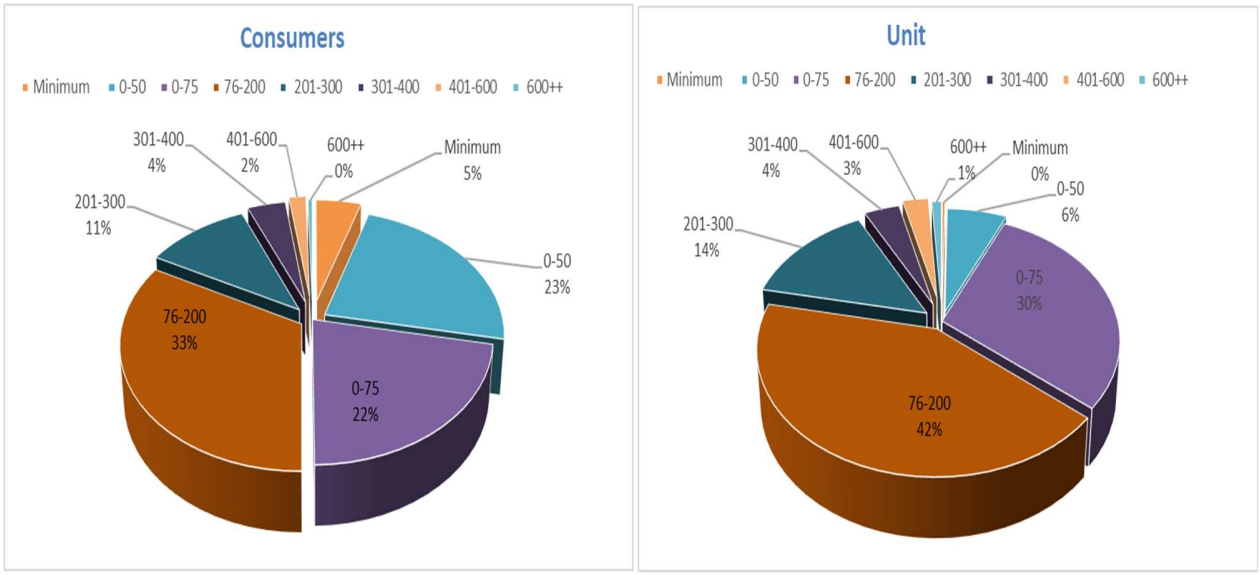


Fig 5.3.1: Domestic Unit and Consumer on Aguest, 2017

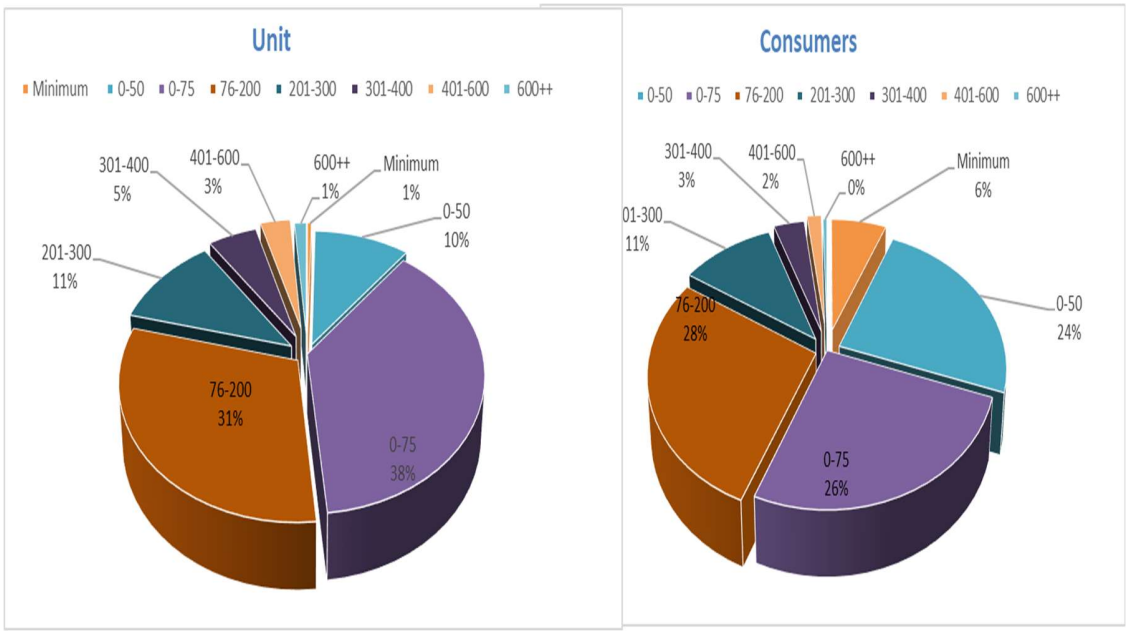


Fig 5.3.2: Domestic Unit and Consumer on November, 2017

In Fig 5.3.1, energy consumption is 6% for 0-50 KWh with 23% consumer, 0-75 KWh consume 30% of energy with 22% consumer, 76-200 consume of energy 42% and

consumer 33% which is the largest percentage of the graph4, 201-300 KWh consume of energy 14% and consumer 11% , 301-400 KWh consume energy and consumer are 4%, 401-600 KWh consume of energy 3% and consumer 2% , Minimum slab consume 0% with 5% consumer and 600++ consumer 0% and consume energy 1% . In summer season, consumer increases in higher consumed slabs due to more use of electrical appliance. In Fig 5.3.2, energy consumption is 10% for 0-50 KWh slab with 24% consumer, 0-75 KWh slab consume 38% with 26% consumer which is the highest percentage of the unit of the graph, 76-200 consume of energy 31% and consumer 28% , 201-300 KWh consume of energy 11% and consumer 11% , 301-400 KWh consume energy 5% and consumer 3%, 401-600 KWh consume of energy 3% and consumer 2% , Minimum consumer is 6%; consume 1% energy and 600++ consumer 0% and energy consume 1% .

5.5 Comparisons of Slabs

In the above table analysis shown that the comparison between Total slab of consumer to Domestic slab and we know Total slab of consumer consist of Domestic slab, Commercial slab. In Table 5.3, compare between the No. of consumer, energy consumption and revenue of Total and Domestic according to Total.

Table 5.5: Compare Domestic with Total, Minimum and 1-75 KWh Slab with it (15-16)

	Total		
Month(15-16)	Unit	Revenue	Consumer
July	60205577	395980772	144086
August	69890373	463901904	147119
September	63967541	429926652	150126
October	71940179	489930113	153591
November	66693215	464083743	156669
December	62235781	440608661	160585
January	63827184	451377722	164293
February	64689454	457361167	167483
March	75037608	520036884	170649
April	74360169	510032225	174292
May	72086919	492657288	177540
June	80260345	552579718	179631

Month(15-16)	Domestic					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	22967103	38.15	114021566	28.79	134702	93.49
August	22938532	32.82	113708345	24.51	137707	93.60
September	24427253	38.19	121701944	28.31	140629	93.67
October	24937038	34.66	125535460	25.62	143973	93.74
November	18808594	28.20	93700687	20.19	146940	93.79
December	14060538	22.59	67573339	15.34	150756	93.88
January	12825262	20.09	62026296	13.74	154013	93.74
February	13257733	20.49	63453580	13.87	156934	93.70
March	18543042	24.71	90518352	17.41	160005	93.76
April	22458065	30.20	110894025	21.74	163491	93.80
May	23213495	32.20	114810627	23.30	166649	93.87
June	23573039	29.37	115990026	20.99	169073	94.12

Month(15-16)	Minimum					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	71655	0.12	374,400	0.09	4160	2.89
August	77868	0.11	415,710	0.09	4619	3.14
September	75945	0.12	425,790	0.10	4731	3.15
October	79873	0.11	449,280	0.09	4992	3.25
November	92265	0.14	744,750	0.16	8275	5.28
December	220308	0.35	1,297,079	0.29	14412	8.97
January	253673	0.40	1,472,941	0.33	16366	9.96
February	270240	0.42	1,465,110	0.32	16279	9.72
March	172578	0.23	1,109,430	0.21	12327	7.22
April	127104	0.17	817,470	0.16	9083	5.21
May	98172	0.14	729,990	0.15	8111	4.57
June	119686	0.15	718,110	0.13	7979	4.44

Month(15-16)	1-75 KV					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	2885166	4.79	12,065,142	3.05	35982	24.97
August	2919820	4.18	12,224,253	2.64	36982	25.14
September	2806178	4.39	11,682,209	2.72	32892	21.91
October	4041900	5.62	16,188,945	3.30	33189	21.61
November	4842809	7.26	19,242,499	4.15	33593	21.44
December	4893527	7.86	19,629,353	4.46	41358	25.75
January	3981197	6.24	16,134,274	3.57	40229	24.49
February	4320976	6.68	17,467,359	3.82	41906	25.02
March	5335750	7.11	21,471,750	4.13	47836	28.03
April	6031338	8.11	24,006,984	4.71	43516	24.97
May	6117591	8.49	24,390,271	4.95	45737	25.76
June	6332281	7.89	25,236,543	4.57	46955	26.14

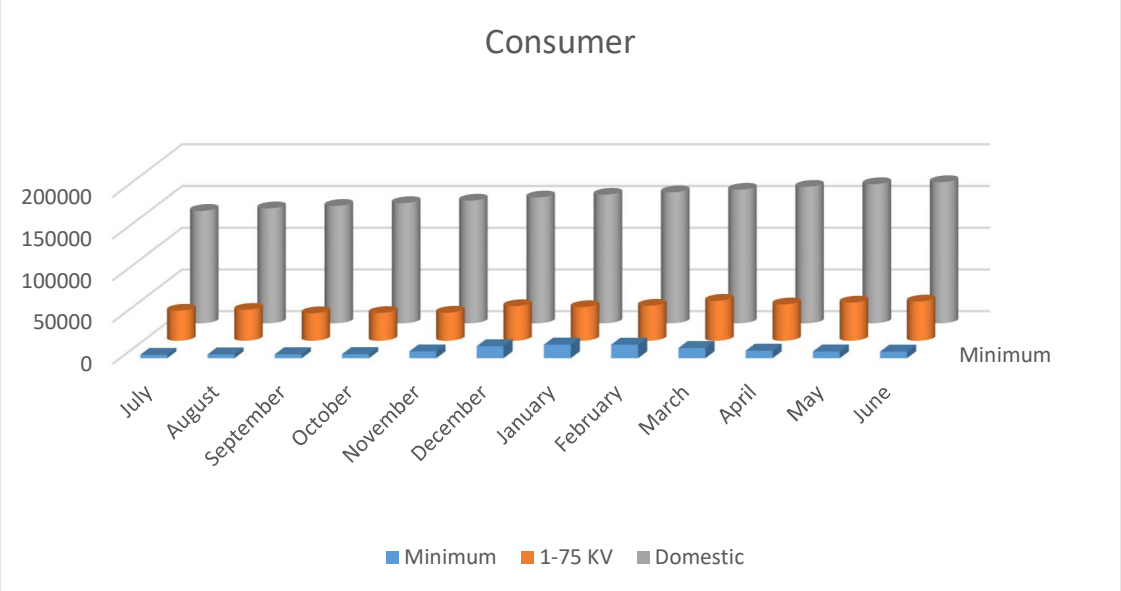


Fig 5.11: Monthly Unit Consumption of other Slabs of Narayanganj PBS – 1(15-16)

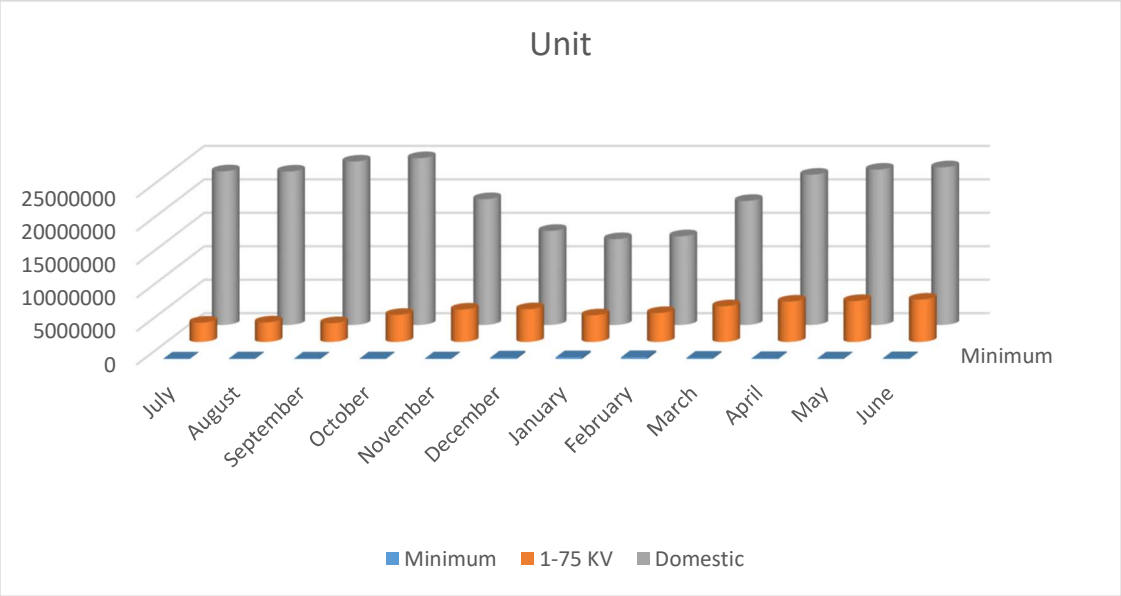


Fig 5.11: Monthly Unit Consumption of other Slabs of Narayanganj PBS – 1(15-16)

In Fig 5.11, monthly energy consumption of the slabs except Domestic are described. Nothing is abnormal in there. Irrigation slab consume more energy February to April than the other months. Consumption of Charitable Institutions and General Power are regular. Consumption of Commercial and Large Power are increased.

Table: 5.6: Monthly Unit Consumption of other Slabs of Narayanganj PBS – 1 (16-17)

	Total		
Month(16-17)	Unit	Revenue	Consumer
July	70709578	473923582	182194
August	82645802	567440309	184878
September	72101530	486876756	187669
October	86804671	595337542	190884
November	78973466	553714606	193412
December	75577232	538040754	195632
January	79173813	568032001	198145
February	74160935	527346039	200627
March	84627376	602466341	203061
April	85962545	599151212	205230
May	91919415	639104641	206709
June	82587635	569025341	207863

Month(16-17)	Domestic					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	28495641	40.30	143662610	30.31	171591	94.18
August	25316187	30.63	125253362	22.07	174124	94.18
September	27336509	37.91	136600851	28.06	176760	94.19
October	27250582	31.39	135654994	22.79	179802	94.19
November	20570482	26.05	103112763	18.62	182180	94.19
December	15194869	20.11	73685919	13.70	184276	94.20
January	14638111	18.49	70793935	12.46	186477	94.11
February	14955211	20.17	72116171	13.68	188535	93.97
March	16107522	19.03	77296205	12.83	190822	93.97
April	22174668	25.80	108383719	18.09	192892	93.99
May	24576302	26.74	119581961	18.71	194304	94.00
June	25528890	30.91	125853996	22.12	195607	94.10

Month(16-17)	Minimum					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	52122	0.07	641,250	0.14	7125	3.91
August	124251	0.15	691,290	0.12	7681	4.15
September	126526	0.18	675,810	0.14	7509	4.00
October	128263	0.15	709,110	0.12	7879	4.13
November	170417	0.22	960,480	0.17	10672	5.52
December	245278	0.32	2,006,820	0.37	22298	11.40
January	292205	0.37	2,147,490	0.38	23861	12.04
February	300975	0.41	2,167,020	0.41	24078	12.00
March	304175	0.36	2,120,670	0.35	23563	11.60
April	254310	0.30	1,374,300	0.23	15270	7.44
May	189040	0.21	1,063,350	0.17	11815	5.72
June	159216	0.19	895,590	0.16	9951	4.79

Month(16-17)	1-75 KV					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	6752228	9.55	26,547,191	5.60	35549	19.51
August	7423773	8.98	29,450,237	5.19	49596	26.83
September	6615335	9.18	26,197,673	5.38	42376	22.58
October	6604241	7.61	26,166,266	4.40	42806	22.43
November	4323532	5.47	17,792,972	3.21	54542	28.20
December	4648845	6.15	18,884,161	3.51	48742	24.92
January	4155432	5.25	16,863,967	2.97	42933	21.67
February	4396921	5.93	17,775,050	3.37	42670	21.27
March	5369871	6.35	21,537,085	3.57	45263	22.29
April	6661332	7.75	26,556,687	4.43	49745	24.24
May	7696321	8.37	30,543,970	4.78	51918	25.12
June	7313823	8.86	29,046,352	5.10	50153	24.13

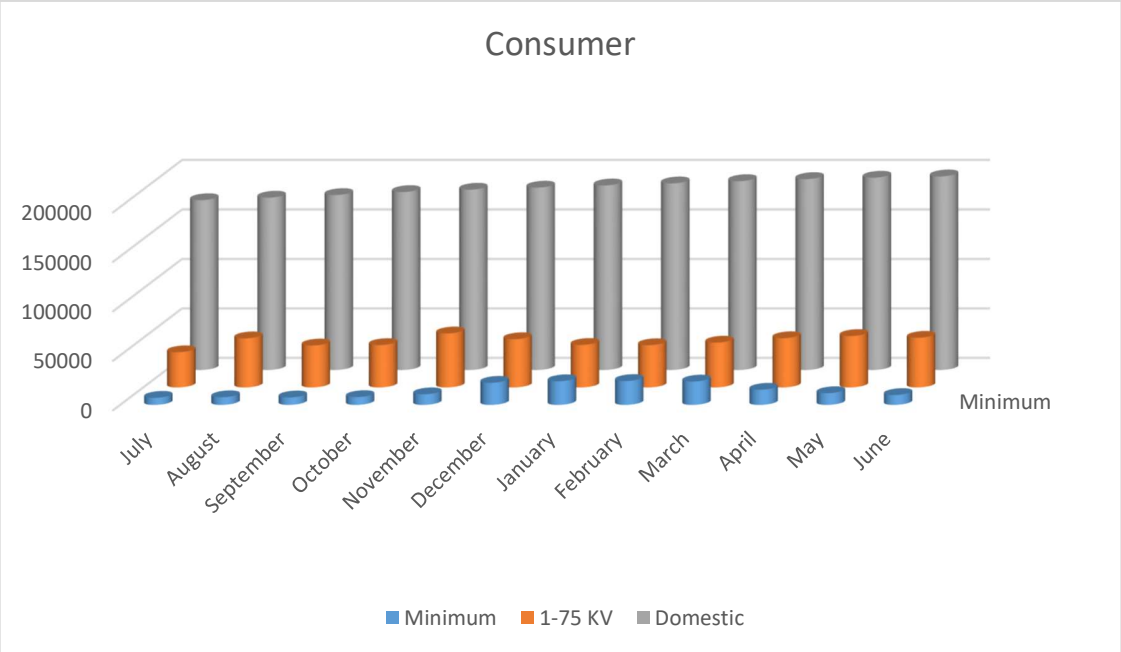


Fig 5.12: Monthly Unit Consumption of other Slabs of Narayanganj PBS-1 - 1(16-17)

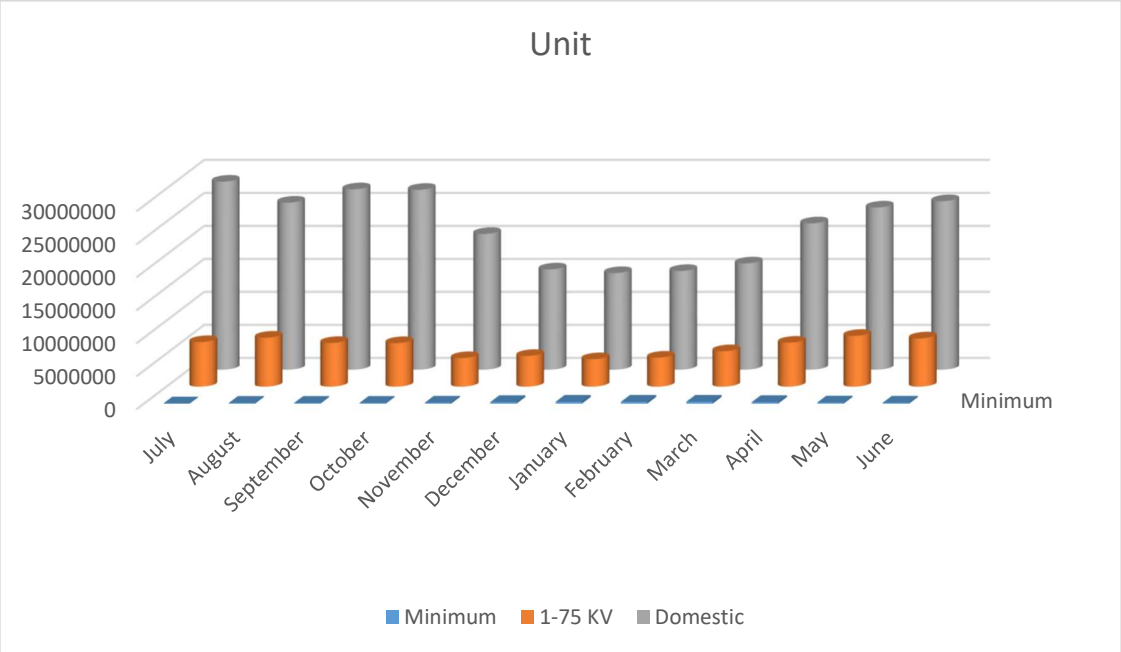


Fig 5.12: Monthly Unit Consumption of other Slabs of Narayanganj PBS-1 - 1(16-17)

In Fig 5.12, monthly energy consumption of the slabs except Domestic are described. Nothing is abnormal in there. Irrigation slab consume more energy February to April than the other months. Consumption of Charitable Institutions and General Power are regular. Consumption of Commercial and Large Power are increased.

Table: 5.7: Monthly Unit Consumption of other Slabs of Narayanganj PBS – 1 (17-18)

	Total		
Month(17-18)	Unit	Revenue	Consumer
July	94894996	648363376	210653
August	102983220	709351398	213029
September	88089710	595324495	215488
October	99756498	688239493	217737
November	95614227	670710196	220021

Month(17-18)	Domestic					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	31971935	33.69	161037830	24.84	198401	94.18
August	31114140	30.21	156040024	22.00	200669	94.20
September	31915155	36.23	159220512	26.75	203137	94.27
October	29057508	29.13	143911476	20.91	205236	94.26
November	23281621	24.35	115168760	17.17	207404	94.27

Month(17-18)	Minimum					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	160179	0.17	843,210	0.13	9369	4.45
August	87752	0.09	865,980	0.12	9622	4.52
September	83805	0.10	824,400	0.14	9160	4.25
October	98986	0.10	898,560	0.13	9984	4.59
November	96736	0.10	1,169,190	0.17	12991	5.90

Month(17-18)	1-75 KV					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	8484288	8.94	33,484,144	5.16	49754	23.62
August	9171761	8.91	35,940,367	5.07	43507	20.42
September	11099029	12.60	43,426,085	7.29	49991	23.20
October	10923101	10.95	42,716,434	6.21	48346	22.20
November	8817860	9.22	34,841,443	5.19	53343	24.24

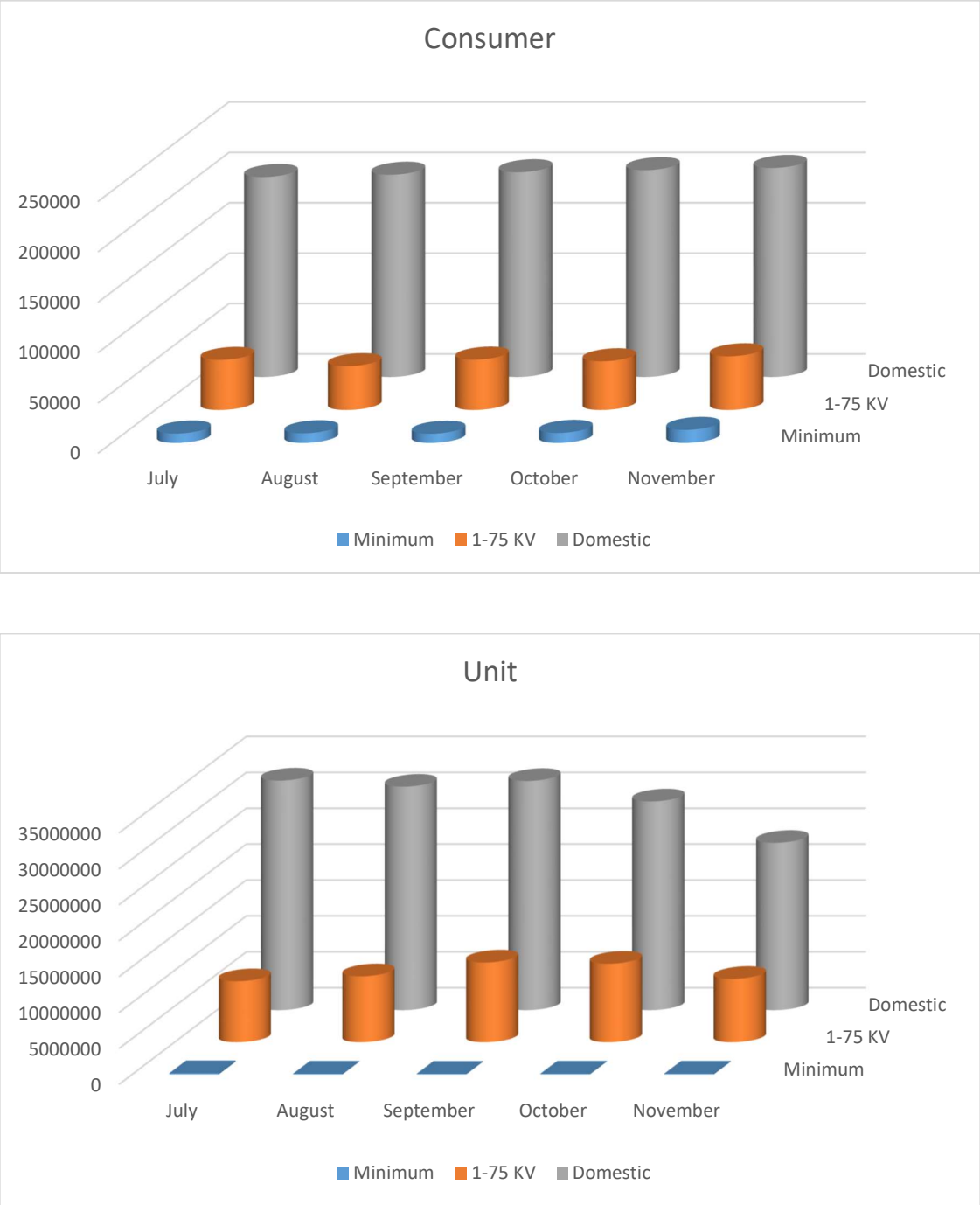


Fig 5.13: Monthly Unit Consumption of other Slabs of Narayanganj PBS - 1 (17-18)

In Fig 5.12, monthly energy consumption of the slabs except Domestic are described. There are six month for 2017 to 2018. Nothing is abnormal in there. Consumption of Charitable

Institutions and General Power are regular. Consumption of Commercial and Large Power are increased.

5.6 Comparison of Total, Commercial, Charitable Institution, Irrigation, General Power, Large Power, 33 KV and Street Lights

In Table 5.8, Minimum and 1-75 KWh slabs are comparing with Domestic total. Tariff rate of these slabs are lower than the bulk price. Data indicate with red color are abnormal in values. According to PBS rule, consumer included in slabs by their consume energy. But average energy consumptions (Unit per consumer) of these data are much higher than its slab. If the data are wrongly included in these slabs, then an amount of profit was lost. PBS should avoid this sort of mistake.

Table: 5.8: Monthly Unit Consumption of other Slabs of Narayanganj PBS – 1 (15-16)

Month(15-16)	Commercial					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	1891631	3.14	18,534,702	4.68	5588	3.88
August	1905810	2.73	18,714,518	4.03	5623	3.82
September	2069243	3.23	20,422,493	4.75	5692	3.79
October	2002316	2.78	20,113,290	4.11	5784	3.77
November	1688217	2.53	17,011,341	3.67	5878	3.75
December	1528355	2.46	15,486,813	3.51	5965	3.71
January	1632315	2.56	16,522,317	3.66	6078	3.70
February	1691742	2.62	17,113,122	3.74	6143	3.67
March	1914912	2.55	19,290,127	3.71	6225	3.65
April	2259181	3.04	22,680,762	4.45	6346	3.64
May	1867345	2.59	18,845,535	3.83	6430	3.62
June	2008622	2.50	20,227,630	3.66	6512	3.63

Month(15-16)	Charitable					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	392209	0.65	2,036,285	0.51	1586	1.10
August	389313	0.56	2,040,120	0.44	1594	1.08
September	440385	0.69	2,279,484	0.53	1609	1.07
October	402854	0.56	2,188,154	0.45	1636	1.07
November	346587	0.52	1,898,757	0.41	1663	1.06
December	226092	0.36	1,277,790	0.29	1675	1.04
January	199781	0.31	1,153,560	0.26	1695	1.03
February	214897	0.33	1,240,102	0.27	1709	1.02
March	325533	0.43	1,817,444	0.35	1721	1.01
April	422573	0.57	2,304,959	0.45	1740	1.00
May	418096	0.58	2,276,710	0.46	1754	0.99
June	408955	0.51	2,256,972	0.41	1776	0.99

Month(15-16)	Irrigation					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	16075	0.03	65,967	0.02	109	0.08
August	14473	0.02	60,209	0.01	85	0.06
September	18060	0.03	74,130	0.02	75	0.05
October	19952	0.03	79,344	0.02	69	0.04
November	16311	0.02	64,594	0.01	69	0.04
December	14938	0.02	59,409	0.01	75	0.05
January	236297	0.37	914,666	0.20	384	0.23
February	922718	1.43	3,542,299	0.77	577	0.34
March	930741	1.24	3,586,254	0.69	580	0.34
April	582323	0.78	2,253,415	0.44	581	0.33
May	67325	0.09	336,584	0.07	569	0.32
June	21343	0.03	84,768	0.02	135	0.08

Month(15-16)	General Power					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	2862534	4.75	22057030	5.57	1550	1.08
August	3852611	5.51	29510692	6.36	1561	1.06
September	3185011	4.98	25163570	5.85	1570	1.05
October	3554580	4.94	27995345	5.71	1571	1.02
November	3622748	5.43	28560896	6.15	1564	1.00
December	3488173	5.60	27376850	6.21	1561	0.97
January	3736790	5.85	29520067	6.54	1568	0.95
February	3863798	5.97	30420955	6.65	1561	0.93
March	3926763	5.23	29830297	5.74	1558	0.91
April	3919534	5.27	30755057	6.03	1569	0.90
May	3027902	4.20	24054676	4.88	1568	0.88
June	3733743	4.65	29373972	5.32	1561	0.87

Month(15-16)	Large Power					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	13017387	21.62	100,609,158	25.41	467	0.32
August	18900599	27.04	141,530,380	30.51	465	0.32
September	15321309	23.95	120,310,500	27.98	467	0.31
October	18733441	26.04	145,749,023	29.75	474	0.31
November	16050778	24.07	125,937,999	27.14	474	0.30
December	15655447	25.16	122,782,945	27.87	474	0.30
January	15133708	23.71	115,475,299	25.58	475	0.29
February	14920740	23.07	116,425,776	25.46	479	0.29
March	15251038	20.32	117,816,683	22.66	476	0.28
April	15023317	20.20	116,823,202	22.91	479	0.27
May	19710016	27.34	152,511,864	30.96	486	0.27
June	21207359	26.42	163,562,480	29.60	490	0.27

Month(15-16)	33 KV					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	19047277	31.64	138,575,973	35.00	36	0.02
August	21878142	31.30	158,258,670	34.11	36	0.02
September	18494602	28.91	139,888,173	32.54	36	0.02
October	22277240	30.97	168,175,887	34.33	36	0.02
November	26147273	39.21	196,816,380	42.41	34	0.02
December	27247790	43.78	205,945,649	46.74	34	0.02
January	30049814	47.08	225,667,268	50.00	34	0.02
February	29804651	46.07	225,067,978	49.21	34	0.02
March	34129211	45.48	257,057,822	49.43	36	0.02
April	29677953	39.91	224,198,391	43.96	36	0.02
May	23771245	32.98	179,736,058	36.48	36	0.02
June	29295589	36.50	220,996,109	39.99	36	0.02

Month(15-16)	Street Light					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	11361	0.02	80,091	0.02	48.00	0.03
August	10893	0.02	78,970	0.02	48	0.03
September	11678	0.02	86,358	0.02	48	0.03
October	12758	0.02	93,610	0.02	48	0.03
November	12707	0.02	93,089	0.02	47	0.03
December	14448	0.02	105,866	0.02	45	0.03
January	13217	0.02	98,249	0.02	46	0.03
February	13175	0.02	97,355	0.02	46	0.03
March	16368	0.02	119,905	0.02	48	0.03
April	17223	0.02	122,414	0.02	50	0.03
May	11495	0.02	85,234	0.02	48	0.03
June	11695	0.01	87,761	0.02	48	0.03

In table-5.8, for commercial users are highest unit consumption in April that is 2259181 and lowest unit consumption in December that is 1528355 units. In July, the unit consumption is 1891631 and this is 3.14% of total unit in this month, Revenue is 18534702 taka and this is 4.68% of total revenue in this month, consumer is 5588 and this is 3.88%

of total consumer in this month. In August, the unit consumption is 1905810 and this is 2.73% of total unit in this month, Revenue is 18714518 taka and this is 4.03% of total revenue in this month, consumer is 5623 and this is 3.82% of total consumer in this month. The other users comparisons is same.

Table: 5.9: Monthly Unit Consumption of other Slabs of Narayanganj PBS – 1 (16-17)

Month(16-17)	Commercial					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	2290125	3.24	22,992,390	4.85	6607	3.63
August	2194949	2.66	22,049,570	3.89	6724	3.64
September	2296963	3.19	23,052,754	4.73	6845	3.65
October	2256574	2.60	22,682,552	3.81	6982	3.66
November	2048844	2.59	20,905,627	3.78	7103	3.67
December	1878973	2.49	18,856,918	3.50	7218	3.69
January	1873766	2.37	19,122,827	3.37	7339	3.70
February	1901394	2.56	19,254,858	3.65	7421	3.70
March	1989208	2.35	20,146,351	3.34	7543	3.71
April	2143690	2.49	21,626,627	3.61	7613	3.71
May	2243665	2.44	22,610,063	3.54	7654	3.70
June	2163127	2.62	21,841,295	3.84	7732	3.72

Month(16-17)	Charitable					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	506107	0.72	2,746,127	0.58	1792	0.98
August	486190	0.59	2,641,748	0.47	1811	0.98
September	474608	0.66	2,587,579	0.53	1835	0.98
October	478556	0.55	2,596,921	0.44	1870	0.98
November	403176	0.51	2,212,831	0.40	1878	0.97
December	237339	0.31	1,355,568	0.25	1883	0.96
January	226951	0.29	1,305,048	0.23	1897	0.96
February	233414	0.31	1,339,655	0.25	1921	0.96
March	270676	0.32	1,530,147	0.25	1933	0.95
April	407713	0.47	2,238,992	0.37	1950	0.95
May	451572	0.49	2,463,968	0.39	1970	0.95
June	499616	0.60	2,720,417	0.48	1989	0.96

Month(16-17)	Irrigation					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	14555	0.02	67,269	0.01	55	0.03
August	12748	0.02	52,817	0.01	48	0.03
September	12295	0.02	51,234	0.01	46	0.02
October	12130	0.01	48,162	0.01	45	0.02
November	8473	0.01	34,796	0.01	44	0.02
December	13583	0.02	53,941	0.01	44	0.02
January	122524	0.15	475,065	0.08	208	0.10
February	634866	0.86	2,443,608	0.46	521	0.26
March	760707	0.90	2,933,840	0.49	533	0.26
April	538848	0.63	2,094,584	0.35	532	0.26
May	95467	0.10	435,981	0.07	518	0.25
June	15783	0.02	90,340	0.02	266	0.13

Month(16-17)	General Power					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	3206779	4.54	25412065	5.36	1555	0.85
August	3911573	4.73	30666212	5.40	1567	0.85
September	3136592	4.35	24915284	5.12	1574	0.84
October	4037081	4.65	31805426	5.34	1576	0.83
November	3710420	4.70	29790393	5.38	1595	0.82
December	4029271	5.33	31761128	5.90	1599	0.82
January	4566840	5.77	36204345	6.37	1606	0.81
February	4530264	6.11	36168353	6.86	1609	0.80
March	5607709	6.63	44378662	7.37	1612	0.79
April	5749381	6.69	45537485	7.60	1616	0.79
May	6965547	7.58	55044511	8.61	1644	0.80
June	6745257	8.17	53330605	9.37	1653	0.80

Month(16-17)	Large Power					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	14117993	19.97	110,146,905	23.24	494	0.27
August	24080369	29.14	185,271,041	32.65	497	0.27
September	16018504	22.22	126,403,405	25.96	501	0.27
October	21039266	24.24	162,756,719	27.34	501	0.26
November	19213451	24.33	148,173,266	26.76	504	0.26
December	19617384	25.96	150,846,972	28.04	506	0.26
January	22493047	28.41	173,768,314	30.59	512	0.26
February	17880917	24.11	138,885,500	26.34	514	0.26
March	23148873	27.35	178,857,881	29.69	514	0.25
April	19166048	22.30	149,303,957	24.92	519	0.25
May	19362818	21.06	150,536,968	23.55	511	0.25
June	18313441	22.17	142,757,153	25.09	507	0.24

Month(16-17)	33 KV					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	22050942	31.19	168,696,585	35.60	37	0.02
August	26611870	32.20	201,273,736	35.47	37	0.02
September	22791935	31.61	173,018,505	35.54	38	0.02
October	31694932	36.51	239,526,514	40.23	38	0.02
November	32979001	41.76	249,198,456	45.00	38	0.02
December	34565963	45.74	261,193,219	48.55	39	0.02
January	35208278	44.47	266,043,129	46.84	39	0.02
February	33983284	45.82	256,838,855	48.70	39	0.02
March	36699906	43.37	277,015,723	45.98	39	0.02
April	35741069	41.58	269,664,892	45.01	40	0.02
May	38185105	41.54	288,149,140	45.09	40	0.02
June	29289336	35.46	222,198,179	39.05	41	0.02

Month(16-17)	Street Light					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	27436	0.04	199,631	0.04	63.00	0.03
August	31916	0.04	231,823	0.04	70	0.04
September	34124	0.05	247,144	0.05	70	0.04
October	35550	0.04	266,254	0.04	70	0.04
November	39619	0.05	286,474	0.05	70	0.04
December	39850	0.05	287,089	0.05	67	0.03
January	44296	0.06	319,338	0.06	67	0.03
February	41585	0.06	299,039	0.06	67	0.03
March	42775	0.05	307,532	0.05	65	0.03
April	41128	0.05	300,956	0.05	68	0.03
May	38939	0.04	282,049	0.04	68	0.03
June	32185	0.04	233,356	0.04	68	0.03

In table-5.9, for commercial users are highest unit consumption in September that is 2296963 and lowest unit consumption in January that is 1873766 units. In November, the unit consumption is 2048844 and this is 2.59% of total unit in this month, Revenue is 20905627 taka and this is 3.78% of total revenue in this month, consumer is 7103 and this is 3.67% of total consumer in this month. In December, the unit consumption is 1878973 and this is 2.49% of total unit in this month, Revenue is 18856918 taka and this is 3.50% of total revenue in this month, consumer is 7218 and this is 3.69% of total consumer in this month. The other users comparisons is same.

Table: 5.10: Monthly Unit Consumption of other Slabs of Narayanganj PBS – 1 (17-18)

Month(17-18)	Commercial					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	2647845	2.79	26,998,015	4.16	7855	3.73
August	2445339	2.37	25,190,604	3.55	7934	3.72
September	2468775	2.80	24,844,967	4.17	7969	3.70
October	2283409	2.29	23,203,273	3.37	8086	3.71
November	2192576	2.29	22,325,209	3.33	8172	3.71

Month(17-18)	Charitable					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	547371	0.58	3,014,425	0.46	2025	0.96
August	573947	0.56	3,122,492	0.44	2041	0.96
September	550886	0.63	2,989,428	0.50	2054	0.95
October	539795	0.54	2,982,961	0.43	2076	0.95
November	421954	0.44	2,337,693	0.35	2079	0.94

Month(17-18)	Irrigation					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	13758	0.01	56,988	0.01	71	0.03
August	10152	0.01	41,297	0.01	49	0.02
September	9982	0.01	40,556	0.01	46	0.02
October	10025	0.01	40,452	0.01	46	0.02
November	10164	0.01	40,989	0.01	46	0.02

Month(17-18)	General Power					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	6538412	6.89	51607694	7.96	1682	0.80
August	6449732	6.26	50853493	7.17	1714	0.80
September	4534154	5.15	36220985	6.08	1656	0.77
October	6233864	6.25	49297651	7.16	1665	0.76
November	7144073	7.47	56400052	8.41	1681	0.76

Month(17-18)	Large Power					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	21008054	22.14	162,808,526	25.11	510	0.24
August	23076871	22.41	178,006,655	25.09	512	0.24
September	19061704	21.64	148,712,674	24.98	516	0.24
October	20530989	20.58	159,395,425	23.16	518	0.24
November	3562844	3.73	30,932,529	4.61	527	0.24

Month(17-18)	33 KV					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	32124480	33.85	242,528,183	37.41	41	0.02
August	39265756	38.13	295,755,198	41.69	42	0.02
September	29507560	33.50	222,995,020	37.46	42	0.02
October	41058869	41.16	309,104,757	44.91	42	0.02
November	58955592	61.66	443,177,470	66.08	41	0.02

Month(17-18)	Street Light					
	Unit	% of total Unit	Revenue	% of total Revenue	Consumer	% of total Consumer
July	43141	0.05	311,715	0.05	68.00	0.03
August	47283	0.05	341,635	0.05	68	0.03
September	41494	0.05	300,353	0.05	68	0.03
October	42039	0.04	303,498	0.04	68	0.03
November	45403	0.05	327,494	0.05	71	0.03

In table-5.10, for commercial users are highest unit consumption in July that is 2647845 and lowest unit consumption in November that is 2192576 units. In September, the unit consumption is 2468775 and this is 2.80% of total unit in this month, Revenue is 24844967 taka and this is 4.17% of total revenue in this month, consumer is 7969 and this is 3.70% of total consumer in this month. In October, the unit consumption is 2283409 and this is 2.29% of total unit in this month, Revenue is 23203273 taka and this is 3.37% of total revenue in this month, consumer is 8086 and this is 3.71% of total consumer in this month. The other user's comparisons is same.

5.7 Summary

Revenue of NPBS-1 is not sufficient to meet the profit. Wrongly included data in Domestic slabs are increasing the financial loss. Demand of all Domestic slabs is same. If demands vary in higher consuming slabs then revenue would have been increased a little and demand charge would be more effectible for PBS. Overall energy consumption, consumer and revenue are increasing.

CHAPTER 6

Electricity Cost and Rate

6.1 Electricity Cost

Cost is a key word in a business, where profit or loss is a concern. Power supply is a business. Cost of electricity is how much one spent or pays to generate, distribute or consume electricity. Electricity is the major power source in all over the world. That is why electricity costs are important for improving economic and social benefits.

6.2 Electricity Purchase Cost (EPC)

The electricity purchase cost consists of the purchase of electricity costs and bulk price and wheel charge. Bulk pricing is provided to the generation company and the holding charge is paid by the distribution agency. As a distribution wing, NPBS-1 gives bulk price for BPDB or their IPPs to purchase electrical power and wheeling charges for wheeling in PGCB.

6.2.1 Bulk Rate

BPDB sells distribution companies with their bulk rates to generate electricity. According to the BERC situation, this rate has been amended. Distribution companies buy electricity from some private generation companies. But the rate is much lower than the bulk rate.

6.2.2 Wheeling Charge

Wheel charges are paid by PGCB distribution companies. The company's operation has taken up infrastructure development projects for further development. For financial innovation, ensure proper maintenance of its existing assets, the PGCB will now be paid better than what the distribution companies have received. At the bulk supply level, it is clear that major contributor in terms of loss of purchase cost from rental power plants. More detailed research on the quantity of losses and the supply and loss of different bulk

buyers will be needed. A more urgent need to deal with the short-term generation plan so that electricity is available in low-cost grids. A concerted effort was made to establish a competitive sender's regime for generating power through a cooperative pool, to increase competitive skills from medium to long-term, generation private and public sectors. At retail level, cross-subsidiaries are raised between different class customers.

6.3 Distribution Cost

Expense for distributing the electric energy to consumers is said to be distribution cost. Operation and maintenance cost, Consumer selling expenses, Administration and general expenses, Depreciation and amortization expenses, Tax expenses and interest expenses are included in distribution cost.

Distribution Cost = Operation & Maintenance Expenses + Consumer selling expenses + Administration & General Expenses + Depreciation & Amortization + Tax Expenses + Interest Expenses

Table 6.1: Distribution and Total Supply Cost in 2015-16 of NPBS-1

Month	EC	Distribution Cost						Total Distribution cost	SL(10^7Tk)	Total Supply Cost
		OME	CSE	AGE	DAE	TE	IE			
July	27.384	0.522	0.951	0.596	2.609	0.071	0.190	4.938	0.208	32.531
August	31.684	0.541	0.773	0.586	2.628	0.085	0.190	4.803	0.310	36.797
September	28.785	0.622	0.935	0.679	2.633	0.247	0.190	5.306	0.193	34.284
October	31.642	0.473	0.826	0.600	2.631	0.187	0.190	4.907	0.114	36.663
November	28.959	1.014	0.783	0.544	4.955	0.089	0.650	8.036	0.088	37.082
December	27.253	0.447	0.781	0.556	2.631	0.067	0.637	5.119	0.106	32.478
January	27.541	1.016	1.296	0.823	2.648	0.101	0.341	6.226	0.087	33.855
February	34.135	0.445	0.782	0.550	-2.720	0.052	0.190	-0.701	0.028	33.462
March	40.999	0.366	0.821	0.566	0.116	0.105	0.190	2.165	0.111	43.275
April	40.888	0.421	0.854	0.675	0.317	0.004	0.190	2.461	0.158	43.507
May	39.599	0.488	0.786	0.436	1.434	0.126	0.190	3.460	0.277	43.336
June	147.736	1.808	2.170	4.512	-6.291	0.151	-0.376	1.975	0.097	149.808
Grand total	**506.606**	**8.165**	**11.758**	**11.123**	**13.592**	**1.285**	**2.772**	**48.694**	**1.777**	**557.077**

Table 6.2: Distribution and Total Supply Cost in 2016-17of NPBS-1

Month	EC	Distribution Cost						Total Distribution cost	SL(10^7Tk)	Total Supply Cost
		OME	CSE	AGE	DAE	TE	IE			
July	37.698	0.563	0.970	0.621	1.408	0.059	0.208	3.828	0.096	41.622
August	44.207	0.817	1.426	0.891	1.579	0.108	0.208	5.028	0.163	49.398
September	38.518	0.779	1.252	0.809	5.575	0.107	0.208	8.730	0.133	47.381
October	46.708	0.928	1.025	0.726	1.668	0.121	0.208	4.676	0.150	51.534
November	40.179	0.666	0.985	0.713	1.680	0.129	0.208	4.381	0.019	44.579
December	41.874	0.859	1.115	0.896	1.694	0.144	0.208	4.915	0.401	47.190
January	39.279	0.674	1.050	0.761	1.702	0.113	0.115	4.415	0.004	43.697
February	36.755	0.607	1.081	0.764	1.704	0.105	0.194	4.456	0.004	41.215
March	42.001	1.636	2.202	1.372	1.680	0.097	0.194	7.182	0.030	49.213
April	44.302	0.922	1.108	0.792	1.684	0.095	0.194	4.795	0.319	49.417
May	48.995	0.693	1.146	0.790	1.741	0.099	0.194	4.664	0.490	54.148
June	44.956	1.088	1.460	4.490	2.145	0.200	0.142	9.525	0.483	54.963
Grand total	**505.472**	**10.230**	**14.819**	**13.625**	**24.262**	**1.378**	**2.279**	**66.593**	**2.292**	**574.357**

Table 6.3: Distribution and Total Supply Cost in 2017-18 of NPBS-1

Month	EC	Distribution Cost						Total Distribution cost	SL(10^7Tk)	Total Supply Cost
		OME	CSE	AGE	DAE	TE	IE			
July	47.397	0.638	1.094	0.679	1.682	0.115	0.190	4.399	0.046	51.841
August	52.872	1.001	1.561	1.011	1.682	0.112	0.190	5.558	0.203	58.632
September	42.959	1.042	1.163	0.758	1.726	0.082	0.190	4.962	0.022	47.943
October	50.224	0.657	1.130	0.779	1.125	0.129	0.190	4.010	0.106	54.339
November	46.110	0.804	1.098	1.009	1.838	0.115	0.190	5.055	0.006	51.171
December	44.929	1.195	1.255	1.431	1.891	0.080	0.139	5.990	0.031	50.951
January	43.689	1.284	1.382	1.196	1.728	0.078	0.190	5.859	0.062	49.610
February	40.917	0.601	1.034	1.204	1.957	0.054	0.190	5.041	0.051	46.009
March	52.725	1.007	1.236	1.095	1.965	0.117	0.190	5.610	0.430	58.766
April	48.636	0.611	0.982	0.977	1.965	0.098	0.190	4.823	0.086	53.545
May	52.990	0.693	1.006	0.986	1.995	0.129	0.190	4.999	0.505	58.493
June	48.746	1.264	1.544	2.646	2.116	0.220	1.040	8.830	0.384	57.959
Grand total	**572.193**	**10.800**	**14.485**	**13.770**	**21.671**	**1.329**	**3.078**	**65.134**	**1.932**	**639.259**

6.3.1 Operation & Maintenance Expenses (OME)

All types of costs for operation and maintenance are included as OME. Operation supervision and engineering, the cost of operation, cost of operation, cost of overhead line, meter costs, cost of operation and maintenance of consumer installation. In Table 6.1, all data is described in crore taka.

6.3.2 Consumer Selling Expenses (CSE)

A selling expense is a cost incurred to promote and market products to customers. These costs can include anything from advertising campaigns and store displays to delivering goods to customers. Any expense that is associated with selling a good or making a sale is considered a selling expense.

6.3.3 Administration and General Expenses (AGE)

Administrative and general expenses are broken into operation and maintenance costs, cost is being mostly based on operation. Operation costs include administrative and general wages, office supplies and costs, transfer administrative expenses, external services, property insurance, injuries and damage, rent and service fees. The cost of maintenance includes only the maintenance of the common plant.

6.3.4 Depreciation & Amortization Expenses (DAE)

The depreciation expenses included as a cost is the monthly depreciation for all used and useful assets. In a broader economic sense, the depreciation cost is the aggregate amount of capital that is "used up" in a given period, such as a fiscal year. This value can be examined for trends in capital spending and accounting aggressiveness.

6.3.5 Tax Expenses (TE)

All type of tax is included in tax expenses such as expense for revenue stamp, municipal tax, land and development tax etc.

6.3.6 Interest Expenses (IE)

Expenses of payable interests on loans from bank, BREB or from any other loans are included as IE. In 2015-16, NPBS-1 pays 3.523 crore Taka, In 2016-17, NPBS-1 pays 2.279 crore Taka and In 2017-18, NPBS-1 pays 3.078 crore Taka.

In Fig 6.1, DAE was very high in June, 2016. AGE was very high in June, 2016 respect the other months. CSE was also high in June, 2016 from rest of the months. OME increased in the same months where CSE rise.

In Fig 6.2, DAE was very high in September, 2016. AGE was very high in June, 2017 respect the other months. CSE rise in March, 2017 from rest of the months. OME increased in the same months where CSE rise.

In Fig 6.3, DAE was very high in June, 2018. AGE increased in the same months where DAE rise. CSE rise in June, 2018 from rest of the months. OME rise in, January 2018 from rest of the months.

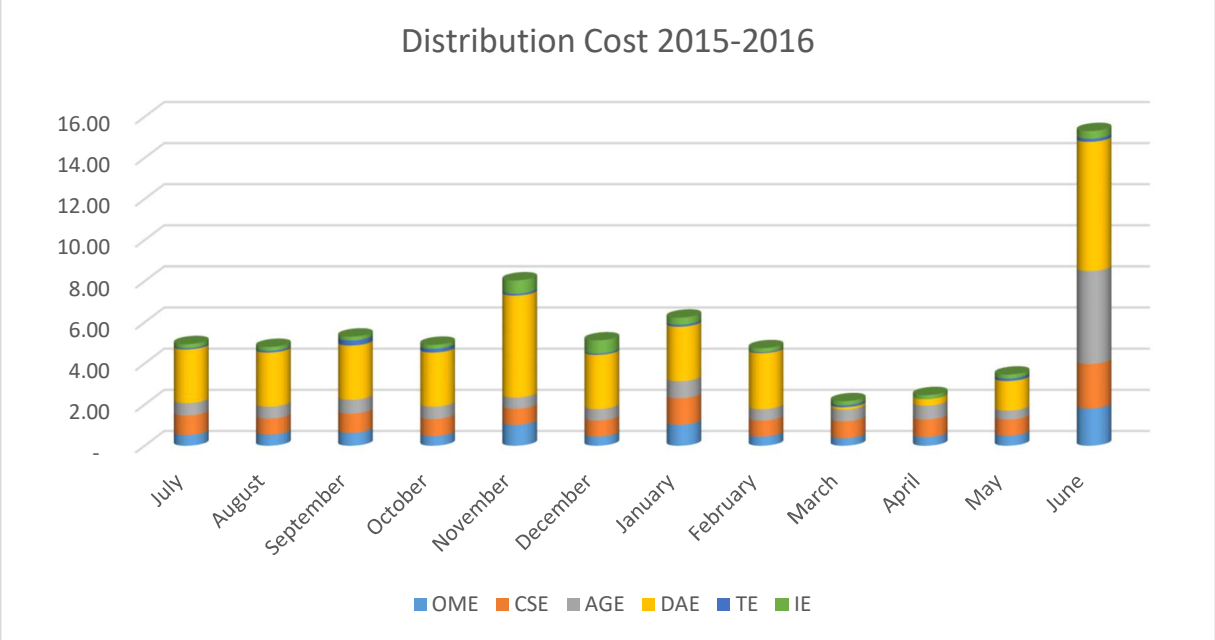


Fig 6.1: Distribution Cost (In 10^7 Taka) of NPBS-1 in 2015-16

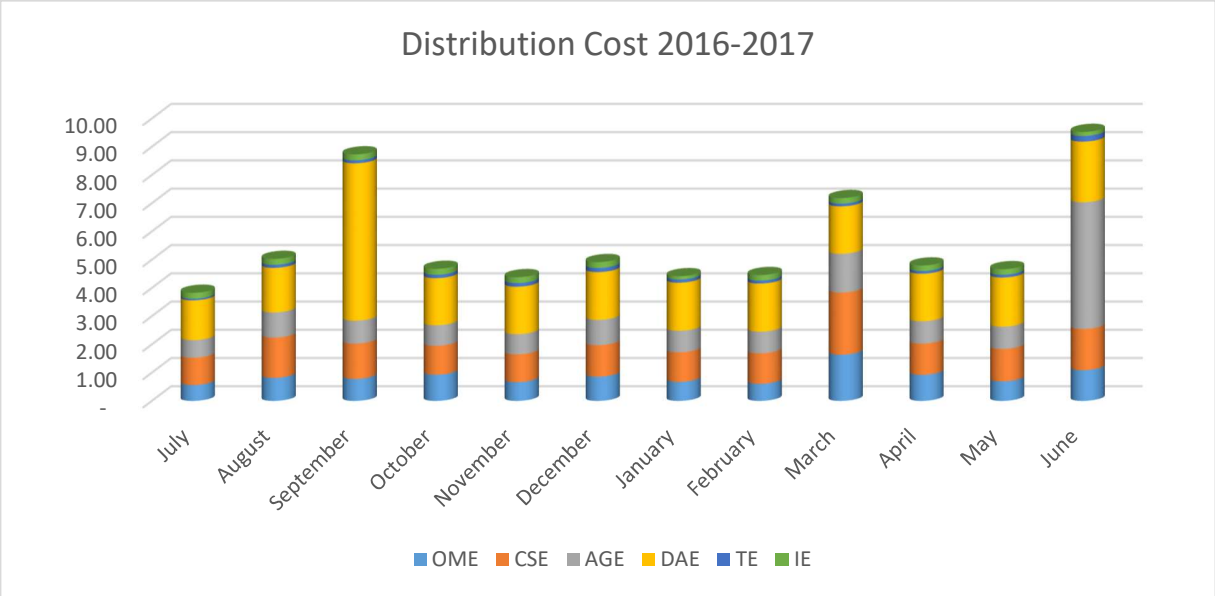


Fig 6.2: Distribution Cost (In 10^7 Taka) of NPBS-1 in 2016-17

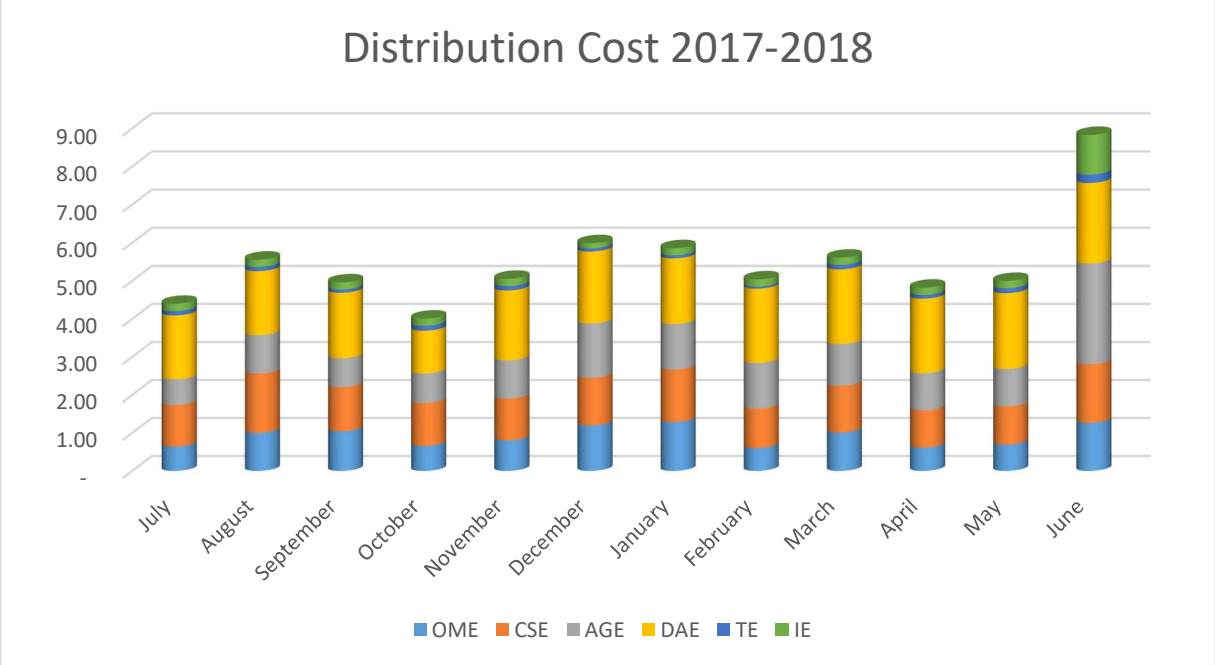


Fig 6.3: Distribution Cost (In 10^7 Taka) of NPBS-1 in 2017-18

6.3.7 System Loss (Tk.)

Calculate system loss KWh in taka. System loss in taka is help to calculate the distribution cost more correctly and showed an economical figure of system loss. NPBS had a system

loss of total 1.77723 crore taka in 2015-16, 2.29180 crore taka in 2016-17 and 1.93221 crore taka in 2017-18.

System Loss (Tk.) = System Loss (Energy) * System loss (Tk./Unit)

6.4 Revenue

The revenue is the amount of income that a PBS should have opportunity to earn in order to maintain operations and attract capital for investment, but still maintains least cost for consumers. Revenue of NPBS is 40 to 75 crore taka per month in 2015-16, 55 to 70 crore taka per month in 2016-17 and 70 to 80 crore taka per month in 2017-18.

6.4.1 Total Revenue (TR)

Total revenue is the total earning money of a PBS. A PBS earns its revenue from two sources. One is from sales of energy to the consumers and the other is revenue from other operating sources.

Total revenue = Revenue from sales of energy + Revenue from others.

In fig 6.4, NPBS-1 earn there highest revenue in June 2016. The lowest revenue in July 2015

In fig 6.5, NPBS-1 earn there highest revenue in March 2016, April 2016, May 2016 and June 2016. The lowest revenue in July 2017.

In fig 6.6, NPBS-1 earn there highest revenue in August 2017, December 2017, March 2018, April 2018 May 2018 and June 2018. The lowest revenue in September 2017 and February 2018.

Table 6.4: Import energy, Purchase cost, Expenditure, Sell energy, Revenue, Distribution cost of energy according to the Thesis Calculation on NPBS- 1 (2015-16)

Month	Energy Import (MU)	Energy Purchase Cost (10^7Tk)	Energy Sell (MU)	Distribution cost (10^7Tk)	Total Supply Cost (10^7Tk)	Revenue from Sale Energy (10^7Tk)	Revenue from other sources (10^7Tk)	Total Revenue (10^7Tk)	System Loss%	Surplus (+/-) (10^7Tk)	System Loss (10^7Tk)	System Loss (Tk/Unit)	Distribution Cost (Tk/Unit)	Total Revenue (Tk/Unit)
July	67.424	27.384	61.798	4.938	26.336	40.277	1.210	41.488	8.344	15.152	0.208	0.370	(0.170)	6.153
August	79.171	31.684	71.717	4.803	31.067	47.169	1.225	48.394	9.415	17.327	0.310	0.416	(0.086)	6.113
September	71.285	28.785	65.685	5.306	59.109	43.768	8.499	52.266	7.855	(6.843)	0.193	0.344	4.617	7.332
October	78.217	31.642	73.655	4.907	42.849	49.767	0.973	50.740	5.832	7.890	0.114	0.251	1.522	6.487
November	71.990	28.959	68.137	8.036	37.623	47.060	1.551	48.611	5.352	10.988	0.088	0.227	1.272	6.752
December	67.690	27.253	63.597	5.119	40.119	44.675	4.979	49.654	6.046	9.536	0.106	0.259	2.023	7.336
January	69.075	27.541	65.293	6.226	37.345	45.799	0.811	46.609	5.477	9.265	0.087	0.231	1.501	6.748
February	85.035	34.135	82.617	(0.701)	51.455	53.284	2.134	55.418	2.844	3.964	0.028	0.118	2.096	6.517
March	102.807	40.999	97.598	2.165	58.030	61.027	1.722	62.749	5.067	4.720	0.111	0.213	1.745	6.104
April	103.042	40.888	96.838	2.461	58.882	59.612	4.639	64.251	6.021	5.369	0.158	0.254	1.858	6.235
May	98.936	39.599	90.997	3.460	55.503	56.658	4.845	61.503	8.025	6.000	0.277	0.349	1.748	6.216
June	369.490	147.736	360.152	2.915	67.977	67.589	1.996	74.182	2.527	6.206	0.097	0.104	(2.215)	2.008
Grand total	**1,264.162**	**506.606**	**1,198.084**	**49.634**	**566.293**	**616.683**	**34.585**	**655.866**	**72.804**	**89.573**	**1.777**	**3.135**	**15.911**	**74.001**

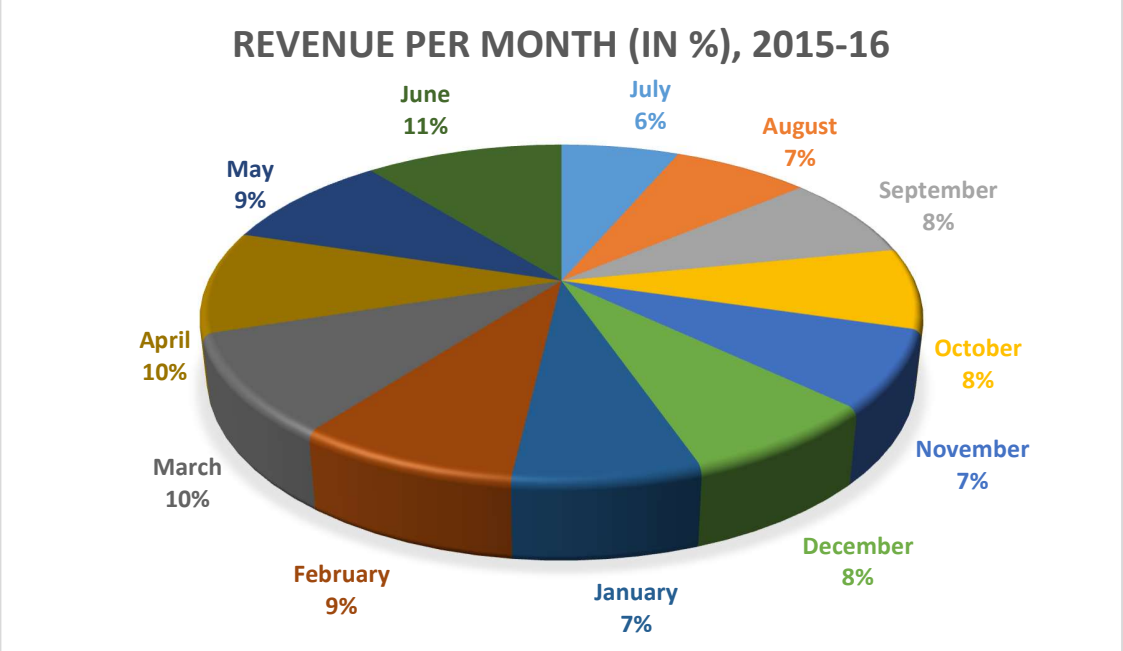


Fig 6.4: Revenue per month (in%),2015-16

Table 6.5: Import energy, Purchase cost, Expenditure, Sell energy, Revenue, Distribution cost of energy according to the Thesis Calculation on NPBS- 1 (2016-17)

Month	Energy Import (MU)	Energy Purchase Cost (10^7Tk)	Energy Sell (MU)	Distribution cost (10^7Tk)	Total Supply Cost (10^7Tk)	Revenue from Sale Energy (10^7Tk)	Revenue from other sources (10^7Tk)	Total Revenue (10^7Tk)	System Loss%	Surplus (+/-) (10^7Tk)	System Loss (10^7Tk)	System Loss (Tk/Unit)	Distribution Cost (Tk/Unit)	Total Revenue (Tk/Unit)
July	94.946	37.698	90.269	3.828	48.010	54.733	0.253	54.986	4.926	6.976	0.096	0.206	1.142	5.791
August	110.464	44.207	103.964	5.028	56.710	64.307	1.935	66.242	5.884	9.533	0.163	0.250	1.203	5.997
September	96.511	38.518	91.002	8.730	47.467	55.793	3.620	59.413	5.708	11.946	0.133	0.242	0.983	6.156
October	117.637	46.708	111.165	4.676	61.411	68.877	1.304	70.180	5.501	8.770	0.150	0.231	1.323	5.966
November	101.619	40.179	99.432	4.381	55.153	63.278	1.425	64.703	2.153	9.550	0.019	0.087	1.506	6.367
December	105.784	41.874	95.925	4.915	55.868	61.622	5.255	66.877	9.320	11.009	0.401	0.407	1.459	6.322
January	99.930	39.279	98.952	4.415	57.308	64.417	0.665	65.082	0.979	7.774	0.004	0.039	1.822	6.513
February	93.457	36.755	92.483	4.456	53.324	59.689	1.161	60.850	1.042	7.527	0.004	0.041	1.792	6.511
March	106.629	42.001	103.797	7.182	60.735	67.639	2.742	70.382	2.656	9.647	0.030	0.107	1.805	6.601
April	110.814	44.302	101.795	4.795	60.959	66.255	2.275	68.531	8.139	7.572	0.319	0.354	1.636	6.184
May	122.048	48.995	110.440	4.664	67.129	71.065	3.923	74.988	9.510	7.860	0.490	0.422	1.642	6.144
June	112.576	44.956	101.499	9.525	57.174	64.305	4.079	68.384	9.839	11.209	0.483	0.436	1.204	6.074
Grand total	1,272.414	505.472	1,200.724	66.593	681.247	761.981	28.637	790.619	65.657	109.371	2.292	2.822	17.516	74.627

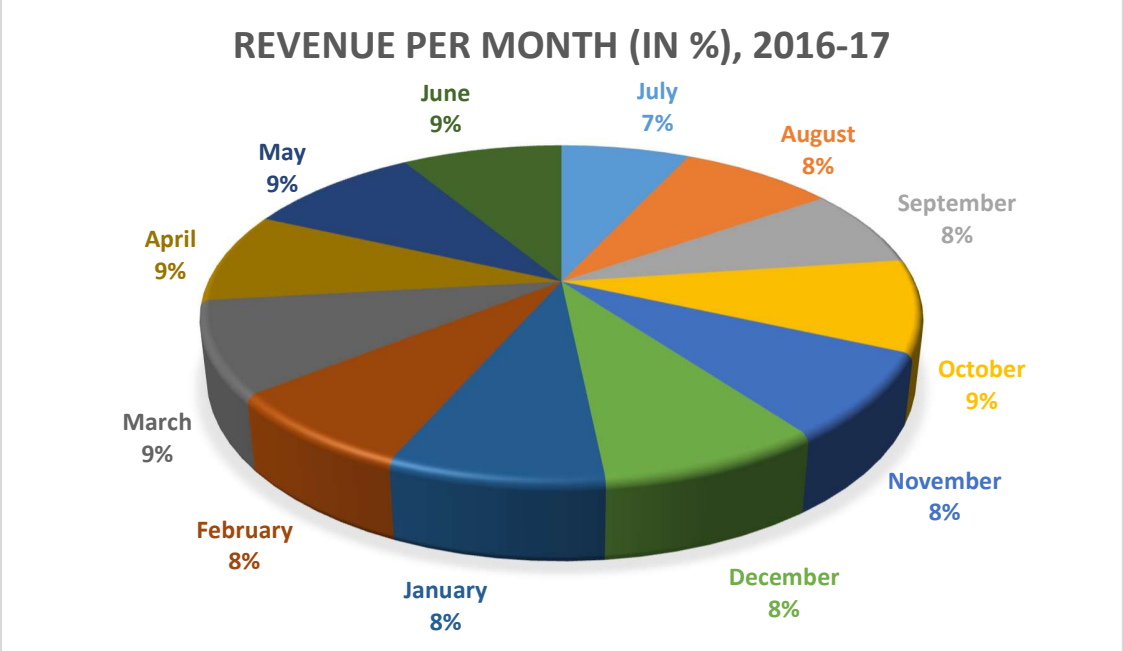


Fig 6.5: Revenue per month (in%),2016-17

Table 6.6: Import energy, Purchase cost, Expenditure, Sell energy, Revenue, Distribution cost of energy according to the Thesis Calculation on NPBS- 1 (2017-18)

Month	Energy Import (MU)	Energy Purchase Cost (10^7Tk)	Energy Sell (MU)	Distribution cost (10^7Tk)	Total Supply Cost (10^7Tk)	Revenue from Sale Energy (10^7Tk)	Revenue from other sources (10^7Tk)	Total Revenue (10^7Tk)	System Loss%	Surplus (+/-) (10^7Tk)	System Loss (10^7Tk)	System Loss (Tk/Unit)	Distribution Cost (Tk/Unit)	Total Revenue (Tk/Unit)
July	119.005	47.397	115.354	4.399	65.080	72.796	0.640	73.436	3.068	8.355	0.046	0.126	1.533	6.171
August	132.358	52.872	124.404	5.558	72.014	79.402	2.460	81.862	6.010	9.848	0.203	0.255	1.539	6.185
September	107.581	42.959	105.147	4.962	61.664	66.741	3.645	70.386	2.262	8.722	0.022	0.092	1.779	6.543
October	125.564	50.224	119.932	4.010	69.789	76.854	1.235	78.089	4.485	8.300	0.106	0.188	1.631	6.219
November	115.143	46.110	113.815	5.055	59.637	74.351	1.738	76.089	1.154	16.453	0.006	0.047	1.188	6.608
December	112.803	44.929	109.878	5.990	75.695	76.798	4.888	81.686	2.593	5.990	0.031	0.106	2.800	7.241
January	109.978	43.689	105.913	5.859	69.048	74.024	0.883	74.907	3.696	5.859	0.062	0.152	2.394	6.811
February	102.905	40.917	99.330	5.041	64.887	69.490	0.438	69.928	3.475	5.041	0.051	0.143	2.413	6.795
March	131.696	52.725	120.324	5.610	78.716	83.685	0.641	84.326	8.635	5.610	0.430	0.378	2.160	6.403
April	120.848	48.636	115.880	4.823	76.022	79.690	1.155	80.845	4.111	4.823	0.086	0.173	2.363	6.690
May	132.216	52.990	119.927	4.999	68.039	81.777	6.176	87.953	9.294	19.915	0.505	0.411	1.255	6.652
June	121.097	48.746	110.819	8.830	79.114	76.012	4.028	80.040	8.487	0.926	0.384	0.373	2.740	6.610
Grand total	1,431.194	572.193	1,360.723	65.134	839.705	911.620	27.926	939.546	57.270	99.842	1.932	2.445	23.797	78.928

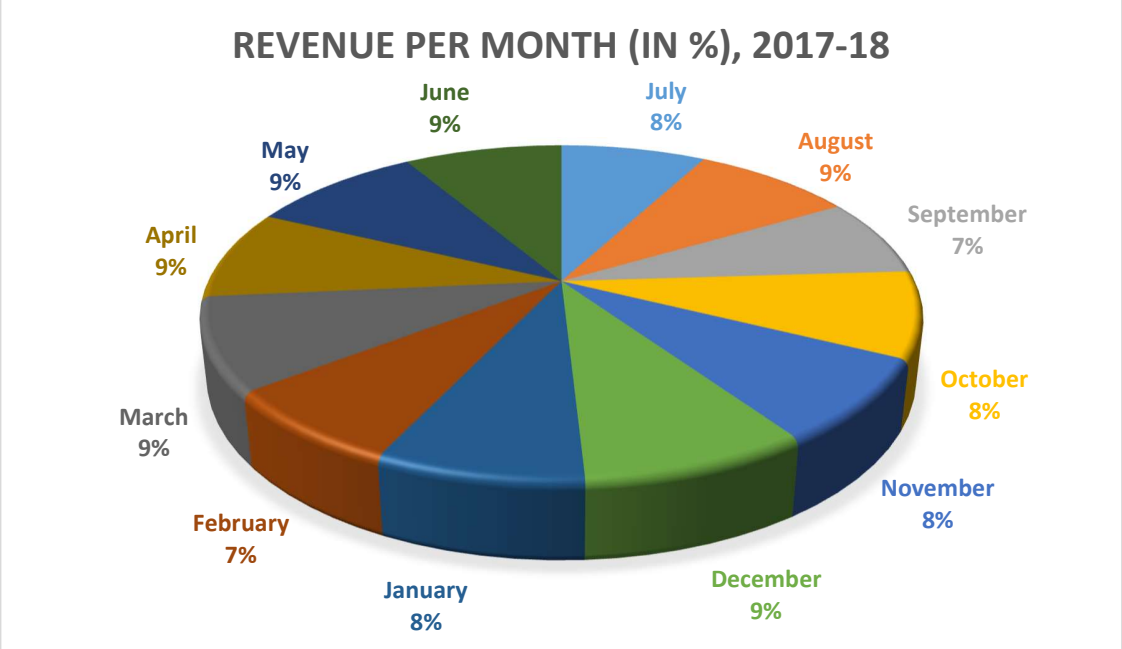


Fig 6.6: Revenue per month(in%),2017-18

6.4.1.1 Revenue from Sales Energy

Revenue from Consumers only for sale from Energy This section. This amount is collected through the electricity bill from consumers. Demand charges, Corresponding energy rates and some other charges are included in this revenue.

6.4.1.2 Revenue from Others

Revenue from others is actually summation of operating revenue from other sources, non-operating margins- interest and non-operating margins-Others.

Revenue from others = Other Operating Revenue + Non-operating Margins- Interest + Non-operating Margins-Others

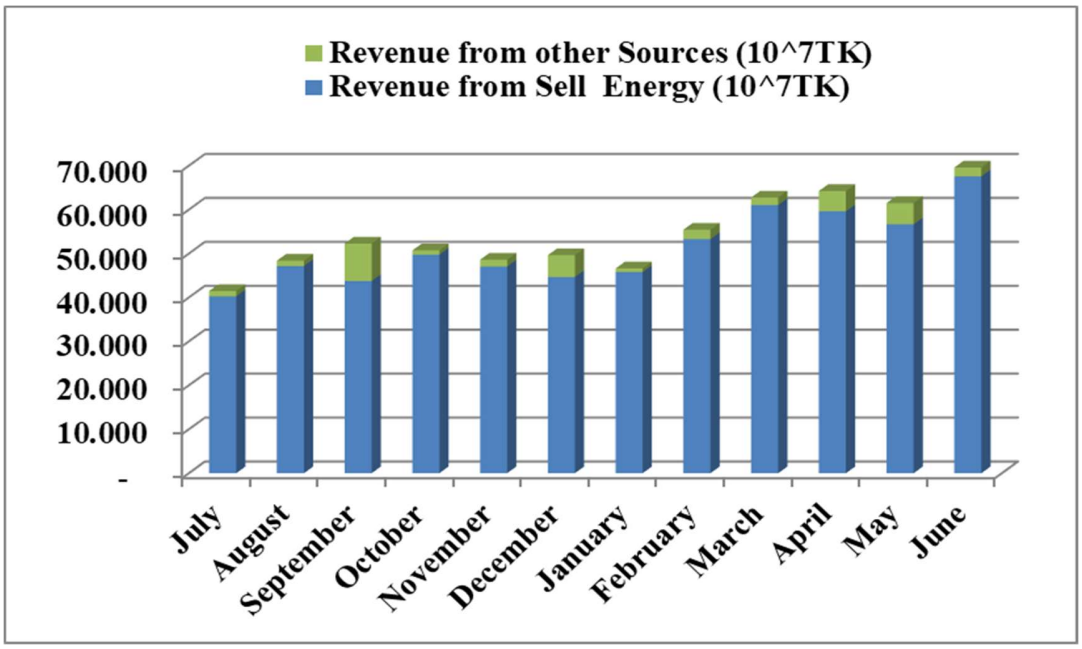


Fig 6.7: Monthly Total Revenue of NPBS-1 (10^7 Tk) (2015-16)

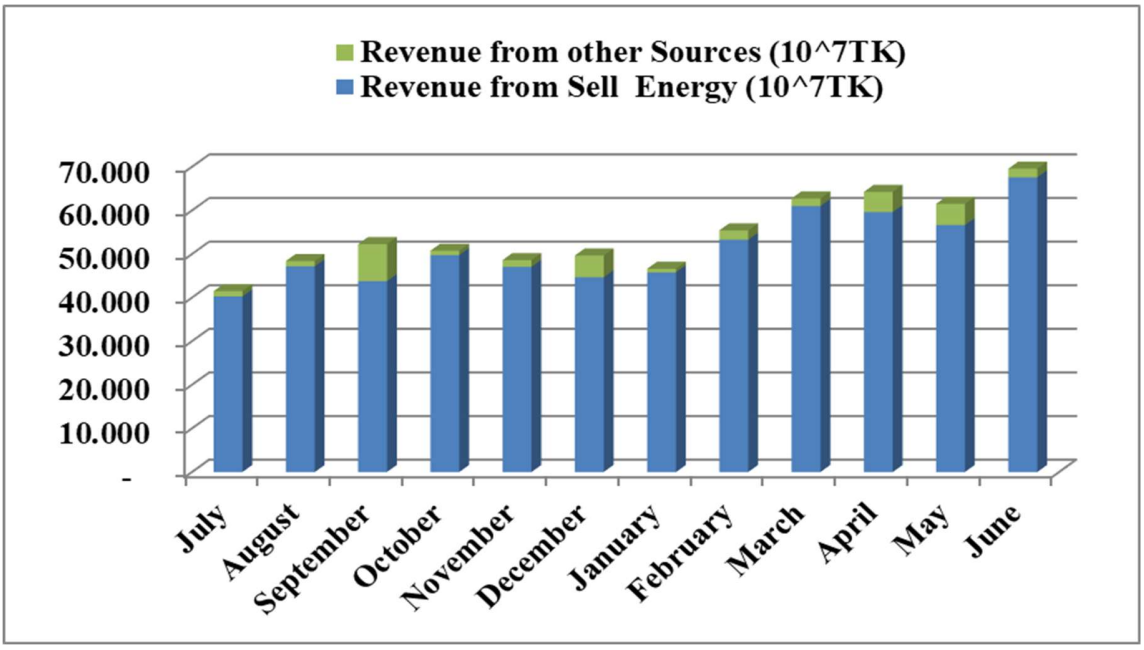


Fig 6.8: Monthly Total Revenue of NPBS-1 (10^7 Tk) (2016-17)

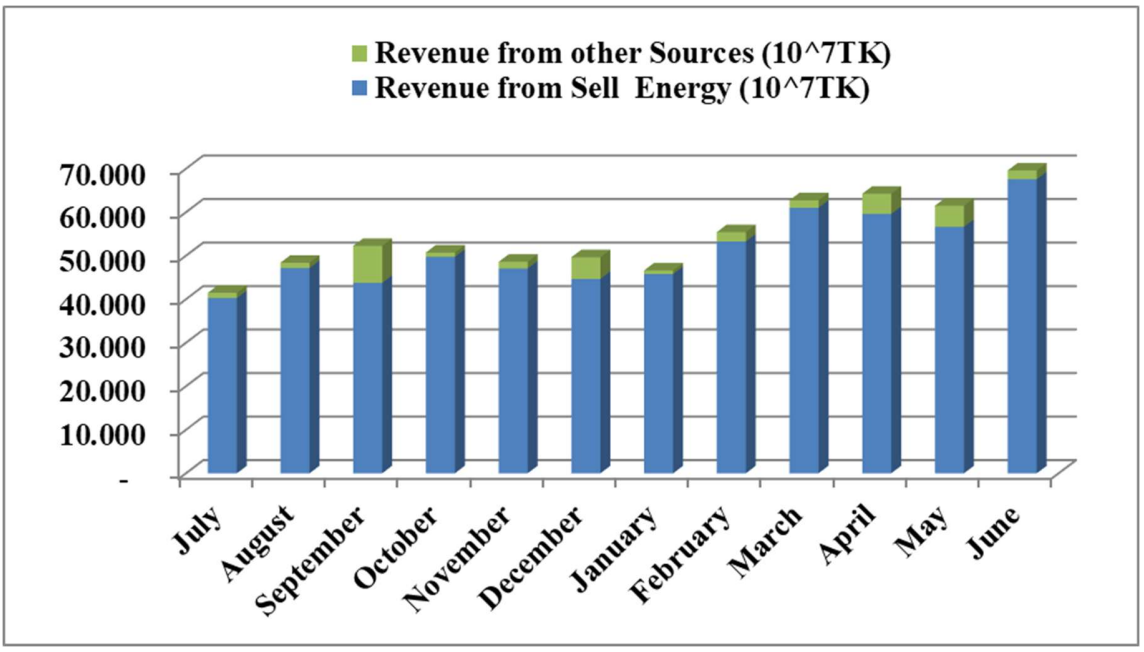


Fig 6.9: Monthly Total Revenue of NPBS-1 (10^7 Tk) (2017-18)

6.4.1.3 Other Operating Revenue

Late payment charge, miscellaneous service revenue, rent for electric property and other electric revenue are calculated as other operating revenue.

6.4.1.4 Non-operating Margins- Interest

Interest from bank deposit, interest from employee loans (Home loan) related with this part. PBS calculates this as revenue and employee have to pay about 10% interest on their home loan.

4.5 Total Supply Cost (TC)

From purchase to supply electric energy to the consumers, total cost is said to be the Total Supply Cost. This is the total operational expenses of a PBS. In 2015-16 fiscal years, NPBS showed about 575.851 crore taka as their total supply cost where energy purchase cost was 506.606 crore taka. In 2016-17 fiscal years, NPBS showed about 574.357 crore taka as their total supply cost where energy purchase cost was 505.472 crore taka. In 2017-18 fiscal years, NPBS showed about 639.259 crore taka as their total supply cost where energy purchase cost was 572.193 crore taka.

Total supply cost (TC) = Energy Purchase Cost+ System Loss (in Tk.) + Distribution cost (DC)

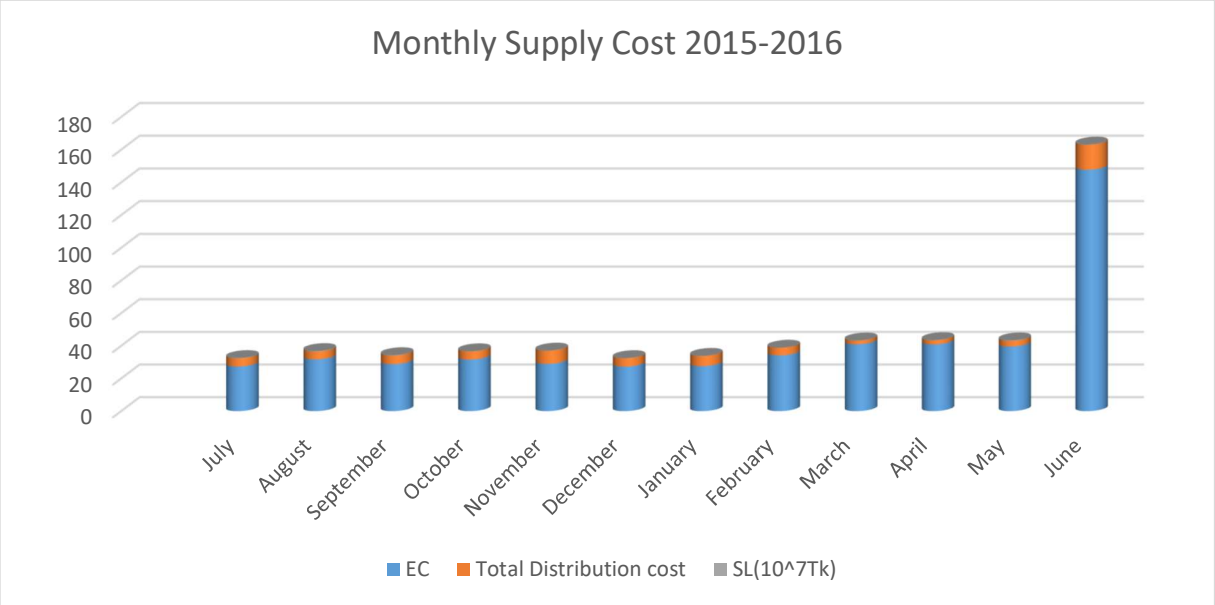


Fig 6.10: Monthly Total Supply Cost of NPBS-1 (2015-16)

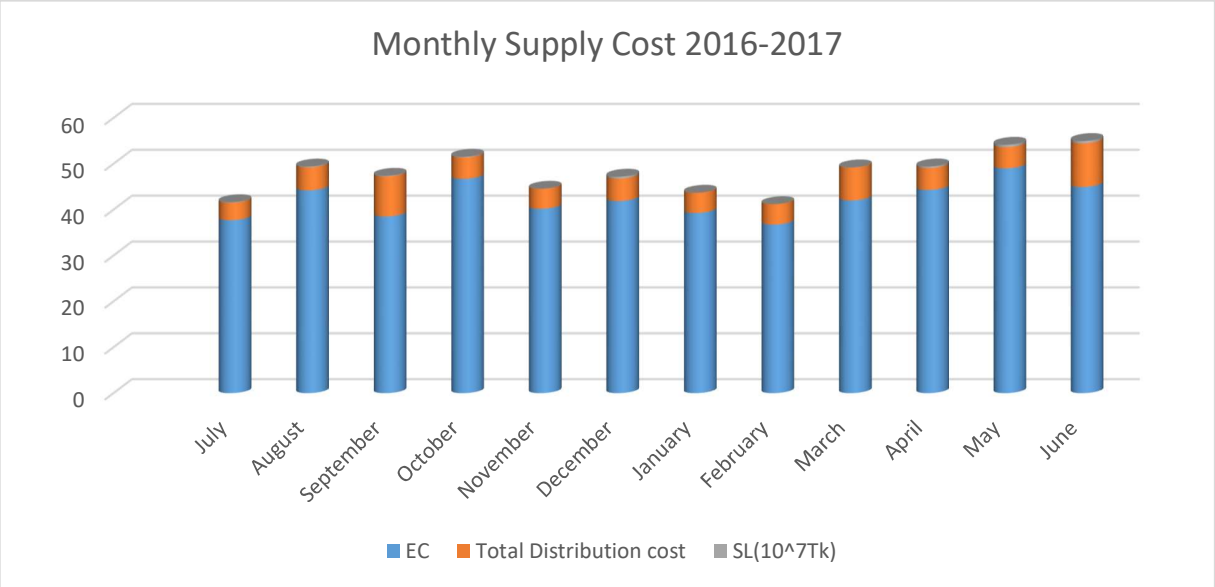


Fig 6.11: Monthly Total Supply Cost of NPBS-1 (2016-17)

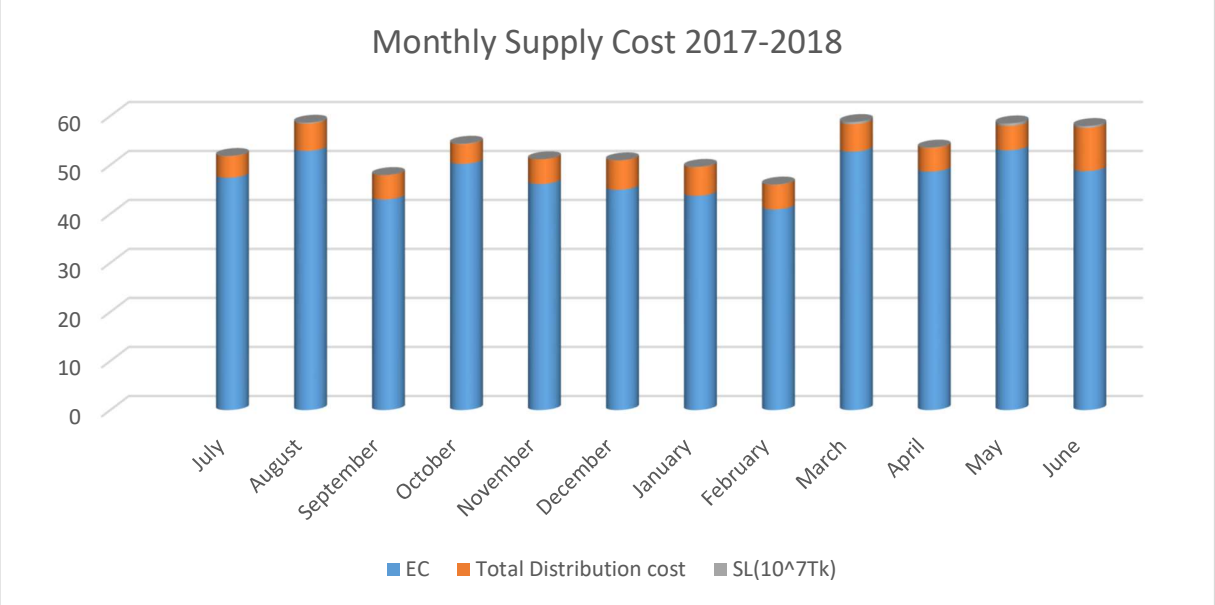


Fig 6.12: Monthly Total Supply Cost of NPBS-1 (2017-18)

6.6 Surplus

Surplus defines the profit or loss of a PBS. It‟s also known as operating margin.

Surplus = Total Revenue- Total Supply Cost

As we see in Fig 6.13 surplus of Narayanganj PBS is in negative position due to high distribution expenses and system loss. In Fig 6.13 Supply cost was abnormally high in June from total revenue. So it is negative value.

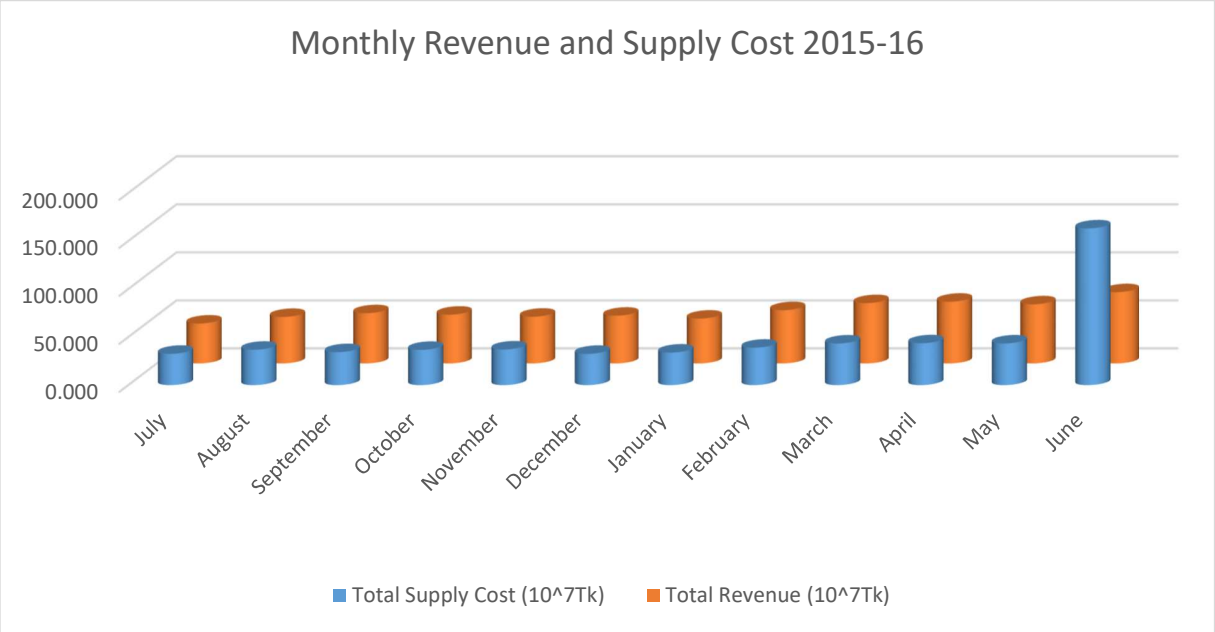


Fig 6.13: Monthly Revenue with Supply cost of NPBS-1 (2015-16)

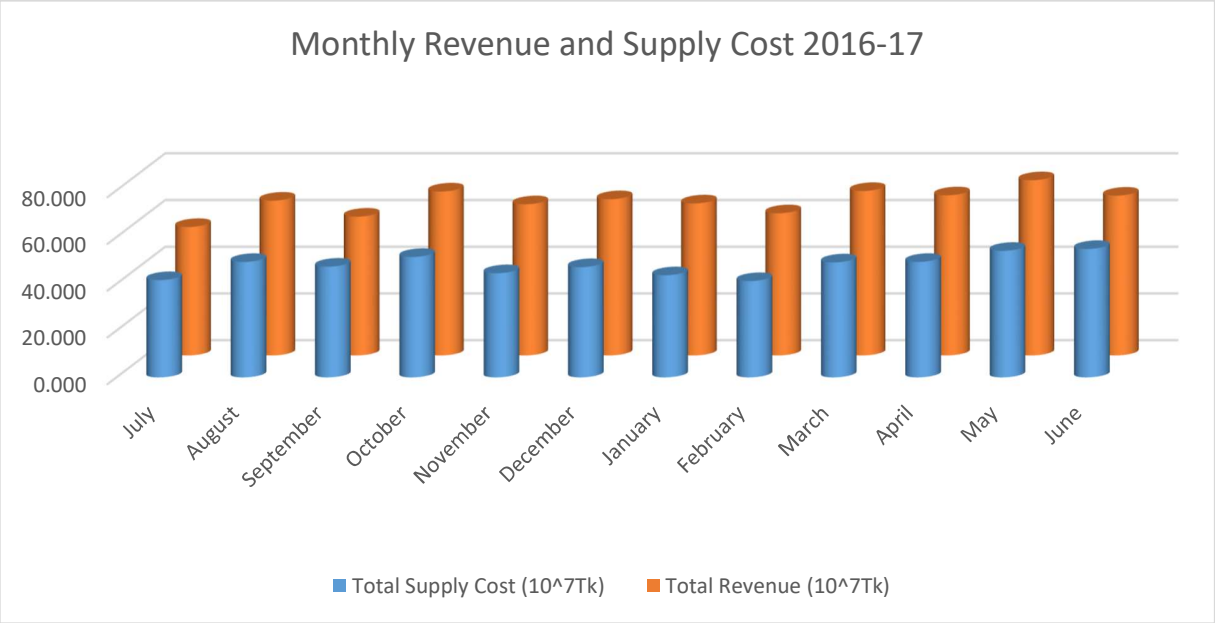


Fig 6.14: Monthly Revenue with Supply cost of NPBS-1 (2016-17)

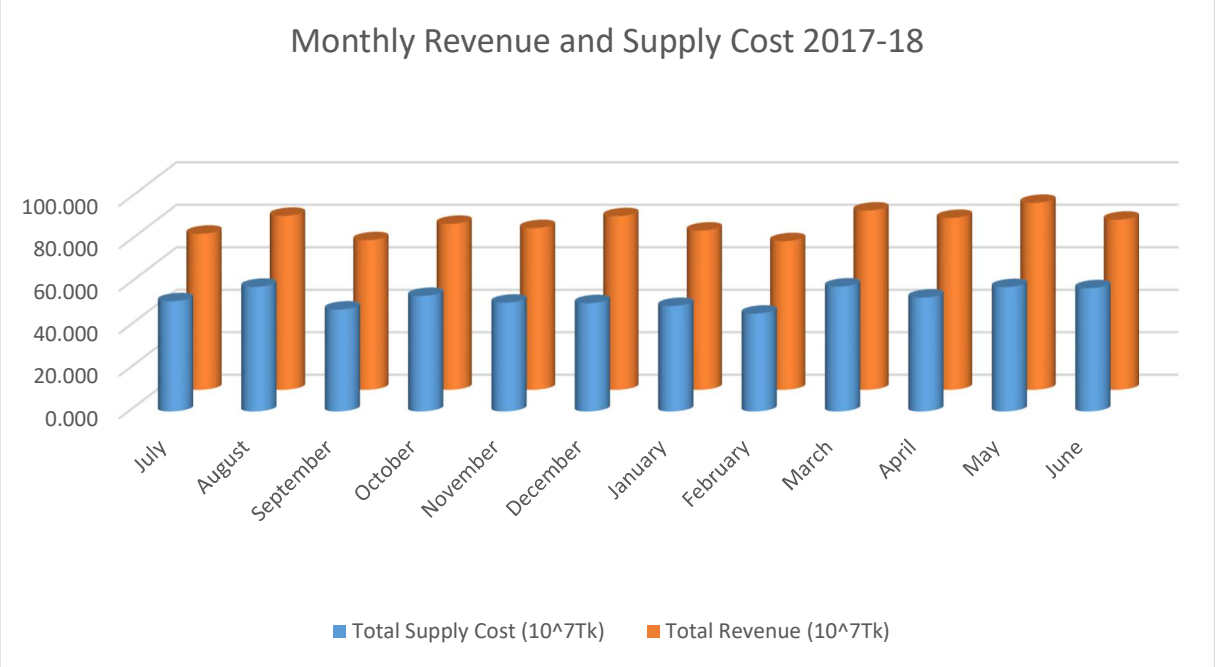


Fig 6.15: Monthly Revenue with Supply cost of NPBS-1 (2017-18)

6.7 Per Unit Cost Calculation

Per unit cost calculated to find cost or revenue of one unit energy that's why we assume profit and loss in short. Here we listed some per unit calculation for NPBS-1.

6.7.1 Distribution Cost (Tk/Unit)

In July, 2015-16 NPBS-1 had 575.851 crore taka Total Supply Cost, 506.606 crore taka Energy Purchase Cost and Energy sell is 1198.084 MU. So the Distribution cost (Tk/Unit) of July, 2015-16

Distribution Cost (Tk/Unit) = ((Total Supply Cost - Energy Purchase Cost) / Energy Sell)*10

= ((575.851– 506.606) / 1198.084) * 10

= 0.578 Tk / Unit

6.7.2 Revenue (Tk/Unit)

In July, 2015 NPBS-1 had 41.4876 crore taka Total Revenue and import 67.42 MU energy. So Revenue on July, 2015 was,

Revenue (Tk/Unit) = (Total Revenue / Energy Import)*10

= (41.4876 / 67.42) * 10

= **6.154** Tk / Unit

6.7.3 System Loss Tk/Unit (SL)

System loss (Tk/Unit) is calculated the price of each unit in system loss.

In July, 2015 NPBS-1 had purchased 67.42 MU with 27.3841 crore taka and Energy sell is 61.80 MU. So the system loss (Tk/Unit) of July, 2015 is

System loss (Tk/Unit)= ((Purchase cost/Sell Energy)-(Purchase cost/Import Energy))*10

$$= \left(\frac{27.3841 \text{ crore}}{61.80 \text{ MKwh}} - \frac{27.3841 \text{ crore}}{67.42 \text{ MKwh}} \right) * 10$$

= **0.369** Tk / Unit

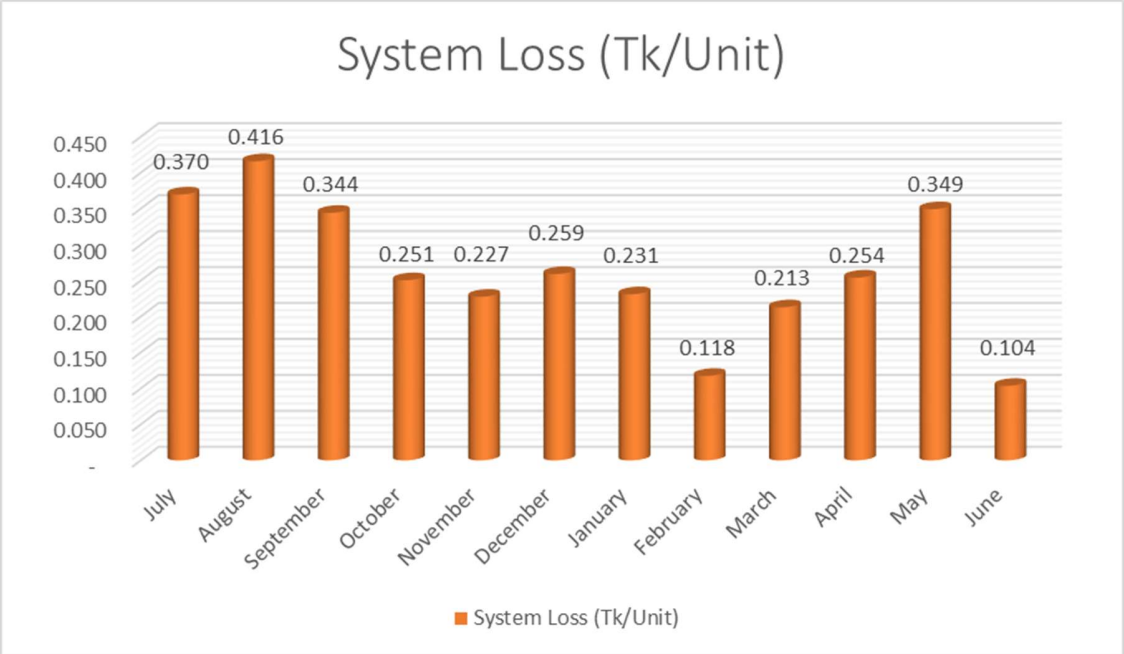


Fig 6.16: Month wise System loss (Tk/Unit), 2015-16 of NPBS-1

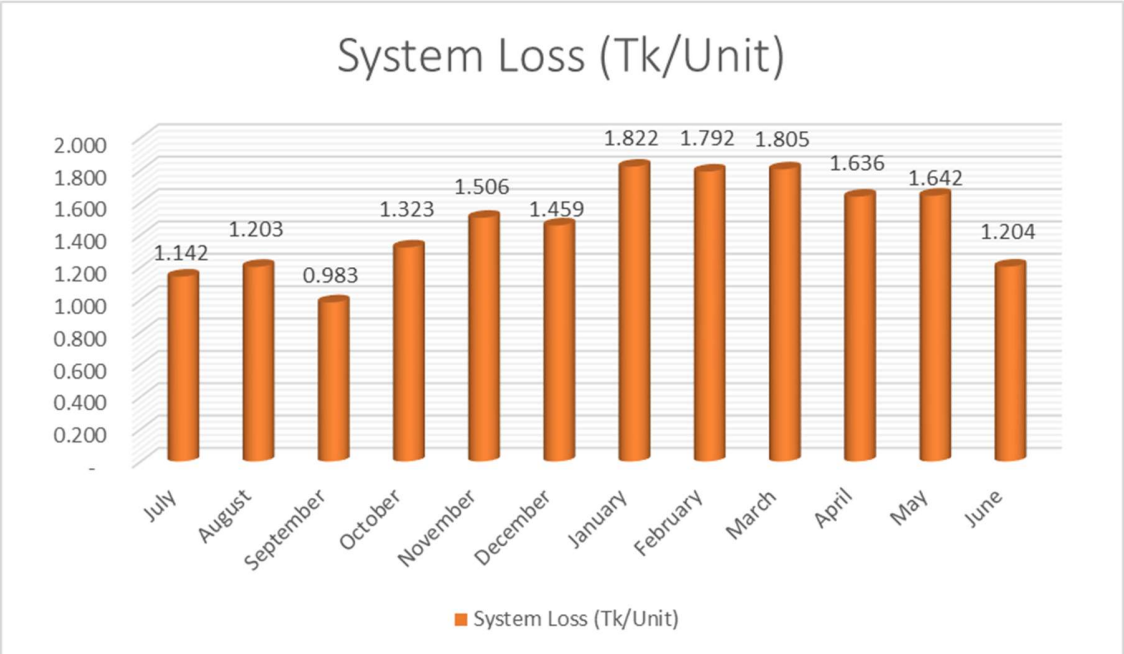


Fig 6.17: Month wise System loss (Tk/Unit), 2016-17 of NPBS-1

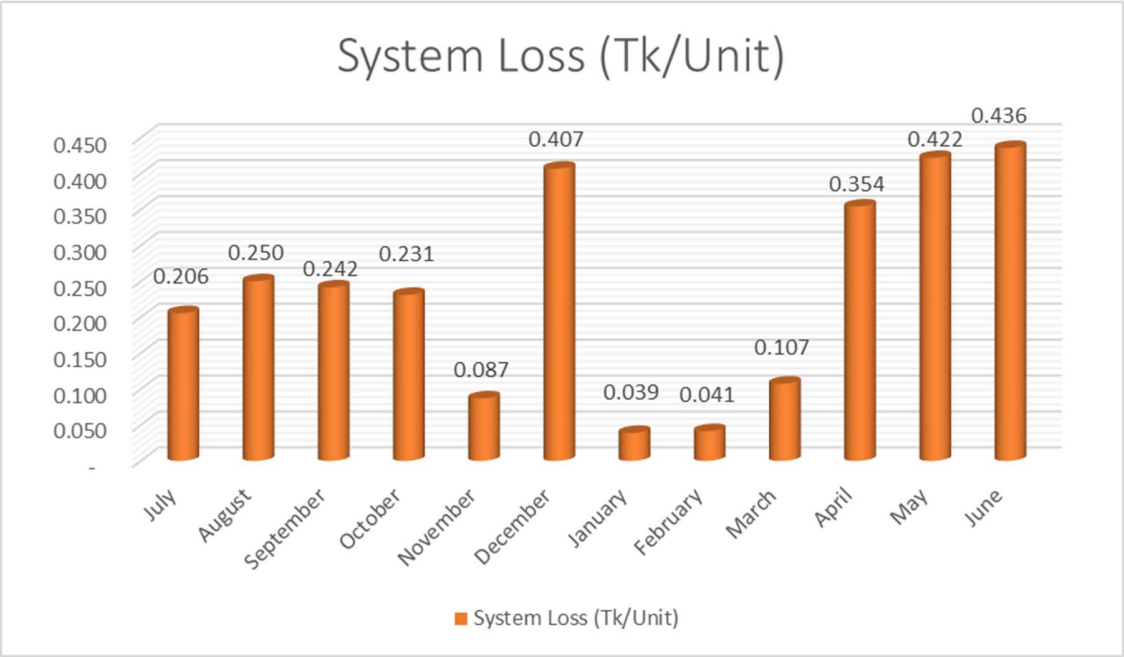


Fig 6.18: Month wise System loss (Tk/Unit), 2017-18 of NPBS-1

6.8 Tariff Rate

This is for information of all concerned that in accordance with the BERC Order Dated: 27 August 2015, the new tariff rates with respect to retail sales of electricity of Bangladesh Rural Electrification (BREB) has been made effective bill from month September 2015 shown in Table 6.7. In this table, it's also shown rate and slabs change since December, 2009.

Table 6.7: Tariff Rates Since 2009 to 2018

Consumer class	Slab	Before Dec, 11	01 Feb, 12	01 Mar, 12	Slab	01 Sep, 12	Slab	01 Mar, 14	01 Sep, 15	Slab	01 Oct, 15
Domestic	Min	0	0	0	Min	0	Min	0	0	Min	0
	00-100	2.77-3.78	2.9-3.34	3.08-3.55	0-75	3.36-3.87	0-50	3.74	3.62	0-50	3.62
	101-300	3.25-3.73	3.45-3.95	3.67-4.20	76-200	4.05-4.63	0-75	3.87	3.87	0-75	3.8
	301-500	5.21-5.54	5.63-5.98	5.98-6.35	201-300	4.18-4.79	76-200	5.01	5.01	76-200	5.14
	500++	6.87-8.18	7.42-8.83	7.88-9.38	301-400	6.88-7.30	201-300	5.19	5.19	201-300	5.36
					401-600	7.18-7.62	301-400	5.42	5.42	301-400	5.63
					600++	9.38	401-600	8.51	8.51	401-600	8.7
							600++	9.93	9.93	600++	9.98
Commercial	Flat	6.8	7.33	7.79	Flat	9	Flat	9.58	9.8		9.8
	Off Peak	5.23	5.88	6.25	Off Peak	7.22	Off Peak	8.16	8.16		
	Peak	9.31	9.66	10.26	Peak	11.85	Peak	11.85	11.85		
Charitable		3.45-3.52	3.62-3.70	3.85-3.93		4.45-4.54		4.98	4.98		5.22
Irrigation		2.73-2.20	2.87-3.36	3.05-3.57		3.39-3.96		3.39-3.96	3.39-3.96		3.82
General Power	Flat	5.27	5.67	6.02	Flat	6.95	Flat	7.42	7.42		7.66
	Off Peak	4.41	4.86	5.16	Off Peak	5.96	Off Peak	6.64	6.64		
	Peak	4.41	6.9	7.33	Peak	8.47	Peak	9	9		
Large Power	Flat	5.14	5.55	5.9	Flat	6.81	Flat	7.32	7.32		7.57
	Off Peak	4.4	4.86	5.16	Off Peak	5.96	Off Peak	6.62	6.62		
	Peak	7.55	7.6	8.08	Peak	9.33	Peak	9.33	9.33		
33 KV	Flat	4.88	5.28	5.61	Flat	6.48	Flat	7.2	7.2		7.49
	Off Peak	4.3	4.78	5.08	Off Peak	5.87	Off Peak	6.55	6.55		
	Peak	7.34	7.44	7.91	Peak	9.14	Peak	9.28	9.28		
Street Light		4.9	5.28	5.61		6.48		6.93	6.93		7.17

6.9 Bill Explanation

- **What all utility bills should contain?**

Bills–for electricity–should always be dated and contain the following information (Usually on the first page of the bill) –

- Your Name and Address.
- Your customer account or reference number (Always quote this when you contact your supplier).
- The name of your supplier and its contact details.
- How much you need to pay (Including any money owed from previous bills) and when you need to pay by.

➢ **More Detailed Information -**

The following more detailed information about the amount of energy you've used is often found on a separate page of the bill–

- Billing Period – The period in which you used the energy you're being charged for.
- Meter Readings– Difference between the previous and latest reading is the amount of energy (Measured in Kilo watt Hours or KWh) you've used.
- The amount your supplier is charging you for each KWh of electricity. If you pay a standing charge (Which covers things like meter readings and the cost of keeping you connected to the network) you'll pay a single rate; if not then you will pay a higher price for a given number of units and then a lower rate thereafter.
- Meter Number– If your supplier has changed your meter during the billing period you'll see readings for two different meter numbers.

6.10 Summary

In this chapter, electricity rate, revenue and expenses or cost of NPBS-1 are calculated according to the thesis formula. System loss calculated in taka. System loss, Distribution cost and Total Revenue calculated month wise in per unit. NPBS-1 find in massive loss.

CHAPTER 7

CONCLUSION

7.1 Conclusions

Electricity distribution cost is important issue in our country. Because electricity tariff rate and distribution cost are related with our economic growth. When electricity tariff rate becomes high then poor people of our country suffers a lot. By thinking about them, electricity tariff rate of our country should be low.

Government has given highest priority to power development in Bangladesh and is committed to generating electricity will sufficient for all citizens by 2021. Our government should take step for improvement our power station. In our power station, generators efficiency rate is low. It should be increased to a high value by taking necessary steps.

7.2 Limitations

There are few limitations I have faced are mentioned below-

- In this study the data of NPBS-1 I have used, collected from BREB (Bangladesh Rural Electrification Board) and NPBS-1 but I think some of these data are assumption.
- The distribution cost of NPBS-1 I have calculated are almost the same as that given by BERC. The slight difference of cost caused by the data that are assumption.
- In this thesis, I have discussed about electricity distribution structure and calculated the distribution cost but the tariff rate of electric power depends on generating, transmission, distribution cost. To calculate the tariff rate of electric power, transmission and distribution cost needs to be calculated along with the generation and transmission cost.

7.3 Future Outline

Usually, Tariff rate of electrical power depends on transmission and distribution cost. If electricity supply costs are high then electrical tariff rate will high and committed negative result. In this paper, we discussed about Distribution cost of a PBS, how to calculate, with example. I also discussed about important terms. Interested people can study to calculate the Distribution cost and electricity tariff. This paper will also be helpful to get knowledge a stable electricity distribution structure to meet the future electricity crisis of Bangladesh.

REFERENCES

1. Power sector reform in Bangladesh: Electricity distribution system M.S. Alam , E. Kabir b , M.M. Rahman , M.A.K. Chowdhury

2.How much do electricity tariff increases in Ukraine hurt the poor? Boris Dodonova,*, Petra Opitzb , Wolfgang Pfaffenbergerc

3.Coordinated Charging of Plug-In Hybrid Electric Vehicles to Minimize Distribution System Losses. Eric Sortomme, Student Member, IEEE, Mohammad M. Hindi, Student Member, IEEE, S. D. James MacPherson, Student Member, IEEE, and S. S. Venkata, Life Fellow, IEEE

4. RURAL ENERGY IN DEVELOPING COUNTRIES: A Challenge for Economic Development. Douglas F. Barnes and Willem M. Floor

5.Yigzaw G. Yohanis ,Jayanta D. Mondol , Alan Wright , Brian Norton, Real-life energy use in the UK: How occupancy and dwelling characteristics affect domestic electricity use, Energy and Buildings, Vol. 40, 2008, pp. 1053–1059

6. "Power Sector Review of Bangladesh, Keeping pace with the growth of economy." EBL Securities Limited

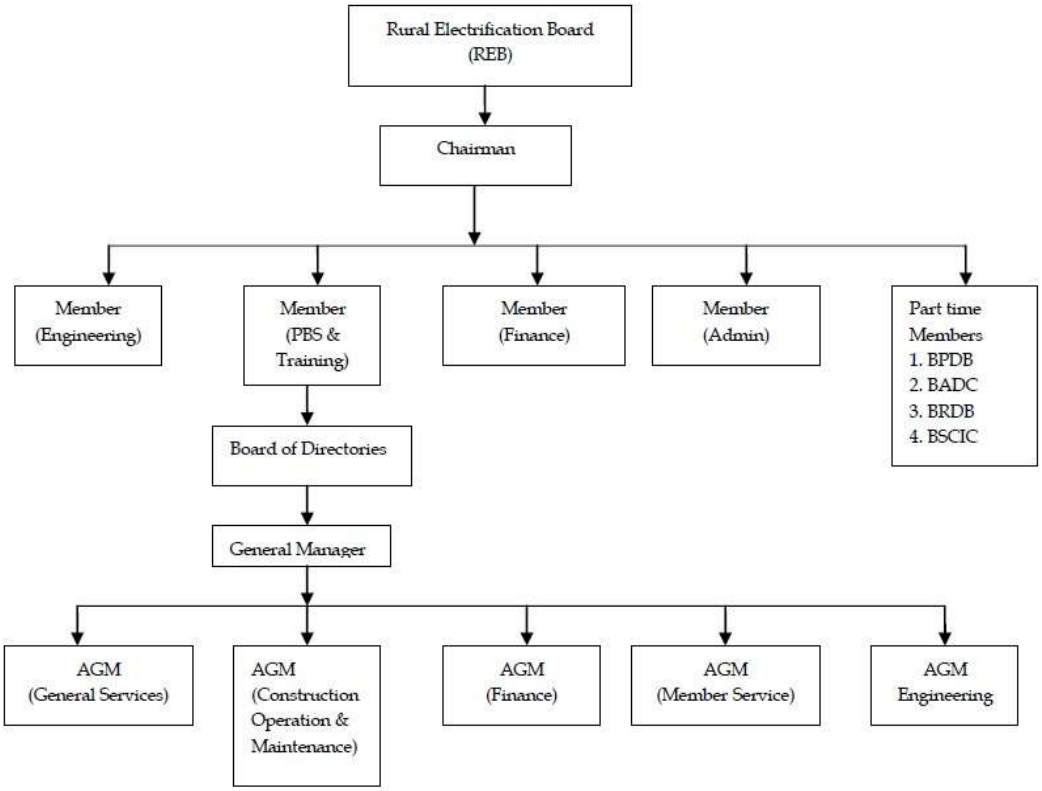
7. "Reactive Power Pricing and Management." Shangyou Hao Alex Papalexopoulos. Pacfic Gas and Electric Company San Francisco, California.Jonas Tembe, "Rural electrification in an imperfect world: A case study from Mozambique",*Department of Spatial Economics, VU University Amsterdam, De Boelelaan 1105*, 1081 HV Amsterdam, The Netherlands, 2008.

8. G.A.Putnus ,P.Suwanaping-carl,D.Johnston,E.C.Benttey,M.Narayana "Sc-Propulsion powers MINIE"[published in 2009]

9. R.Srinivasa –Rao,K.Ravindra,K.Satish,S.V.L.Narasimsam "distribution feeder reconfiguration for loss reduction"[July 1988]

10. Michael Caramanis,Justin,M.foster [published in 2009]

APPENDIX - A
Organization and Function of BREB



After starting functioning REB has gone to a lot of changes. But to ensure a proper function a board was crated. It consists of a Chairman, four full time members and four part time members. Also to ensure direct participation of the beneficiaries, each project area should form an electric cooperative, called a Palli Bidyut Samity (PBS).These PBSs consists of several members. But PBS is directed by a member of REB.A organization chart of REB is given above.

APPENDIX - B

Formula According to Thesis

Total revenue = Revenue from sales of energy + Revenue from other sources

Revenue from others = Other Operating Revenue + Non-operating Margins-interest+ Non-operating Margins-Others

Distribution cost = Operation & Maintenance Expenses + Consumer Selling Expenses + Administration &General Expenses + Depreciation& Amortization

+Tax Expenses+ Interest Expenses

Total supply cost = Energy Purchase Cost+ System Loss + Distribution Cost

System Loss (Tk) = Import Energy×System Loss (Tk/Unit)

Surplus (Tk) =Total Revenue _Total Supply Cost

Energy Purchase Cost=Energy×Rate

$$\text{System loss (Tk/Unit)} = \left(\frac{\text{Purchase cost}}{\text{Sell Energy}} - \frac{\text{Purchase cost}}{\text{Import Energy}}\right) \times 10$$

$$\text{System Loss \%} = \frac{\text{Energy Import} - \text{Energy Sell}}{\text{Energy Import}} \times 100$$

$$\text{Distribution Cost (Tk/Unit)} = \frac{\text{Total Supply Cost} - \text{Energy Purchase Cost}}{\text{Energy Sell}} \times 10$$

$$\text{Total Revenue (Tk/Unit)} = \frac{\text{Revenue from other sources}}{\text{Energy Import}} \times 10$$

$$\text{Load Factor} = \frac{\text{Total Unit kWh(Purchase)}}{(\text{Total Peak demand} \times 1000 \times 24 \times 30)} \times 100$$

$$\text{KWh (Purchase) \%} = \frac{\text{Reference grid unit KWh}}{\text{Total Unit KWh purchase}} \times 100$$

$$\text{Increment \%} = \frac{\text{Present value} - \text{Past value}}{\text{Past value}} \times 100$$

Grand Total = Sum of all related values

APPENDIX – C

As per Sub-station Meter Data with Load Factor (2015-16) of NPBS-1

Import point	September'15				October'15			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW
Sonargaon	4,548,000			9.8	4,506,000			9
Meghnaghat-1	2,533,000			7	2,867,000			6.8
Meghnaghat-2	1,980,000			5.7	2,340,000			5.7
Ananda Baza	2,612,976			6	2,208,096			5.5
Head Office	4,490,500			9.5	4,905,000			9
Noyapur	2,485,000			6.2	2,653,000			6
Modingonj-1	2,766,870			7	2,760,390			8
Modingonj-2	4,277,250			6.5	4,162,680			8
Modingonj-Dasergao	4,421,520			9.5	4,318,380			9
Tarabo-1	5,761,251			12	6,391,000			12
Tarabo-2	4,144,500			9.5	4,116,000			8.8
Borpa	3,373,481	65,685,192	6.74	7.4	4,158,000	73,655,469	4.80	7.75
Horipur GIS	5,012,000			11	5,623,000			11
BSIC Kanchpur	4,658,500			9	4,886,750			8.7
Bhulta-Kanchan	993,135			5	649,000			1.2
Bhulta-REB Ring-2	3,561,250			11	5,032,500			11
Horipur-Meghnaghat	3,388,000			8	3,767,500			7.8
Horipur-Narsingdi	1,940,125			5	2,281,125			5
Horipur-Kanchan	2,259,875			5	3,142,180			7
Horipur-Demra	563,750			1.1	695,750			1.1
Horipur-Rohim steel	515,670			5	263,180			4
Sonargaon-Meghnag	3,985,993			11	5,453,749			10
Sonarhaon-Narsingdi	129,250			0.5	148,500			0.4
Horipur-PGCBL	28,150			0.12	39,340			0.1
Total	**70,430,046**			167.82	**77,368,120**			162.85

Import point	November'15				December'15			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	3,240,000			8.75	2,929,000			8.2
Meghnaghat-1	1,563,000			5.2	1,643,000			5
Meghnaghat-2	2,574,000			5.7	2,448,000			5.2
Ananda Baza	1,605,000			5	1,512,000			4.5
Head Office	4,078,500			8.75	3,939,000			8.7
Noyapur	2,124,000			5.9	1,783,238			5.8
Modingonj-1	1,980,630			4.5	1,627,290			4.5
Modingonj-2	2,918,790			8	2,645,370			7.5
Modingonj-Dasergao	3,746,340			9	2,835,000			9
Tarabo-1	5,405,510			10.9	5,214,000			10.6
Tarabo-2	3,998,500			9.2	4,392,000			7.5
Borpa	4,499,000			7.5	3,481,500			7.5
Horipur GIS	5,619,000	68,137,084	5.03	11	4,414,000	63,597,366	5.68	11
BSIC Kanchpur	3,858,250			8.5	4,045,250			8.3
Bhulta-Kanchan	992,750			1.2	792,000			1.3
Bhulta-REB Ring-2	4,855,125			12	5,938,625			13
Horipur-Meghnaghat	3,762,000			7.8	4,070,000			7.7
Horipur-Narsingdi	2,303,125			5	2,151,875			5.1
Horipur-Kanchan	4,861,695			7	4,768,750			7
Horipur-Demra	638,000			1.1	662,750			1
Horipur-Rohim steel	224,865			4	290,440			4.5
Sonargaon-Meghnag	6,197,125			10	5,322,625			9
Sonarhaon-Narsingdi	156,750			0.4	101,750			0.4
Horipur-PGCBL	30,340			0.1	26,320			0.1
Horipur-Sonargaon-1	513,343			1.5	395,763			1.75
Total	**71,745,638**			158	**67,429,546**			154.15

Import point	January,16				February,16			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	3,158,000			6.9	3,295,000			8.4
Meghnaghat-1	1,451,000			4.5	1,881,000			5.2
Meghnaghat-2	2,682,000			5.99	2,538,000			5.95
Ananda Baza	1,591,000			3.5	1,945,000			4.9
Head Office	4,153,000			9.05	3,963,500			9.1
Noyapur	2,064,000			5.9	2,288,000			5.4
Modingonj-1	1,513,260			6.8	1,710,000			4
Modingonj-2	2,655,990			7.3	2,706,120			7.5
Modingonj-Dasergao	2,866,500			8.3	3,061,260			8.3
Tarabo-1	5,071,000			10.9	5,219,500			11.66
Tarabo-2	4,222,500			8.2	4,010,000			9.2
Borpa	3,261,968			7.7	2,867,040			7.6
Horipur GIS	5,225,000			10.8	4,935,000			10.53
BSIC Kanchpur	3,349,500			8.5	3,421,000			8.3
Bhulta-Kanchan	739,750	65,292,526	4.03	1.25	635,250	82,616,695	1.08	1.46
Bhulta-REB Ring-2	5,816,250			12.8	4,743,750			12.5
Horipur-Meghnaghat	4,083,750			7.6	3,858,250			7.89
Horipur-Narsingdi	2,330,625			5.2	2,128,500			5.3
Horipur-Kanchan	2,942,273			7.2	2,674,158			7.2
Horipur-Demra	649,000			1.11	29,000			1.11
Horipur-Rohim steel	541,390			4.5	597,035			6.1
Sonargaon-Meghnag	7,059,250			8.5	8,555,250			8.5
Sonarhaon-Narsingdi	176,000			0.38	167,750			0.3
Horipur-PGCBL	24,730			0.1	26,140			0.1
Horipur-Sonargaon-1	405,616			1.81	155,829			1.8
BASIC Kannchpur	-			0	-			0
Nara PBS-2 HP GT-1	-			0	7,755,007			0
Nara PBS-2 SPPCL	-			0	8,350,783			0
Total	**68,033,352**			154.79	**83,517,122**			158.3

Import point	March,16				April,16			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	3,961,000			9.45	4,772,000			10.9
Meghnaghat-1	2,143,000			5.7	2,637,000			6.75
Meghnaghat-2	2,880,000			6.25	2,808,000			7.11
Ananda Baza	2,346,336			5.74	2,598,144			6
Head Office	4,344,538			9.81	4,849,833			10.3
Noyapur	2,555,000			5.85	3,090,000			6.6
Modingonj-1	2,409,480			5	3,261,960			9
Modingonj-2	3,720,330			9.5	3,851,280			6
Modingonj-Dasergao	3,763,800			11	4,056,300			9.5
Tarabo-1	6,380,000			12.35	6,567,000			10.8
Tarabo-2	4,805,500			9.68	4,973,000			9.7
Borpa	4,397,250			8.89	4,653,000			9.68
Horipur GIS	6,151,000			12.11	6,433,000			12.75
BSIC Kanchpur	4,837,250			9.44	3,803,250			9.57
Bhulta-Kanchan	574,750	97,597,770	4.90	2.63	572,000	96,838,053	4.57	2.76
Bhulta-REB Ring-2	5,502,750			12.5	5,398,250			12.5
Horipur-Meghnaghat	4,279,000			10	3,803,250			8.42
Horipur-Narsingdi	2,738,250			6.5	1,717,750			6.5
Horipur-Kanchan	3,981,875			7.2	3,867,725			7.2
Horipur-Demra	141,000			1.32	551,000			1.16
Horipur-Rohim steel	1,386,375			5.6	1,293,360			5.8
Sonargaon-Meghnag	8,470,963			12	5,440,875			12
Sonarhaon-Narsingdi	184,250			0.78	167,750			0.69
Horipur-PGCBL	30,060			0.11	33,630			0.12
Horipur-Sonargaon-1	233,309			2	49,350			2
BASIC Kannchpur	-			0	-			0
Nara PBS-2 HP GT-1	9,985,876			0	9,777,349			0
Nara PBS-2 SPPCL	10,425,000			0	10,446,000			0
Total	**102,627,942**			181.41	**101,472,056**			183.81

Import point	May,16				June,16			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	4,620,000			10.35	5,276,000			10.85
Meghnaghat-1	2,618,000			6.5	2,989,000			6.4
Meghnaghat-2	2,376,000			5.9	2,430,000			5.9
Ananda Baza	2,219,000			5.3	2,980,000			6
Head Office	4,406,431			9.5	5,117,957			9.98
Noyapur	2,660,000			6.2	3,130,000			5.9
Modingonj-1	4,564,620			9.5	5,195,520			9.5
Modingonj-2	2,268,000			5.5	2,739,240			5.5
Modingonj-Dasergao	4,947,300			8.5	5,223,780			10.9
Tarabo-1	6,633,000			11.5	7,518,500			12.25
Tarabo-2	4,779,000			9.88	4,544,000			9.6
Borpa	4,822,125			9.68	4,826,250			9.68
Horipur GIS	6,188,000			12.5	6,809,000			13.68
BSIC Kanchpur	4,446,750			8.6	4,774,000			8.7
Bhulta-Kanchan	610,500	90,996,836	7.81	2.2	594,000	360,151,697	(28.28)	2.2
Bhulta-REB Ring-2	5,334,072			12.5	6,219,125			12.5
Horipur-Meghnaghat	3,836,250			8	3,883,000			8.6
Horipur-Narsingdi	2,288,000			6.2	2,262,563			6.2
Horipur-Kanchan	3,986,580			7.2	4,168,493			7.4
Horipur-Demra	648,000			1.25	294,250			1.2
Horipur-Rohim steel	1,241,850			4.5	842,630			2.34
Sonargaon-Meghnag	5,794,250			11.7	7,331,500			12.2
Sonarhaon-Narsingdi	291,500			2	1,193,445			5.4
Horipur-PGCBL	34,900			0.12	34,550			0.12
Horipur-Sonargaon-1	-			0	-			0
BASIC Kannchpur	-			0	-			0
Nara PBS-2 HP GT-1	9,313,600			0	128,408,794			0
Nara PBS-2 SPPCL	7,775,000			0	61,962,839			0
Total	**98,702,728**			175.08	**280,748,436**			183

Import point	July'15					August'15			
	Unit kWh(Purchase)		Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	4,455,000	6.63			11.5	5,315,000			10
Meghnaghat-1	2,696,000	4.01			7	2,286,000			7
Meghnaghat-2	1,548,000	2.30			6	2,448,000			5.5
Ananda Baza	2,357,616	3.51			4.5	2,715,504			6
Head Office	4,011,000	5.97			8.5	4,637,500			8.5
Noyapur	2,679,000	3.99			6.2	2,834,000			6.2
Modingonj-1	2,705,670	4.03			8	2,813,130			7
Modingonj-2	4,314,060	6.42			6.5	4,429,440			6.5
Modingonj-Dasergao	4,093,560	6.09			8.5	4,438,620			7.8
Tarabo-1	5,362,500	7.98			12	6,561,500			11.5
Tarabo-2	3,593,500	5.35			9	4,233,392			9
Borpa	3,027,750	4.51			8	4,287,745			7.8
Horipur GIS	5,081,000	7.56	61,798,100	8.04	12	5,603,000	71,717,178	9.12	11.5
BSIC Kanchpur	4,281,750	6.37			9.5	5,445,000			9
Bhulta-Kanchan	396,000	0.59			0.75	1,182,665			3.75
Bhulta-REB Ring-2	3,513,565	5.23			11	4,672,250			11
Horipur-Meghnaghat	3,267,000	4.86			8	3,990,250			8.2
Horipur-Narsingdi	1,960,310	2.92			6.5	2,184,875			6.5
Horipur-Kanchan	2,322,405	3.46			5.8	2,705,170			4.4
Horipur-Demra	544,500	0.81			1	695,750			1.1
Horipur-Rohim steel	494,205	0.74			5	855,990			5
Sonargaon-Meghnag	3,935,250	5.86			11	4,248,695			11
Sonarhaon-Narsingdi	541,750	0.81			2.5	203,500			0.3
Horipur-PGCBL	19,310	0.03			0.11	28,880			0.11
Horipur-Sonargaon-1	-	0.00			0	97,059			0.15
Total	**67,200,701**	**100**			168.86	**78,912,915**			**164.81**

As per Sub-station Meter Data with Load Factor (2016-17) of NPBS-1

Import point	July'16				August'16			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	5,132,000			10	5,175,000			10.25
Meghnaghat-1	2,847,000			6.45	2,845,000			6.5
Meghnaghat-2	1,350,000			5.18	2,232,000			6.05
Ananda Baza	2,711,000			6	2,721,000			6.55
Head Office	4,704,614			10	5,009,588			10.7
Noyapur	3,063,000			5.7	3,511,000			6.4
Modingonj-1	5,028,570			9	5,179,680			10
Modingonj-2	2,747,070			5	2,779,200			5.5
Modingonj-Dasergao	4,788,900			12	5,454,900			10
Tarabo-1	5,813,720			12.8	7,513,000			12.8
Tarabo-2	4,293,500			9.45	5,112,500			9.7
Borpa	4,477,399			9.6	5,494,500			9.75
Horipur GIS	6,116,000			12.6	6,933,000			13.68
BSIC Kanchpur	3,951,750			8.7	4,952,750			10.3
Bhulta-Kanchan	360,250			2.79	1,001,000			2.2
Bhulta-REB Ring-2	4,035,625			12.5	5,340,500			12.5
Horipur-Meghnaghat	1,347,500			2.75	1,245,750			2.5
Horipur-Narsingdi	1,253,148			6	1,388,021			4
Horipur-Kanchan	3,320,818	90,269,245	4.74	7	4,595,724	103,964,318	5.76	7
Horipur-Demra	198,000			0.55	434,500			1.15
Horipur-Rohim steel	479,463			2.35	494,708			2.35
Sonargaon-Meghnagh	4,521,000			12	5,431,250			12
Sonarhaon-Narsingdi	699,875			2.25	1,197,625			2.75
Horipur-PGCBL	33,720			0.12	38,810			0.12
Horipur-Sonargaon-1	2,596,000			5.65	2,934,250			7.4
BASIC Kannchpur	639,375			3	1,241,625			3.58
Nara PBS-2 HP GT-1	7,530,125			0	10,731,127			0
Nara PBS-2 SPPCL	10,136,510			0	8,439,750			0
Head Quarte Express	580,250			3.26	869,000			3.16
Narayanganj	-			0	17,700			0
Everest PGCL(33kv)	-			0	-			0
Ananda Baza(Othe)	-			0	-			0
Abdul Monem Ltd.	-			0	-			0
Kabilgonj SS	-			0	-			0
Akhalia SS	-			0	-			0
Horipur-Sonargaon-2	-			0	-			0
Total	**94,756,182**			182.7	**110,314,458**			**188.89**

Import point	September'16				October'16			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	5,077,000			11.25	4,910,000			10.5
Meghnaghat-1	2,931,000			6.53	3,326,000			6.9
Meghnaghat-2	1,620,000			6.12	2,214,000			6.08
Ananda Baza	3,129,000			6.45	2,987,000			7.05
Head Office	4,650,393			10.4	5,193,674			10.6
Noyapur	3,151,000			6.2	3,461,000			6.5
Modingonj-1	5,012,820			10	5,262,660			10.5
Modingonj-2	2,800,530			5.5	2,762,190			6
Modingonj-Dasergao	5,446,080			11	5,118,120			13
Tarabo-1	6,704,500			13.4	7,843,000			12.35
Tarabo-2	4,120,500			10.1	5,198,000			9.6
Borpa	3,959,918			9.5	5,082,000			10.08
Horipur GIS	5,944,000			13.95	7,258,000			13.5
BSIC Kanchpur	4,207,500			10.2	4,664,000			10.3
Bhulta-Kanchan	943,250			3.9	2,442,000			4.8
Bhulta-REB Ring-2	3,551,625			12.5	4,890,875			12.5
Horipur-Meghnaghat	2,131,250			3.68	3,053,875			4.25
Horipur-Narsingdi	1,108,250			4	946,000			3.6
Horipur-Kanchan	3,200,230	91,002,358	5.31	7	5,053,255	111,165,295	5.36	9.8
Horipur-Demra	511,500			1.16	750,750			1.3
Horipur-Rohim steel	201,875			2.44	125,305			2.2
Sonargaon-Meghnagh	3,586,000			12	5,924,875			12
Sonarhaon-Narsingdi	85,250			0.75	598,125			2.6
Horipur-PGCBL	31,780			0.12	36,670			0.12
Horipur-Sonargaon-1	2,521,750			8	2,967,250			8.5
BASIC Kannchpur	1,744,875			4	1,827,375			3.82
Nara PBS-2 HP GT-1	7,281,999			0	11,033,333			0
Nara PBS-2 SPPCL	9,714,796			0	11,251,000			0
Head Quarte Express	715,000			3.6	1,256,750			3.38
Narayanganj	20,302			0	19,949			0
Everest PGCL(33kv)	-			0	-			0
Ananda Baza(Othe)	-			0	-			0
Abdul Monem Ltd.	-			0	-			0
Kabilgonj SS	-			0	-			0
Akhalia SS	-			0	-			0
Horipur-Sonargaon-2	-			0	-			0
Total	**96,103,973**			193.75	**117,457,031**			201.83

Import point	November'16				December'16			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	3,742,000			9.35	3,254,000			7.25
Meghnaghat-1	2,185,000			6.42	2,039,000			5.74
Meghnaghat-2	1,692,000			5.98	2,214,000			5.9
Ananda Baza	2,006,000			6.25	1,777,000			4.75
Head Office	4,154,596			10.3	4,044,391			9.48
Noyapur	2,540,000			6	2,316,000			4.37
Modingonj-1	4,991,580			8.5	3,712,230			6.5
Modingonj-2	409,860			5.5	1,038,780			3.5
Modingonj-Dasergao	3,419,460			8.5	3,940,740			9
Tarabo-1	6,704,500			12.8	6,303,000			12.32
Tarabo-2	4,176,500			7.5	4,275,000			6.67
Borpa	5,321,250			9.5	5,297,000			10.39
Horipur GIS	6,386,000			13.85	5,979,000			11.55
BSIC Kanchpur	3,542,000			10.15	3,305,500			8.2
Bhulta-Kanchan	2,387,000			5.21	2,428,250			5.6
Bhulta-REB Ring-2	6,315,375			15.23	6,220,500			14.95
Horipur-Meghnaghat	2,098,250			3.85	1,749,000			3.58
Horipur-Narsingdi	976,250	99,431,512	1.90	4.24	926,255	95,924,885	3.19	4.65
Horipur-Kanchan	3,983,890			11.69	3,376,205			12
Horipur-Demra	508,750			1.18	715,000			1.28
Horipur-Rohim steel	102,089			0.75	125,353			0.8
Sonargaon-Meghnagh	1,867,250			6.87	2,374,625			6.8
Sonarhaon-Narsingdi	1,280,125			2.63	1,347,500			2.65
Horipur-PGCBL	30,960			0.12	27,340			0.11
Horipur-Sonargaon-1	3,041,500			6.67	3,170,750			6.92
BASIC Kannchpur	2,029,500			3.82	1,699,500			3.8
Nara PBS-2 HP GT-1	9,829,893			0	9,579,629			0
Nara PBS-2 SPPCL	9,100,000			0	9,301,000			0
Head Quarte Express	910,250			3.63	1,174,250			3.5
Narayanganj	14,591			0	12,752			0
Everest PGCL(33kv)	5,610,000			14.5	5,360,600			13
Ananda Baza(Othe)	-			0	-			0
Abdul Monem Ltd.	-			0	-			0
Kabilgonj SS	-			0	-			0
Akhalia SS	-			0	-			0
Horipur-Sonargaon-2	-			0	-			0
Total	**101,356,419**			200.99	**99,084,150**			185.26

Import point	January,17				February,17			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	3,297,000			8	3,105,000			8.67
Meghnaghat-1	2,123,700			6.1	1,631,650			6.35
Meghnaghat-2	2,574,000			5.8	2,826,000			6.91
Ananda Baza	1,773,000			5.17	1,926,000			5.98
Head Office	4,190,701			9.85	3,791,952			9.35
Noyapur	2,464,000			5.67	2,676,000			4.98
Modingonj-1	3,106,440			6.29	2,998,260			7.5
Modingonj-2	1,564,470			4	1,532,700			3.5
Modingonj-Dasergao	4,345,920			9	3,907,080			9.5
Tarabo-1	6,121,500			12.45	5,462,500			13.21
Tarabo-2	4,086,500			7	3,733,500			7.76
Borpa	4,956,500			9.35	4,727,250			10.65
Horipur GIS	5,858,000			11.23	5,184,000			11.28
BSIC Kanchpur	3,550,250			8.5	3,008,500			8.49
Bhulta-Kanchan	2,444,750			5.65	2,268,750			5.5
Bhulta-REB Ring-2	6,396,500			14.65	5,966,125			14.2
Horipur-Meghnaghat	2,153,250			3.55	1,757,250			3.58
Horipur-Narsingdi	1,047,750	98,952,242	2.34	4.68	926,750	92,483,012	2.12	3.35
Horipur-Kanchan	5,239,040			12.45	5,072,375			13.59
Horipur-Demra	679,250			1.25	627,000			1.12
Horipur-Rohim steel	270,371			1.36	37,659			0.26
Sonargaon-Meghnagh	2,164,250			7.1	1,596,375			6.42
Sonarhaon-Narsingdi	1,390,125			2.6	1,126,675			2.56
Horipur-PGCBL	26,570			0.12	26,610			0.13
Horipur-Sonargaon-1	2,747,250			6.9	4,026,000			7.94
BASIC Kannchpur	2,095,500			3.67	1,691,250			2.98
Nara PBS-2 HP GT-1	9,265,118			0	8,841,645			0
Nara PBS-2 SPPCL	8,939,000			0	7,917,000			0
Head Quarte Express	1,399,750			3.45	1,229,250			3.59
Narayanganj	11,345			0	11,732			0
Everest PGCL(33kv)	5,041,000			12.74	4,114,000			13.1
Ananda Baza(Othe)	-			0	473,000			0
Abdul Monem Ltd.	-			0	270,319			2.25
Kabilgonj SS	-			0	-			1.1
Akhalia SS	-			0	-			0
Horipur-Sonargaon-2	-			0	-			0
Total	**101,322,800**			188.58	**94,490,157**			195.8

Import point	March,17				April,17			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	3,961,000			9.74	4,120,000			10.1
Meghnaghat-1	1,836,650			4.46	2,749,000			6.25
Meghnaghat-2	3,384,000			6.91	3,042,000			6.23
Ananda Baza	2,335,000			6.15	2,991,240			7.11
Head Office	4,808,242			10.72	4,871,901			12
Noyapur	3,074,000			7.22	3,133,000			7.98
Modingonj-1	3,638,610			8	4,297,770			9
Modingonj-2	1,914,840			5	2,363,310			6
Modingonj-Dasergao	4,184,460			10.1	5,321,340			8.5
Tarabo-1	6,533,500			14.45	6,924,500			15.21
Tarabo-2	4,274,000			8.58	4,515,500			9.11
Borpa	5,040,750			10.66	4,743,750			10.55
Horipur GIS	6,278,000			11.75	6,832,000			13.25
BSIC Kanchpur	4,235,000			9.37	4,683,250			10.94
Bhulta-Kanchan	2,414,500			5.28	2,079,000			5.32
Bhulta-REB Ring-2	7,312,250			17.9	6,869,500			18.01
Horipur-Meghnaghat	1,859,990			4.1	1,759,010			4.43
Horipur-Narsingdi	726,000			3.95	665,500			3.55
Horipur-Kanchan	5,695,030	103,796,853	5.00	12.75	5,126,344	101,794,512	6.83	12.39
Horipur-Demra	497,750			1.12	629,750			1.38
Horipur-Rohim steel	35,788			0.25	66,380			0.71
Sonargaon-Meghnagh	2,853,125			6.55	2,172,500			6.44
Sonarhaon-Narsingdi	1,063,178			2.39	1,001,330			2.16
Horipur-PGCBL	28,880			0.15	32,120			0.16
Horipur-Sonargaon-1	3,759,250			8.46	3,759,250			10.27
BASIC Kannchpur	1,405,828			4.12	1,841,125			4.91
Nara PBS-2 HP GT-1	9,441,004			0	9,037,580			0
Nara PBS-2 SPPCL	8,574,000			0	5,472,000			0
Head Quarte Express	1,322,228			3.55	1,262,773			3.94
Narayanganj	21,001			0	30,670			0
Everest PGCL(33kv)	5,560,500			16.35	5,489,000			14.49
Ananda Baza(Othe)	819,500			6.92	1,320,000			7.66
Abdul Monem Ltd.	372,003			1.45	54,070			0.75
Kabilgonj SS	-			0	-			0
Akhalia SS	-			0	-			0
Horipur-Sonargaon-2	-			0	-			0
Total	**109,259,857**			218.4	**109,256,463**			228.8

Import point	May,17				June,17			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	Peak Demand(MW)
Sonargaon	5,307,000			10.75	5,109,000			10.25
Meghnaghat-1	3,243,000			7.78	3,388,000			7.58
Meghnaghat-2	3,132,000			6.25	2,088,000			6.82
Ananda Baza	3,198,000			8.19	3,117,000			7.56
Head Office	5,566,030			12.53	5,341,266			11.02
Noyapur	3,171,000			7.73	3,409,000			7.85
Modingonj-1	5,326,380			10	6,387,030			9.25
Modingonj-2	2,925,810			6	1,802,160			6
Modingonj-Dasergao	5,962,680			13	5,215,980			12
Tarabo-1	8,024,500			16.51	7,579,000			16.23
Tarabo-2	4,449,500			9.87	4,530,000			9.32
Borpa	4,908,750			10.43	4,554,000			10.4
Horipur GIS	7,088,000			12.5	6,211,000			12
BSIC Kanchpur	4,592,500			11.31	4,878,500			11.83
Bhulta-Kanchan	2,428,250			5.19	1,867,250			5.42
Bhulta-REB Ring-2	6,996,000			21.34	6,949,250			20.16
Horipur-Meghnaghat	2,128,500			5.81	1,933,250			5.67
Horipur-Narsingdi	379,500			2.41	176,000			2.57
Horipur-Kanchan	5,158,326	110,440,483	8.37	16.07	4,208,105	101,499,444	8.91	14.71
Horipur-Demra	748,000			1.76	566,500			1.62
Horipur-Rohim steel	86,399			0.64	82,424			0.58
Sonargaon-Meghnagh	2,484,625			6.52	1,476,750			6.49
Sonarhaon-Narsingdi	1,042,250			2.1	151,250			2.11
Horipur-PGCBL	34,320			0.17	34,530			0.16
Horipur-Sonargaon-1	3,979,250			10.12	4,108,500			11.57
BASIC Kannchpur	2,622,125			5.39	1,681,735			5.14
Nara PBS-2 HP GT-1	10,422,324			0	9,797,991			0
Nara PBS-2 SPPCL	6,752,354			0	7,681,000			0
Head Quarte Express	1,053,250			3.52	1,075,250			3.52
Narayanganj	29,571			0	61,579			0
Everest PGCL(33kv)	4,768,500			15.02	3,976,500			14.69
Ananda Baza(Othe)	2,332,000			8.8	1,804,000			8.7
Abdul Monem Ltd.	-			0	-			0
Kabilgonj SS	191,760			0.88	186,192			0.8
Akhalia SS	-			0	-			0
Horipur-Sonargaon-2	-			0	-			0
Total	**120,532,454**			248.59	**111,427,992**			242.02

As per Sub-station Meter Data with Load Factor (2017-18) of NPBS-1

Import point	July'17					August'17			
	Unit kWh(Purchase)		Total KWh(sold)	Substation SL %	eak Demand(MW	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW
Sonargaon	5,029,000	4.24			9.45	5,105,000			12.75
Meghnaghat-1	3,877,000	3.27			7.84	4,003,000			7.95
Meghnaghat-2	2,898,000	2.44			6.82	2,538,000			6.08
Ananda Baza	3,588,000	3.02			6.39	3,619,000			7.57
Head Office	5,587,231	4.71			12.81	5,911,269			12.24
Noyapur	2,474,000	2.08			6.07	2,424,000			6.11
Modingonj-1	5,494,950	4.63			11	5,616,270			12
Modingonj-2	2,896,830	2.44			5.7	3,145,860			6
Modingonj-Daserg	5,265,720	4.44			10.6	5,993,640			13.5
Tarabo-1	8,508,500	7.17			16.67	8,899,000			16.27
Tarabo-2	4,148,500	3.50			9.37	6,016,500			10.8
Borpa	4,941,750	4.16			11.24	5,593,500			10.49
Horipur GIS	6,787,000	5.72			11.75	7,378,000			12.5
BSIC Kanchpur	5,385,250	4.54			11.86	6,085,750			12.33
Bhulta-Kanchan	1,897,500	1.60			4.92	2,090,000			5.26
Bhulta-REB Ring-2	7,224,470	6.09			20.98	8,067,125			21.88
Horipur-Meghnagl	2,901,250	2.44			6.14	2,766,500			5.75
Horipur-Narsingdi	390,500	0.33	115,353,939	2.79	1.3	365,750	124,403,594	5.52	2.39
Horipur-Kanchan	5,486,250	4.62			14.6	5,533,000			14.34
Horipur-Demra	555,500	0.47			1.36	558,250			1.25
Horipur-Rohim ste	68,514	0.06			1.12	641,028			1.91
Sonargaon-Meghn	1,478,125	1.25			6.78	1,878,250			6.67
Sonarhaon-Narsin	354,750	0.30			1.17	440,000			1.19
Horipur-PGCBL	40,300	0.03			0.17	28,290			0.15
Horipur-Sonargaor	4,246,000	3.58			10.82	3,583,250			8
BASIC Kannchpur	2,271,500	1.91			5	2,767,875			5.49
Nara PBS-2 HP GT-	10,317,503	8.69			0	11,872,677			0
Nara PBS-2 SPPCL	8,673,380	7.31			0	8,169,000			0
Head Quarte Expre	1,204,500	1.02			4.32	1,443,750			4.35
Narayanganj	45,107	0.04			0	44,146			0
Everest PGCL(33kv	1,666,500	1.40			13.23	4,686,000			15.35
Ananda Baza(Othe	1,738,000	1.46			7.18	2,183,500			7.98
Abdul Monem Ltd	-	0.00			0	-			0
Kabilgonj SS	194,928	0.16			0.5	263,424			1.11
Akhalia SS	1,025,000	0.86			1.5	1,167,000			2.34
Horipur-Sonargaor	-	0.00			0	792,000			3.48
Total	**118,661,308**	100.00			238.66	**131,669,604**			**255.48**

Import point	September'17				October'17			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW
Sonargaon	4,296,000			9.3	4,542,000			9.5
Meghnaghat-1	3,488,000			7.74	3,600,000			8.01
Meghnaghat-2	1,440,000			5.8	2,466,000			5.8
Ananda Baza	3,315,000			7.68	3,446,000			7.63
Head Office	5,151,021			11.74	6,024,620			12.25
Noyapur	2,384,000			5.42	2,490,000			5.36
Modingonj-1	5,167,440			10	5,005,440			10
Modingonj-2	3,009,240			6	2,739,240			6
Modingonj-Daserg	5,203,080			12.2	5,305,320			12
Tarabo-1	7,254,500			17.4	9,553,500			18.33
Tarabo-2	3,176,000			9.33	4,048,000			7.27
Borpa	4,314,750			13.26	5,560,500			11.42
Horipur GIS	5,959,000			12.75	7,051,000			12.5
BSIC Kanchpur	4,906,000			11.79	5,879,500			12
Bhulta-Kanchan	1,815,000			5.04	2,271,500			5.52
Bhulta-REB Ring-2	6,385,500			18.25	7,686,250			19.06
Horipur-Meghnagl	2,409,000			5.25	2,846,250			6.25
Horipur-Narsingdi	302,500	105,146,794	1.55	2.32	310,750	119,932,445	3.91	1.81
Horipur-Kanchan	4,006,750			13.96	5,816,250			16.44
Horipur-Demra	544,500			1.25	420,750			1.41
Horipur-Rohim ste	449,944			1.86	483,808			2.1
Sonargaon-Meghn	1,325,500			6.79	1,777,875			6.78
Sonarhaon-Narsin	577,500			1.12	605,000			1.18
Horipur-PGCBL	14,340			0.12	38,780			0.15
Horipur-Sonargaor	2,752,750			6.35	3,481,500			5.94
BASIC Kannchpur	2,409,000			4.13	2,927,375			5.41
Nara PBS-2 HP GT-	7,432,498			0	11,486,803			0
Nara PBS-2 SPPCL	8,167,000			0	7,317,000			0
Head Quarte Expre	1,460,250			4.34	1,715,395			6.13
Narayanganj	40,896			0	40,659			0
Everest PGCL(33kv	3,096,500			14.4	3,245,000			14.15
Ananda Baza(Othe	1,347,500			6.46	2,073,500			9.09
Abdul Monem Ltd	-			0	-			0
Kabilgonj SS	787,440			1.6	551,424			1.1
Akhalia SS	1,164,000			1.73	969,000			1.71
Horipur-Sonargaor	1,248,500			4.53	1,034,000			3.83
Total	**106,800,899**			239.91	**124,809,989**			246.13

Import point	November'17				December'17			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW
Sonargaon	3,667,000			8	3,339,000			7.9
Meghnaghat-1	2,490,000			6.6	2,584,000			6.23
Meghnaghat-2	2,448,000			6.12	2,592,000			6.26
Ananda Baza	2,301,000			5.71	2,290,000			5.32
Head Office	4,605,430			10.33	4,686,917			11.03
Noyapur	2,232,000			5	2,414,000			4.53
Modingonj-1	3,802,320			8.5	3,250,260			8
Modingonj-2	2,095,650			4.5	1,724,580			4.1
Modingonj-Daserg	4,884,480			12.5	4,789,260			12.5
Tarabo-1	8,291,250			20.35	8,093,250			19.86
Tarabo-2	3,492,500			6.782	3,531,000			6.65
Borpa	5,040,750			10.96	3,877,500			8.42
Horipur GIS	5,845,000			10.75	5,591,000			10.25
BSIC Kanchpur	5,131,500			10.95	4,144,250			9.96
Bhulta-Kanchan	2,241,250			5.57	2,235,750			5.54
Bhulta-REB Ring-2	7,987,375			17.69	7,278,645			17.52
Horipur-Meghnagl	2,629,000			6.52	2,400,750			5.75
Horipur-Narsingdi	145,750	113,814,878	0.74	1.13	195,250	109,878,387	2.31	1.52
Horipur-Kanchan	6,162,750			16.85	5,951,000			16.77
Horipur-Demra	690,250			1.56	668,250			1.41
Horipur-Rohim ste	419,665			3.24	606,149			3.69
Sonargaon-Meghn	2,030,875			7.15	2,552,000			7.84
Sonarhaon-Narsin	599,500			1.44	594,000			2.16
Horipur-PGCBL	36,440			0.15	27,030			0.14
Horipur-Sonargaon	3,234,000			6.06	3,140,500			6.17
BASIC Kannchpur	2,707,375			5.66	2,668,875			5.67
Nara PBS-2 HP GT-	10,857,944			0	10,239,199			0
Nara PBS-2 SPPCL	6,351,000			0	8,065,000			0
Head Quarte Expre	2,469,500			6.39	2,310,000			5.22
Narayanganj	31,470			0	22,342			0
Everest PGCL(33kv	4,262,500			10.15	4,785,000			10.23
Ananda Baza(Othe	2,442,000			9.06	3,025,000			9.13
Abdul Monem Ltd.	265,704			0.59	33,052			0.5
Kabilgonj SS	121,152			0.95	117,360			0.9
Akhalia SS	846,000			0.95	636,000			1.5
Horipur-Sonargaon	1,804,000			5.81	2,024,000			5.7
Total	**114,662,380**			233.972	**112,482,169**			228.37

Import point	January,18				February,18			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW
Sonargaon	3,153,000			6.75	3,125,000			8
Meghnaghat-1	2,742,000			3.36	2,306,000			5.32
Meghnaghat-2	2,520,000			6.25	3,096,000			6.43
Ananda Baza	2,393,000			5.33	2,586,000			6.58
Head Office	4,570,762			10.56	4,390,263			11.07
Noyapur	2,553,000			4.49	2,466,000			4.27
Modingonj-1	3,222,540			7.5	3,214,890			7
Modingonj-2	1,702,530			3.65	1,700,010			4.5
Modingonj-Daserg	4,438,080			9	4,529,880			12
Tarabo-1	7,381,000			18.11	6,294,750			17.17
Tarabo-2	3,426,500			6.62	3,463,625			9.16
Borpa	3,943,500			8.63	3,671,250			8.85
Horipur GIS	5,367,000			10	4,996,000			10.5
BSIC Kanchpur	4,592,500			10.7	4,028,750			10.22
Bhulta-Kanchan	4,895,000			5.55	4,160,750			12.46
Bhulta-REB Ring-2	8,313,250			20.75	5,904,250			19.47
Horipur-Meghnagl	2,428,467			6.14	2,136,339			5.88
Horipur-Narsingdi	192,500	105,913,405	3.39	1.6	228,250	99,329,789	3.21	1.53
Horipur-Kanchan	2,954,875			14.82	2,893,000			12.26
Horipur-Demra	737,000			1.5	701,250			1.53
Horipur-Rohim ste	438,165			3.35	391,454			3.15
Sonargaon-Meghn	2,567,125			7.91	2,454,375			6.75
Sonarhaon-Narsin	467,500			1.38	8,250			1.83
Horipur-PGCBL	24,010			0.15	22,460			0.13
Horipur-Sonargaon	3,102,000			5.63	3,476,000			5.76
BASIC Kannchpur	2,609,750			5.04	2,057,000			4.97
Nara PBS-2 HP GT-	9,887,105			0	9,067,883			0
Nara PBS-2 SPPCL	5,770,000			0	7,064,000			0
Head Quarte Expre	2,101,000			6.11	2,219,250			6.42
Narayanganj	28,646			0	26,118			0
Everest PGCL(33kv	4,917,000			10.42	3,657,500			14.89
Ananda Baza(Othe	3,619,000			9.21	2,915,000			9.22
Abdul Monem Ltd.	-			0	-			0
Kabilgonj SS	234,912			1.1	674,160			1.6
Akhalia SS	673,000			1.18	648,000			2.25
Horipur-Sonargaon	1,661,000			5.04	2,046,000			5.68
Total	**109,626,717**			217.83	**102,619,707**			236.85

Import point	March,18				April,18			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW
Sonargaon	4,358,000			9.5	3,832,000			9.4
Meghnaghat-1	3,153,000			6.75	2,528,000			6.8
Meghnaghat-2	3,690,000			6.25	2,988,000			6.3
Ananda Baza	3,119,540			7.95	2,670,000			8.1
Head Office	5,583,109			11.5	5,402,500			11.75
Noyapur	3,486,000			5.5	2,624,000			5.62
Modingonj-1	4,659,210			9	4,402,890			9
Modingonj-2	2,633,940			5.5	2,516,040			6
Modingonj-Daserg	6,011,100			13.5	6,090,840			14
Tarabo-1	8,734,000			20	8,734,000			19.5
Tarabo-2	4,420,625			12.5	3,613,500			12.5
Borpa	5,346,000			11	4,710,750			11.23
Horipur GIS	6,297,000			11	6,111,000			11.5
BSIC Kanchpur	5,530,250			11.5	5,673,250			11.6
Bhulta-Kanchan	2,464,000			12.8	2,003,375			12.9
Bhulta-REB Ring-2	7,888,375			20.15	6,976,159			20
Horipur-Meghnagl	2,565,594			5.9	2,299,885			6
Horipur-Narsingdi	327,250			1.53	293,315			1.55
Horipur-Kanchan	6,006,000	120,324,060	8.30	12.45	5,524,310	115,879,914	3.50	12.4
Horipur-Demra	808,500			1.65	801,818			1.6
Horipur-Rohim ste	451,411			4.13	592,217			4.5
Sonargaon-Meghn	2,990,625			6.8	2,521,623			6.9
Sonarhaon-Narsin	569,250			1.75	179,575			1.8
Horipur-PGCBL	32,150			0.18	30,790			0.18
Horipur-Sonargaor	3,228,500			5.81	3,405,903			5.92
BASIC Kannchpur	2,480,500			5.01	2,239,463			5.02
Nara PBS-2 HP GT-	10,663,160			0	10,334,474			0
Nara PBS-2 SPPCL	8,148,000			0	8,052,000			0
Head Quarte Expre	2,153,250			6.57	2,507,368			6.5
Narayanganj	32,303			0	32,721			0
Everest PGCL(33kv	4,779,500			14.95	3,647,215			15.2
Ananda Baza(Othe	4,812,500			9.33	4,229,500			9.44
Abdul Monem Ltd	-			0	-			0
Kabilgonj SS	966,384			1.75	1,359,696			1.8
Akhalia SS	1,012,000			2.5	1,035,000			2.51
Horipur-Sonargaor	1,815,000			7.56	115,500			7.55
Total	**131,216,026**			262.27	**120,078,677**			265.07

Import point	May,18				June,18			
	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW	Unit kWh(Purchase)	Total KWh(sold)	Substation SL %	eak Demand(MW
Sonargaon	4,348,000			9.36	4,699,000			9.25
Meghnaghat-1	2,179,000			7	2,090,000			6.8
Meghnaghat-2	1,926,000			7	2,340,000			6.9
Ananda Baza	3,338,500			9.15	3,489,750			9
Head Office	5,772,250			12.5	5,731,000			11.95
Noyapur	2,607,000			6.75	3,584,000			6.5
Modingonj-1	5,115,330			11	5,516,100			10.5
Modingonj-2	2,849,310			6	3,148,290			5
Modingonj-Daserg	5,962,320			13	6,998,220			12
Tarabo-1	9,608,390			19	8,938,655			18
Tarabo-2	4,262,500			11	4,195,208			10
Borpa	4,933,500			10	3,650,130			9
Horipur GIS	6,728,000			12.5	6,151,000			12
BSIC Kanchpur	5,975,750			9.5	5,359,750			9
Bhulta-Kanchan	1,940,098			13.5	-			0
Bhulta-REB Ring-2	7,762,356			23	8,267,490			22
Horipur-Meghnagl	2,256,818			8.75	1,662,896			8
Horipur-Narsingdi	612,645			14	745,745			13.5
Horipur-Kanchan	6,478,890	119,927,305	7.15	23.75	4,968,425	110,818,813	7.48	22
Horipur-Demra	783,750			1.4	640,750			1.3
Horipur-Rohim ste	292,974			22.75	255,314			22.5
Sonargaon-Meghn	2,330,625			14	1,960,585			13
Sonarhaon-Narsin	11,000			0.25	7,838			0.25
Horipur-PGCBL	20,810			0.18	37,020			0.18
Horipur-Sonargaor	2,871,000			25.5	2,129,793			25
BASIC Kannchpur	2,414,500			9	2,178,000			8
Nara PBS-2 HP GT-	11,669,303			0	9,097,922			0
Nara PBS-2 SPPCL	10,624,000			0	10,134,960			0
Head Quarte Expre	2,669,618			24	2,463,148			22
Narayanganj	28,646			0	43,235			0
Everest PGCL(33kv	3,832,565			15	2,812,315			14
Ananda Baza(Othe	3,923,865			11.5	2,999,590			11
Abdul Monem Ltd	-			0	-			0
Kabilgonj SS	2,202,528			6.3	2,479,248			6.2
Akhalia SS	824,000			2.5	1,006,000			2.5
Horipur-Sonargaor	-			0	-			0
Total	**129,155,841**			359.14	**119,781,377**			327.33

Monthly Financial & Statistical Report 2015-16 of NPBS-1

Particular	July	August	September
Operating Revenue			
Sales of electricity	402,772,765.00	471,689,338.00	437,676,843.00
Other operating revenue	2,204,460.00	3,955,151.75	2,498,774.00
Total operating revenue	404,977,225.00	475,644,489.75	440,175,617.00
Cost of purchased power	263,356,907.00	310,670,647.00	591,094,402.00
Gross profit/Margin	141,620,318.00	164,973,842.75	(150,918,785.00)
Distribution Expenses -Operating & Maintenance	5,218,964.95	5,413,371.46	6,223,481.60
Consumer Selling expenses	9,509,431.05	7,726,238.58	9,351,866.81
Administration & General Expenses	5,955,189.89	5,856,420.73	6,786,222.38
Total operating & General expenses	284,040,492.89	329,666,677.77	613,455,972.79
Depreciation & Amortization expenses	26,091,675.07	26,283,386.90	26,329,042.11
Tax expenses	709,150.00	847,110.00	2,473,790.00
Interest on long term loan	1,900,000.00	1,900,000.00	1,900,000.00
Total cost of electric service	312,741,317.96	358,697,174.67	644,158,804.90
Operating profit/Margin	92,235,907.04	116,947,315.08	(203,983,187.90)
Government Subsidy	-	-	-
Non-operating margins-interest	9,129,552.96	7,747,007.97	81,867,583.55
Non-operating margins-others	768,775.00	551,600.00	620,300.00
Net Profit/Margin	102,134,235.00	125,245,923.05	(121,495,304.35)

Particular	October	November	December
Operating Revenue			
Sales of electricity	497,669,219.00	470,595,093.00	446,748,185.00
Other operating revenue	4,864,402.00	5,591,556.00	4,632,348.00
Total operating revenue	502,533,621.00	476,186,649.00	451,380,533.00
Cost of purchased power	428,490,951.00	376,228,350.00	401,185,348.00
Gross profit/Margin	74,042,670.00	99,958,299.00	50,195,185.00
Distribution Expenses -Operating & Maintenance	4,733,347.25	10,143,033.09	4,469,935.82
Consumer Selling expenses	8,258,153.94	7,833,932.16	7,805,770.68
Administration & General Expenses	6,000,829.20	5,443,294.39	5,564,943.19
Total operating & General expenses	447,483,281.39	399,648,609.64	419,025,997.69
Depreciation & Amortization expenses	26,307,697.14	49,547,222.90	26,314,525.28
Tax expenses	1,868,560.00	890,700.00	671,680.00
Interest on long term loan	1,900,000.00	6,500,000.00	6,366,189.00
Total cost of electric service	477,559,538.53	456,586,532.54	452,378,391.97
Operating profit/Margin	24,974,082.47	19,600,116.46	(997,858.97)
Government Subsidy	-	-	-
Non-operating margins-interest	4,300,386.56	9,202,166.55	44,534,309.52
Non-operating margins-others	561,685.00	717,571.00	627,345.00
Net Profit/Margin	29,836,154.03	29,519,854.01	44,163,795.55

Particular	January	February	March
Operating Revenue			
Sales of electricity	457,985,096.00	532,841,531.00	610,269,828.00
Other operating revenue	4,391,117.00	4,416,567.00	4,335,642.00
Total operating revenue	462,376,213.00	537,258,098.00	614,605,470.00
Cost of purchased power	373,445,687.00	514,545,622.00	580,297,520.00
Gross profit/Margin	88,930,526.00	22,712,476.00	34,307,950.00
Distribution Expenses -Operating & Maintenance	10,163,773.55	4,448,342.97	3,660,915.88
Consumer Selling expenses	12,962,512.77	7,823,724.65	8,214,672.52
Administration & General Expenses	8,229,388.68	5,496,725.32	5,661,586.55
Total operating & General expenses	404,801,362.00	532,314,414.94	597,834,694.95
Depreciation & Amortization expenses	26,482,172.04	(27,201,254.32)	1,159,842.11
Tax expenses	1,011,521.00	517,850.00	1,049,940.00
Interest on long term loan	3,411,000.00	1,900,000.00	1,900,000.00
Total cost of electric service	435,706,055.04	507,531,010.62	601,944,477.06
Operating profit/Margin	26,670,157.96	29,727,087.38	12,660,992.94
Government Subsidy	-	-	-
Non-operating margins-interest	1,493,725.00	16,378,405.55	12,205,873.91
Non-operating margins-others	2,223,385.00	545,170.00	683,266.00
Net Profit/Margin	30,387,267.96	46,650,662.93	25,550,132.85

Particular	April	May	June
Operating Revenue			
Sales of electricity	596,119,228.00	566,579,492.00	675,887,669.00
Other operating revenue	4,597,749.65	5,805,863.00	7,002,818.45
Total operating revenue	600,716,977.65	572,385,355.00	682,890,487.45
Cost of purchased power	588,823,397.00	555,029,202.00	679,766,500.30
Gross profit/Margin	11,893,580.65	17,356,153.00	3,123,987.15
Distribution Expenses -Operating & Maintenance	4,214,224.25	4,879,794.37	18,081,291.01
Consumer Selling expenses	8,536,581.20	7,856,417.30	24,703,331.45
Administration & General Expenses	6,745,621.01	4,362,354.85	51,517,326.06
Total operating & General expenses	608,319,823.46	572,127,768.52	774,068,448.82
Depreciation & Amortization expenses	3,173,528.16	14,341,736.56	(62,912,572.73)
Tax expenses	36,838.00	1,256,755.00	1,513,770.00
Interest on long term loan	1,900,000.00	1,900,000.00	(3,756,896.00)
Total cost of electric service	613,430,189.62	589,626,260.08	708,912,750.09
Operating profit/Margin	(12,713,211.97)	(17,240,905.08)	(26,022,262.64)
Government Subsidy	-	-	-
Non-operating margins-interest	41,218,221.73	42,104,999.42	58,471,752.59
Non-operating margins-others	576,313.00	543,433.00	459,974.00
Net Profit/Margin	29,081,322.76	25,407,527.34	32,909,463.95

Monthly Financial & Statistical Report 2016-17 of NPBS-1

Particular	July	August	September
Operating Revenue			
Sales of electricity	547,329,895.00	643,071,888.00	557,928,164.00
Other operating revenue	2,136,040.00	4,226,901.00	3,943,667.35
Total operating revenue	549,465,935.00	647,298,789.00	561,871,831.35
Cost of purchased power	480,097,666.00	567,096,494.00	474,669,446.00
Gross profit/Margin	69,368,269.00	80,202,295.00	87,202,385.35
Distribution Expenses -Operating & Maintenance	5,625,124.97	8,173,940.83	7,786,848.21
Consumer Selling expenses	9,696,034.12	14,256,562.25	12,524,251.75
Administration & General Expenses	6,210,925.18	8,905,769.92	8,088,662.11
Total operating & General expenses	501,629,750.27	598,432,767.00	503,069,208.07
Depreciation & Amortization expenses	14,081,536.26	15,787,850.88	55,753,078.88
Tax expenses	589,120.00	1,082,133.00	1,069,900.00
Interest on long term loan	2,075,000.00	2,075,000.00	2,075,000.00
Total cost of electric service	518,375,406.53	617,377,750.88	561,967,186.95
Operating profit/Margin	31,090,528.47	29,921,038.12	(95,355.60)
Government Subsidy	-	-	-
Non-operating margins-interest	-	14,606,689.60	31,902,556.92
Non-operating margins-others	393,933.00	516,900.00	351,039.00
Net Profit/Margin	31,484,461.47	45,044,627.72	32,158,240.32

Particular	October	November	December
Operating Revenue			
Sales of electricity	688,765,696.00	632,782,747.00	616,219,266.00
Other operating revenue	6,555,908.00	4,743,268.00	5,554,011.00
Total operating revenue	695,321,604.00	637,526,015.00	621,773,277.00
Cost of purchased power	614,107,555.00	551,531,352.00	558,680,031.00
Gross profit/Margin	81,214,049.00	85,994,663.00	63,093,246.00
Distribution Expenses -Operating & Maintenance	9,279,387.59	6,659,919.30	8,585,383.58
Consumer Selling expenses	10,248,219.25	9,849,656.25	11,152,233.28
Administration & General Expenses	7,264,626.04	7,132,467.12	8,955,601.34
Total operating & General expenses	640,899,787.88	575,173,394.67	587,373,249.20
Depreciation & Amortization expenses	16,682,346.61	16,804,795.17	16,936,392.36
Tax expenses	1,213,490.00	1,285,780.00	1,441,590.00
Interest on long term loan	2,075,000.00	2,075,000.00	2,075,000.00
Total cost of electric service	660,870,624.49	595,338,969.84	607,826,231.56
Operating profit/Margin	34,450,979.51	42,187,045.16	13,947,045.44
Government Subsidy	-	-	-
Non-operating margins-interest	5,942,451.00	9,092,667.51	46,525,898.44
Non-operating margins-others	540,619.00	413,678.00	472,529.00
Net Profit/Margin	40,934,049.51	51,693,390.67	60,945,472.88

Particular	January	February	March
Operating Revenue			
Sales of electricity	644,172,022.00	596,892,320.00	676,393,107.00
Other operating revenue	5,524,943.00	4,078,205.00	5,025,182.00
Total operating revenue	649,696,965.00	600,970,525.00	681,418,289.00
Cost of purchased power	573,077,133.00	533,238,266.00	607,351,282.00
Gross profit/Margin	76,619,832.00	67,732,259.00	74,067,007.00
Distribution Expenses -Operating & Maintenance	6,737,058.68	6,069,827.69	16,364,943.03
Consumer Selling expenses	10,496,703.00	10,809,856.25	22,016,035.25
Administration & General Expenses	7,611,356.51	7,642,568.29	13,717,512.23
Total operating & General expenses	597,922,251.19	557,760,518.23	659,449,772.51
Depreciation & Amortization expenses	17,022,777.92	17,044,744.70	16,802,197.27
Tax expenses	1,129,710.00	1,049,010.00	973,650.00
Interest on long term loan	1,148,485.00	1,942,000.00	1,942,000.00
Total cost of electric service	617,223,224.11	577,796,272.93	679,167,619.78
Operating profit/Margin	32,473,740.89	23,174,252.07	2,250,669.22
Government Subsidy	-	-	-
Non-operating margins-interest	641,421.11	6,604,836.79	22,003,943.87
Non-operating margins-others	480,950.00	929,136.00	394,950.00
Net Profit/Margin	33,596,112.00	30,708,224.86	24,649,563.09

Particular	April	May	June
Operating Revenue			
Sales of electricity	662,554,939.00	710,653,196.00	643,048,143.00
Other operating revenue	5,796,982.00	5,896,223.00	5,267,733.75
Total operating revenue	668,351,921.00	716,549,419.00	648,315,876.75
Cost of purchased power	609,589,413.00	671,287,590.00	571,744,442.00
Gross profit/Margin	58,762,508.00	45,261,829.00	76,571,434.75
Distribution Expenses -Operating & Maintenance	9,215,026.35	6,928,526.01	10,876,338.34
Consumer Selling expenses	11,077,837.50	11,461,679.00	14,599,399.25
Administration & General Expenses	7,920,111.48	7,900,600.10	44,900,102.28
Total operating & General expenses	637,802,388.33	697,578,395.11	642,120,281.87
Depreciation & Amortization expenses	16,836,708.87	17,414,648.87	21,451,152.68
Tax expenses	954,702.00	989,374.00	2,001,884.00
Interest on long term loan	1,942,000.00	1,942,000.00	1,422,647.00
Total cost of electric service	657,535,799.20	717,924,417.98	666,995,965.55
Operating profit/Margin	10,816,121.80	(1,374,998.98)	(18,680,088.80)
Government Subsidy	-	-	-
Non-operating margins-interest	16,512,990.81	32,908,449.67	35,239,772.24
Non-operating margins-others	443,977.00	425,330.00	280,297.00
Net Profit/Margin	27,773,089.61	31,958,780.69	16,839,980.44

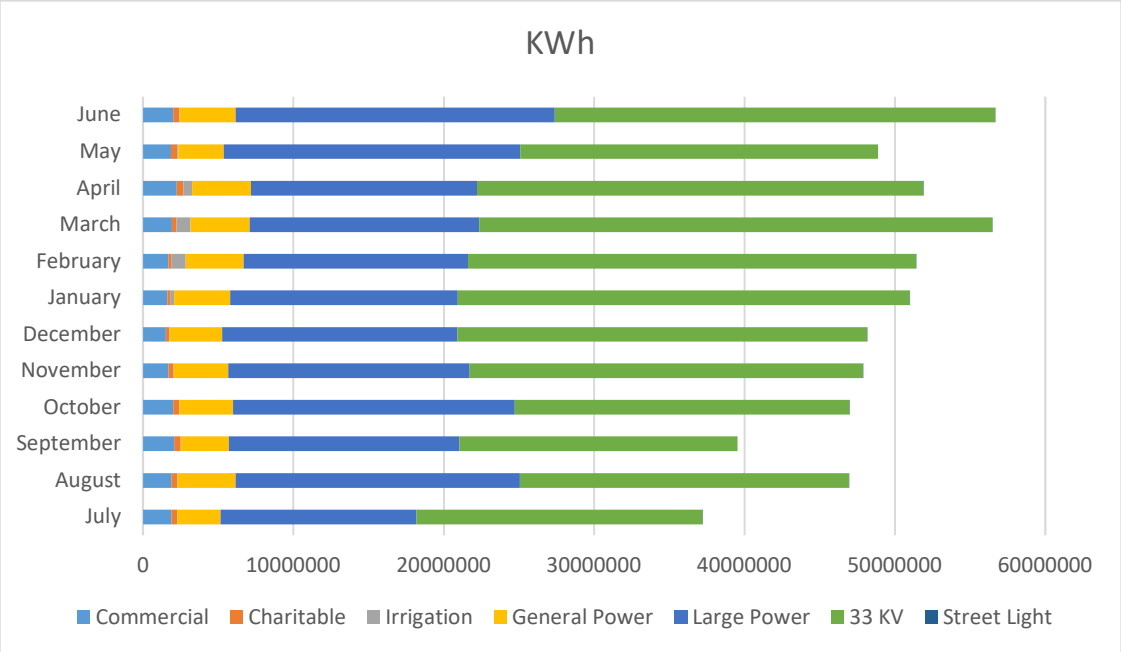
Monthly Financial & Statistical Report 2017-18 of NPBS-1

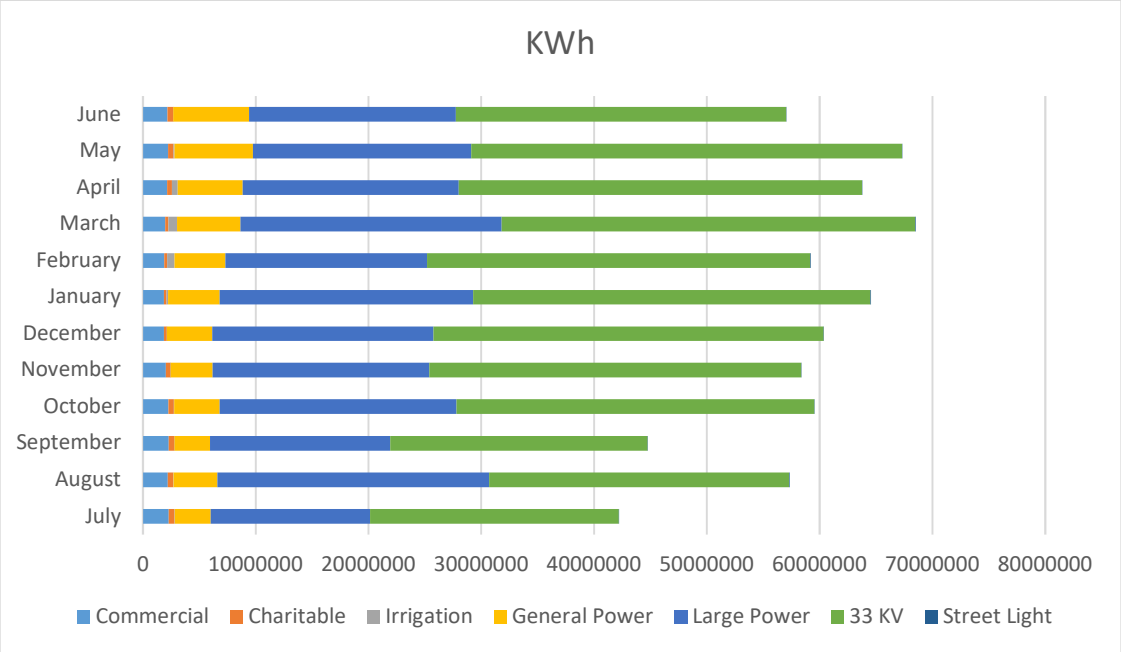
Particular	July	August	September
Operating Revenue			
Sales of electricity	727,959,468.00	794,018,618.00	667,411,653.00
Other operating revenue	4,081,513.00	5,068,548.00	3,766,661.00
Total operating revenue	732,040,981.00	799,087,166.00	671,178,314.00
Cost of purchased power	650,803,641.00	720,137,356.00	616,640,858.00
Gross profit/Margin	81,237,340.00	78,949,810.00	54,537,456.00
Distribution Expenses -Operating & Maintenance	6,380,561.66	10,010,201.82	10,423,314.41
Consumer Selling expenses	10,944,833.25	15,609,721.25	11,632,100.50
Administration & General Expenses	6,786,474.17	10,111,155.48	7,580,607.43
Total operating & General expenses	674,915,510.08	755,868,434.55	646,276,880.34
Depreciation & Amortization expenses	16,822,293.90	16,822,293.90	17,262,642.78
Tax expenses	1,154,030.00	1,122,666.00	819,823.00
Interest on long term loan	1,899,000.00	1,899,000.00	1,899,000.00
Total cost of electric service	694,790,833.98	775,712,394.45	666,258,346.12
Operating profit/Margin	37,250,147.02	23,374,771.55	4,919,967.88
Government Subsidy	-	-	-
Non-operating margins-interest	1,887,858.11	18,894,648.14	32,341,411.60
Non-operating margins-others	428,968.00	635,249.00	339,006.00
Net Profit/Margin	39,566,973.13	42,904,668.69	37,600,385.48

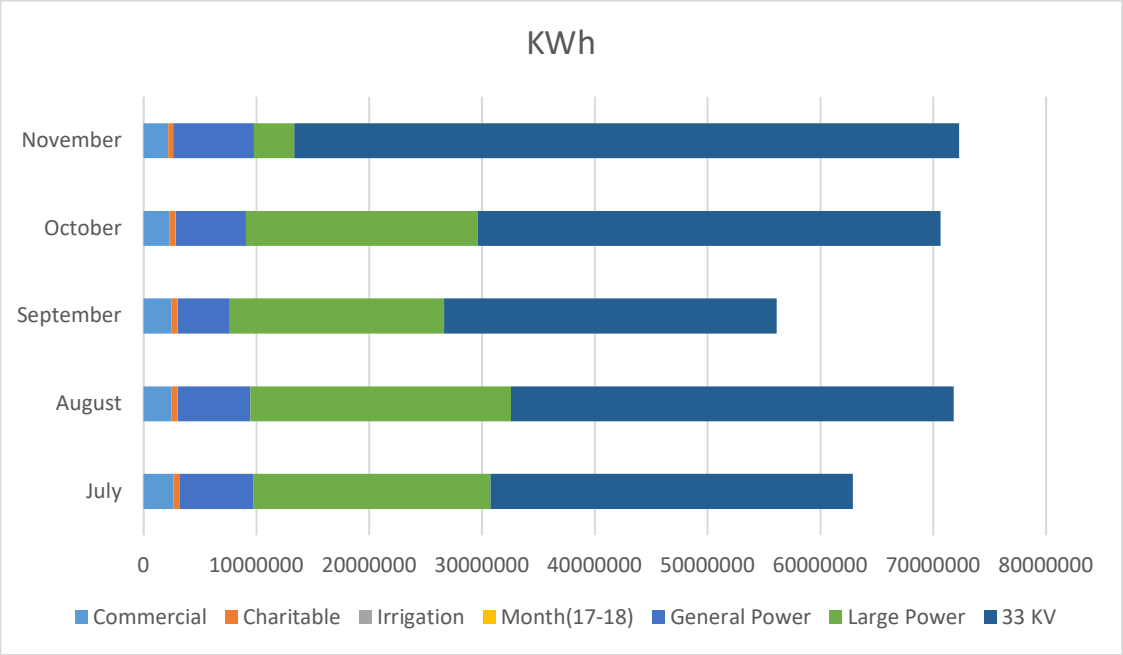
Particular	October	November	December
Operating Revenue			
Sales of electricity	768,538,621.00	743,512,007.00	767,981,033.00
Other operating revenue	5,399,046.00	5,016,228.00	5,119,155.00
Total operating revenue	773,937,667.00	748,528,235.00	773,100,188.00
Cost of purchased power	697,886,543.00	596,365,985.00	756,954,179.79
Gross profit/Margin	76,051,124.00	152,162,250.00	16,146,008.21
Distribution Expenses -Operating & Maintenance	6,571,847.95	8,042,376.81	11,953,197.04
Consumer Selling expenses	11,299,417.25	10,984,040.75	12,545,933.75
Administration & General Expenses	7,792,917.48	10,092,544.53	14,306,269.26
Total operating & General expenses	723,550,725.68	625,484,947.09	795,759,579.84
Depreciation & Amortization expenses	11,245,450.92	18,380,798.86	18,911,307.02
Tax expenses	1,292,550.00	1,148,483.00	799,720.00
Interest on long term loan	1,899,000.00	1,899,000.00	1,386,846.00
Total cost of electric service	737,987,726.60	646,913,228.95	816,857,452.86
Operating profit/Margin	35,949,940.40	101,615,006.05	(43,757,264.86)
Government Subsidy	-	-	-
Non-operating margins-interest	4,664,185.90	11,896,101.76	43,401,788.86
Non-operating margins-others	2,285,469.00	468,560.00	355,476.00
Net Profit/Margin	42,899,595.30	113,979,667.81	0.00

Particular	January	February	March
Operating Revenue			
Sales of electricity	740,235,238.00	694,901,609.00	836,848,641.00
Other operating revenue	6,068,520.96	3,765,672.50	4,511,716.45
Total operating revenue	746,303,758.96	698,667,281.50	841,360,357.45
Cost of purchased power	690,476,126.93	648,874,424.16	787,160,542.08
Gross profit/Margin	55,827,632.03	49,792,857.34	54,199,815.37
Distribution Expenses -Operating & Maintenance	12,844,676.53	6,013,828.32	10,072,225.07
Consumer Selling expenses	13,818,457.00	10,343,123.75	12,358,240.00
Administration & General Expenses	11,964,966.18	12,042,372.92	10,948,130.11
Total operating & General expenses	729,104,226.64	677,273,749.15	820,539,137.26
Depreciation & Amortization expenses	17,284,917.58	19,571,570.35	19,649,233.19
Tax expenses	777,650.00	538,580.00	1,174,320.00
Interest on long term loan	1,899,000.00	1,899,000.00	1,899,000.00
Total cost of electric service	749,065,794.22	699,282,899.50	843,261,690.45
Operating profit/Margin	(2,762,035.26)	(615,618.00)	(1,901,333.00)
Government Subsidy	-	-	-
Non-operating margins-interest	4,041,099.26	267,751.00	1,538,173.00
Non-operating margins-others	(1,279,064.00)	347,867.00	363,160.00
Net Profit/Margin	0.00	-	(0.00)

Particular	April	May	June
Operating Revenue			
Sales of electricity	796,901,274.00	817,770,740.00	760,119,767.00
Other operating revenue	5,096,924.00	6,535,798.00	5,756,883.00
Total operating revenue	801,998,198.00	824,306,538.00	765,876,650.00
Cost of purchased power	760,220,199.26	680,385,837.78	791,141,370.00
Gross profit/Margin	41,777,998.74	143,920,700.22	(25,264,720.00)
Distribution Expenses -Operating & Maintenance	6,114,567.49	6,932,893.24	12,641,895.25
Consumer Selling expenses	9,821,434.00	10,055,155.78	15,437,703.75
Administration & General Expenses	9,765,606.81	9,856,177.11	26,457,347.79
Total operating & General expenses	785,921,807.56	707,230,063.91	845,678,316.79
Depreciation & Amortization expenses	19,649,233.19	19,954,263.27	21,160,362.21
Tax expenses	976,680.00	1,290,666.00	2,198,513.00
Interest on long term loan	1,899,000.00	1,899,000.00	10,401,610.00
Total cost of electric service	808,446,720.75	730,373,993.18	879,438,802.00
Operating profit/Margin	(6,448,522.75)	93,932,544.82	(113,562,152.00)
Government Subsidy	-	-	-
Non-operating margins-interest	6,076,854.75	54,548,804.64	34,320,451.81
Non-operating margins-others	371,668.00	675,827.50	207,004.00
Net Profit/Margin	-	149,157,176.96	(79,034,696.19)







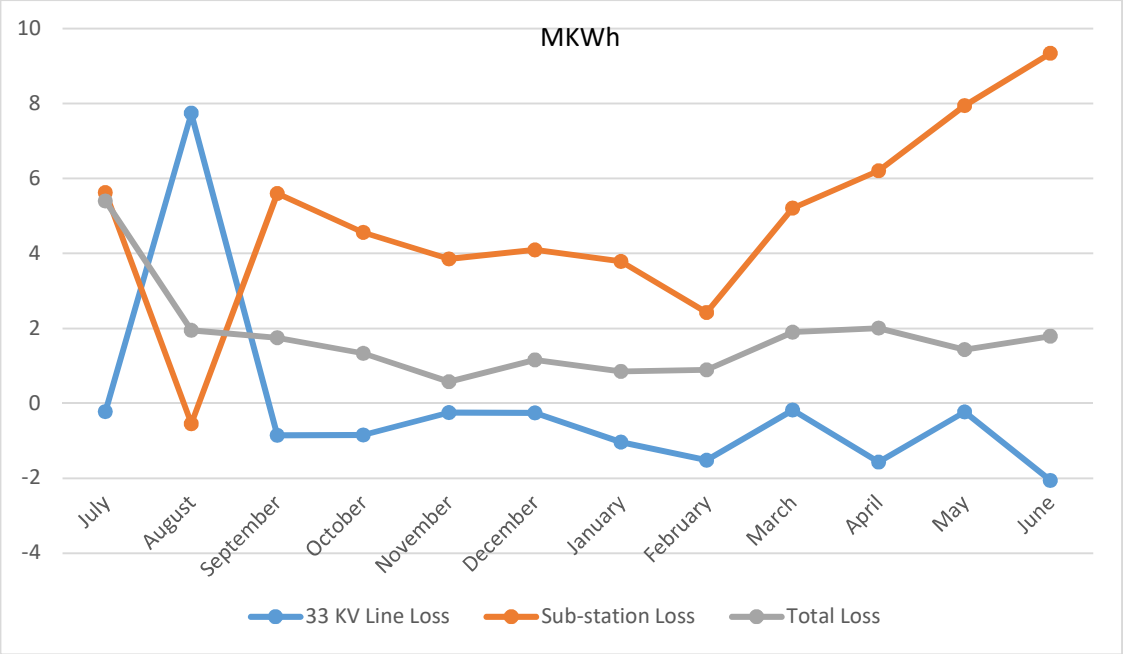


Fig: Energy Loss of NPBS-1, 2015-16

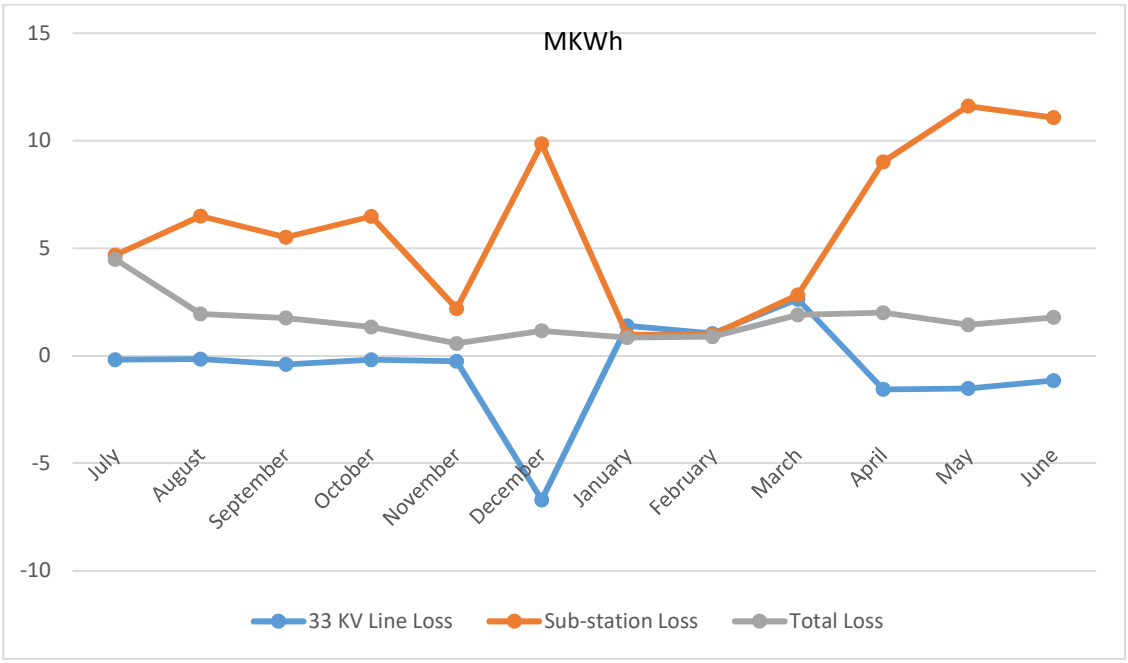


Fig: Energy Loss of NPBS-1, 2016-17

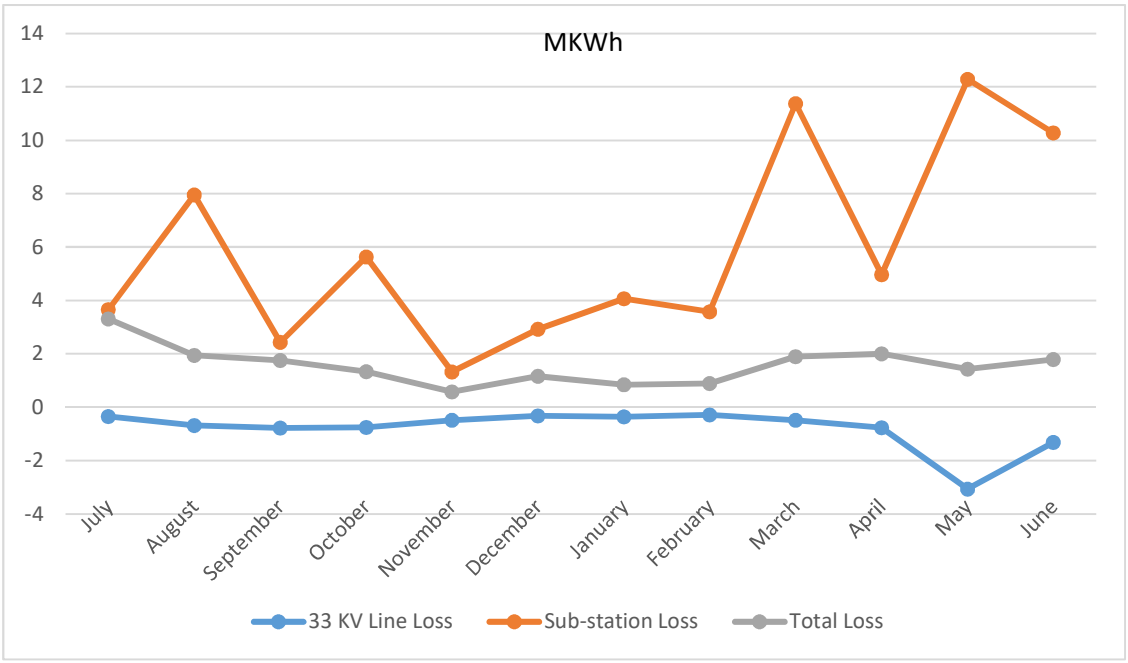


Fig: Energy Loss of NPBS-1, 2017-18

Cost of Electric Service (10^7 Tk.) (2015-16):

Month	OME	CSE	AGE	DAE	TE	IE
July	0.522	0.951	0.596	2.609	0.071	0.190
August	0.541	0.773	0.586	2.628	0.085	0.190
September	0.622	0.935	0.679	2.633	0.247	0.190
October	0.473	0.826	0.600	2.631	0.187	0.190
November	1.014	0.783	0.544	4.955	0.089	0.650
December	0.447	0.781	0.556	2.631	0.067	0.637
January	1.016	1.296	0.823	2.648	0.101	0.341
February	0.445	0.782	0.550	-2.720	0.052	0.190
March	0.366	0.821	0.566	0.116	0.105	0.190
April	0.421	0.854	0.675	0.317	0.004	0.190
May	0.488	0.786	0.436	1.434	0.126	0.190
June	1.808	2.170	4.512	-6.291	0.151	-0.376
Grand total	**8.165**	**11.758**	**11.123**	**13.592**	**1.285**	**2.772**

Cost of Electric Service (10^7 Tk.) (2016-17):

Month	OME	CSE	AGE	DAE	TE	IE
July	0.563	0.970	0.621	1.408	0.059	0.208
August	0.817	1.426	0.891	1.579	0.108	0.208
September	0.779	1.252	0.809	5.575	0.107	0.208
October	0.928	1.025	0.726	1.668	0.121	0.208
November	0.666	0.985	0.713	1.680	0.129	0.208
December	0.859	1.115	0.896	1.694	0.144	0.208
January	0.674	1.050	0.761	1.702	0.113	0.115
February	0.607	1.081	0.764	1.704	0.105	0.194
March	1.636	2.202	1.372	1.680	0.097	0.194
April	0.922	1.108	0.792	1.684	0.095	0.194
May	0.693	1.146	0.790	1.741	0.099	0.194
June	1.088	1.460	4.490	2.145	0.200	0.142
Grand total	**10.230**	**14.819**	**13.625**	**24.262**	**1.378**	**2.279**

.

Cost of Electric Service (10^7 Tk.) (2017-18):

Month	OME	CSE	AGE	DAE	TE	IE
July	0.638	1.094	0.679	1.682	0.115	0.190
August	1.001	1.561	1.011	1.682	0.112	0.190
September	1.042	1.163	0.758	1.726	0.082	0.190
October	0.657	1.130	0.779	1.125	0.129	0.190
November	0.804	1.098	1.009	1.838	0.115	0.190
December	1.195	1.255	1.431	1.891	0.080	0.139
January	1.284	1.382	1.196	1.728	0.078	0.190
February	0.601	1.034	1.204	1.957	0.054	0.190
March	1.007	1.236	1.095	1.965	0.117	0.190
April	0.611	0.982	0.977	1.965	0.098	0.190
May	0.693	1.006	0.986	1.995	0.129	0.190
June	1.264	1.544	2.646	2.116	0.220	1.040
Grand total	**10.800**	**14.485**	**13.770**	**21.671**	**1.329**	**3.078**