



A Study on Rural Electrification in Assam

Gwmwthao Narzary

Assistant Professor

Department of Economics

U.N. Academy, Kokrajhar, BTC, Assam

Abstract

Energy is the most essential tool of development and is considered as instrumental to stimulate economic, social and physical development. Energy or power take most important role in providing basic services such as safe drinking water, lighting, health care, education, etc. It also enables for better standards of living and fuelling economic and income generation activities. The availability of electricity in rural India is important for its overall development. The service sector has created an important role in contribution to the expansion of our economy. Assam is a most populous state in the North Eastern region of India. The population of the state has been growing at faster rate than that of the country as a whole since the beginning of the century and at much faster rate in the post-independence period. As per census 2011, 85.9% of total population of Assam live in rural and only 14.1% live in urban. Thus, rural electrification is most important tool for overall development and it can enhance standard of household living, economic growth and income generation activities. The present study based on secondary data and it will be analytical. It attempts to find present status of rural electricity in Assam and identify the problem of rural electricity in Assam.

Keywords: Rural Electrification, Energy, Standard of living.

1. Introduction

Rural electrification is an important component of integrated rural development. Energy or power is a tool which helps in providing basic services such as safe drinking water, lighting, health care, education, etc. Rural electrification is the backbone of rural economy and a basic input for rapid rural development. It is main infrastructure for enhancing speedy growth of agriculture sector and agro based industrial structure in rural areas. Without electricity, communities are unable to participate in the benefits of modern advances and may left in the dark.

Rural electrification is the key for accelerating rural development as electricity is essential to cater to requirements of home lighting, agriculture, rural industries, khadi and village industries, health care, information technology etc. Assam has about 86% of the state's population living in rural areas. The rapid urbanisation, infrastructure and industrial development in India has result in the growth of electricity demand in the country. Among the total electricity consumption, domestic and commercial categories form main part. Therefore, the availability of the trend growth of electricity consumption is vital input for fixing the priorities. The north east part of India has hydro power potential of 63,257 MW or 43% of the total assessed hydro power of the country.

588 | Received: 8 February Revised: 17 February Accepted: 24 February

Index in Cosmos

March 2019 Volume 9 Number 3

UGC Approved Journal



Among the north eastern states, Assam has the capacity to produce 680 MW hydropower of the Country. Assam Power Sector Development Programme and in pursuance of the Indian Electricity Act 2003, the Government of Assam has set Assam State Electricity Board in 2004, into three government companies i.e. The Assam Power Generation corporation Limited (APGCL), The Assam Electricity Grid Corporation Limited (AEGCL), The Assam Power Distribution Corporation Limited (APDCL).

These initiatives are in the interest of all consumers, shareholders, suppliers, creditors, infrastructure builders and the government of Assam. The schemes like externally aid project, rural electrification, accelerated power development and reform programme (APDRP) which are being executed under Assam State Electricity Board (ASEB).

2. Methodology of the study

The present study deals with the ruralelectrification in Assam. It is chosen to find out the present status of rural electricity i.e. electrification villages in Assam and problem of electrification in rural areas of Assam. Only secondary data have used to analyse the present study. The secondary data are collected from different journals, Magazines, newspapers, books and from official websites. The paper will be considered only in the state Assam and study will be limited only in the rural electricity of Assam.

3. Objectives of the study

The present study taken the following objectives

- i. To know the present status of rural electricity in Assam
- ii. To identify the problem of rural electricity in Assam

4. The present status of power generation of Assam

The present status of power generation in the state is not satisfactory from the point of power requirement of consumers concerned. The installed capacity of generating plant at present in the state is 380 MW which includes coal, Hydel and Gas plants of the state. There has been always shortage of power supply in the state in comparison to its demand. However, the ASEB has been trying to meet the power shortage by importing power from the other sources. According to Economic Survey of Assam 2018-17 the gross power generation in the state during the year 2014-15 was 1895 MU and in the year 2015-16 was 1851 MU.



The installed capacity of capacity of various generating plants and the generation of power in the state during the last 9 years are shown below:

Table 1: Installed capacity and generation of electricity in Assam

Type	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
A. Installed capacity of generating plants (MW)									
Thermal	60	60	60	60	60	60	60	60	60
Hydel	102	102	102	102	100	100	100	103	103
Gas	239.5	239.5	239.5	239.5	239.5	217	217	217	217
Total	401.5	401.5	401.5	401.5	399.5	377	377	380	380
B. Gross unit generated (MU)									
Thermal	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Hydel	510.2	434.4	401.9	409.5	454.9	344.0	422.5	367.71	396.68
Gas	1031.1	1248.4	1310.1	1298.3	1317.4	1421.3	1422.8	1527	1454.2
Total	1541.3	1682.8	1712	1707.8	1766.3	1765.3	1845.3	1894.71	1850.88
C. Auxiliary consumption (MU)									
Thermal	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Hydel	0.985	0.788	0.821	2.1	2.3	1.7	2.1	1.813	1.908
Gas	42.2	52.2	86.01	90.7	98	131.9	110.3	114.1	104.2
Total	43.185	52.988	86.831	92.8	100.3	133.6	112.4	115.913	106.2
D. Net unit generated (MU)									
Thermal	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Hydel	509.2	433.61	401.1	407.4	452.7	342.3	420.4	365.8	394.7
Gas	988.94	1196.26	1253.27	1207.6	1219.3	1289.4	1312.5	1412.9	1350
Total	1498.8	1629.87	1654.37	1615	16721	1631.7	1732.9	1778.7	1744.7

Source: Economic Survey of Assam 2010-11 to 2016-17

5. Electricity consumers in Assam

The population census of India 2011 report reveals that 37% households of Assam are using electricity as a source of lighting compared to 67% households of all India. The rural and urban differential use of electricity as a source is very high in Assam. Only 28% rural households compared to 84.1% urban households in Assam are using electricity as a source of lighting.



Table 2: Households Using Electricity source of Lighting (2013-14)

Item	Assam			India		
	Rural	Urban	Total	Rural	Urban	Total
Total	53,74,553	9,92,742	63,67,295	16,78,26,730	7,88,65,937	24,66,92,667
Electricity	15,24,221	8,34,679	23,58,900	9,28,08,038	7,30,89,256	16,58,97,294
Households using electricity (%)	28	84.1	37	55	93	67

Source: Economic Survey of Assam 2016-17

The above table 2 revealed that 28% rural consumers and 84 % urban consumers are using electricity for purpose of lighting in Assam. However, combining together both rural and urban, only 37% consumers are using electricity as a source of lighting. In India, 55% rural consumers and 93% urban consumers are using electricity as source of lighting and overall 67% consumers are using electricity for the purpose of lighting.

Table 3: Total number of consumers

Year	Domestic	Commercial	Total
2010-11	1522194	166399	1688593
2011-12	1811129	172310	1983439
2012-13	2130992	181781	2312773
2013-14	2640938	188801	2829739
2014-15	2945361	196288	3141649

Source: Statistical Hand Book Assam 2012 to 2016

The above table 3 shows that the total number of consumers in state Assam has increased every year during the period 2010-14. In the year 2014-15, the domestic and commercial consumers are 2945361 and 196288 respectively. In the same year, the total number of consumers is 3141649.

6. Rural electrification in Assam

Rural electrification is the process of bringing electrical power to rural and remote areas. As the Rural Electrification Policy notified by the Ministry of Power, Government of India aims to achieve the goals of provision of access to electricity to all households, quality and reliable power supply at reasonable rates and minimum of 1 unit per household per day. The policy also envisages that for the purpose of rural electrification, a village would mean a census village. A comprehensive programme i.e. Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) has launched by the central Government of India to achieve above goals. The Ministry of New and Renewable



Energy (MNRE), Government of India has undertaken implementation of remote village electrification through Non-Conventional Energy Sources.

Rajiv Gandhi GrameenVaidutikaranYojana (RGGVY), a scheme for attaching the goal of provides access to electricity to un-electrified villages and to provide BPL connection to already electrified villages in the state. In Assam, implementation of the RGGVY was started in April 2007. The status of villages electrification in Assam before implementation of the RGGVY was as on 31st march 2007 as number of villages electrified was 18567 and number of un-electrified villages was 8406.

In the budget of 2014-15, DeendayalUpadhya Gram JyotiYojana (DDUGJY) was announced. It envisages feeder separation, strengthening of sub-transmission and distribution network, metering at all levels, including input points, feeders and distribution transformers, mirror grid and off grid distribution network and rural electrification to complete already sanctioned projects. Under DDUGJY, un-electrified 928 numbersof villages have been electrified till date 2016-17.

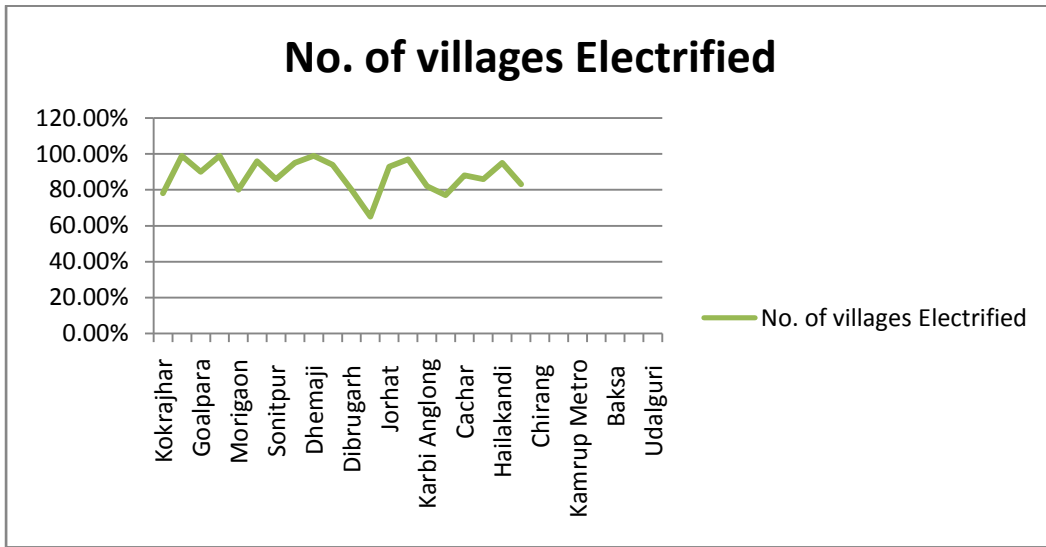
Table 4: District-wise number of villages electrified in Assam in the year 2015-16

Districts	Total number of villages 2011 census	Number of villages electrified	Percentage
Kokrajhar	1068	834	78.%
Dhubri	1091	1083	99%
Goalpara	829	748	90%
Barpeta	835	825	99%
Morigaon	632	503	80%
Nagaon	1412	1354	96%
Sonitpur	1876	1606	86%
Lakhimpur	1184	1126	95%
Dhemaji	1319	1311	99%
Tinsukia	1168	1093	94%
Dibrugarh	1348	1072	80%
Sivsagar	875	573	65%
Jorhat	848	787	93%
Golaghat	1125	1090	97%
KarbiAnglong	2921	2400	82%
DimaHassao	695	536	77%
Cachar	1040	913	88%
Karimganj	936	806	86%
Hailakandi	331	314	95%
Bongaigaon	563	885	83%
Chirang	508		
Kamrup	1068	1240	97%
Kamrup Metro	216		



Nalbari	456	857	75%
Baksa	690		
Darang	561	1338	98%
Udalguri	800		
Assam	26395	23294	88%

Source: Statistical Hand Book Assam 2016



The above table 4 showed that the total numbers of villages are electrified as against the total numbers of villages as per census 2011 in the different districts of Assam in the year 2015-16. It is cleared that 99 per cent of villages are electrified in the three districts i.e. Dhubri, Barpeta and Dhemaji. It is seen that Sivsagar district has lowest number of villages electrified, 65% of villages are electrified. Moreover, most of the districts villages are electrified since majority of districts are indicate that more than 90 per cent villages are electrified i.e. in 12 districts more than 90 per cent of villages are electrified. However, the overall 88 per cent of villages are electrified in the state of Assam.

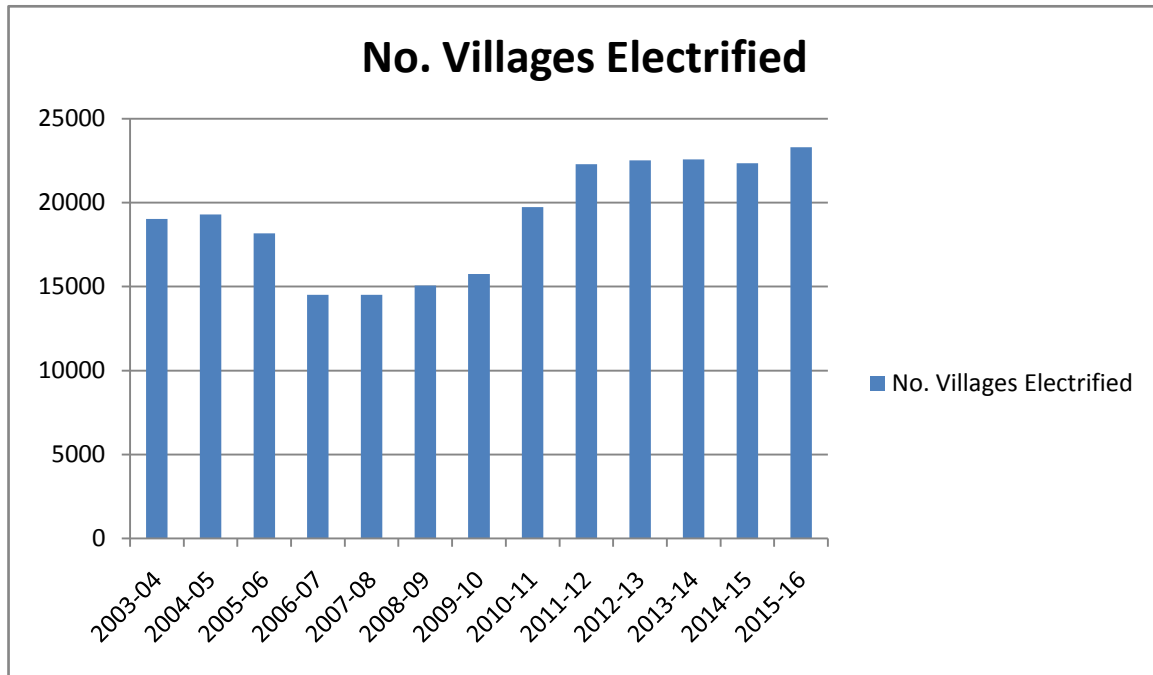
Table 5: number villages electrified in Assam from 2003-04 to 2015-16

Year	Number of villages inhabited census 2011	Number of villages electrified
2003-04	25124	19039
2004-05	25124	19306
2005-06	25124	18168
2006-07	25124	14516
2007-08	25124	14516
2008-09	25124	15066
2009-10	25124	15747
2010-11	25124	19729
2011-12	25124	22294



2012-13	25124	22520
2013-14	25124	22587
2014-15	25124	22352
2015-16	25124	23294

Source: Statistical Hand Book Assam 2006 to 2016



The above table 5 revealed that the total number of villages electrified increased from the year 2003-04 to 2015-16. The total number of villages electrified was 19039 in 2003-04 and it declined to 14516 in 2006-07. But after 2006-07 the number electrified villages are increasing every year due central and state government introducing different programmes for the purpose of rural electrification improvement like RGGVY was launched in the year 2007 and DDUGY was announced in the Assam state budget 2015-16. The total number of villages electrified is 23294 in 2015-16, 88 per cent of villages are electrified as against the total number of villages as per census 2011.



7. Problems of rural electrification in Assam

From the above analysis it is clear that the rural electrification is progressing since the number of electrified villages increased. As per Assam Statistical Hand Book 2016, 23294 villages are electrified in 2015-16. However, in the state of Assam there is still problem faced in rural electrification. The common problems faced by the Assam state in rural electrification are highlighted in the following-

1. Distribution of electrified in rural areas in district wise in the state of Assam is not uniform
2. In Assam, there is theft of electricity since many of households in rural areas are not the registered consumers and so they are the illegal consumers.
3. The number of people without electricity is expected rise in near future due to high rate of population growth.
4. In Assam, many villages are left without electricity due to some major causes like poverty, lack of resources, lack of political will, poor planning and electricity theft.
5. Rural electrification is the potential conflicts with land use and impact on rural environment.
6. The data collection on rural electrification is also faulty or incomplete data.
7. In many rural areas people do not have knowledge of the presence of renewable sources and they use less renewable energy sources such as solar energy.
8. The current state of electricity services indicate signs of crisis and are limited access to electricity for poor, unable to meet peak demand, supply reliability and quality of power.

8. Conclusion

Rural electrification is the key for the growth and development of the rural economy. Without electricity means left the some basic services which are the important in day today life of every individual. The state of Assam is the rural based economy which cannot bring better economy position without rural electrification. In Assam, 86 per cent of population living in rural areas and only 14 per cent of population are living in urban areas. So electricity is the most important in rural areas in the state of Assam since majority of population are living in rural areas.

The rural electrification is progressing since it is founded the total number electrified villages is increased in Assam. The total number of electrified villages was 19039 in the year 2003-04 and it increased to 23294 in 2015-16 which represents 88% of villages are electrified in the state of Assam. However, the present status of rural electrification is not satisfactory since in some rural areas limited access to electricity for poor, unable to meet peak demand, supply reliability and quality of power. That's so why a large number households are still living without electricity in the state of Assam. This problem can be overcome by implementing off-grid projects which can be initiated at small levels so people don't have burden to maintain them and it even don't have any adverse effect to environment or society. Environment effect can solve by the strategies promoting environmentally sustainable power development to ensure generation of green power. The state Government and company must be focus and emphasis in future will be on generation of power in line with global standards and complete harmony with environment and nature.



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