



**PROVISION OF EFFICIENT SERVICE BY THE POWER SECTOR: A CASE
STUDY OF INNOSON VEHICLE MANUFACTURING COMPANY
LIMITED AND ANAMBRA STATE, NIGERIA.**

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ABSTRACT

This study assessed the socio-economic implications of inadequate power supply from the national grid in national development especially in the area of industrialization, sampling was done in the form of questioner in some selected areas in all the Local Government Areas (LGA) of the Anambra state of Nigeria. The study adopted the survey and experimental research design methods in all the selected Towns, at the same time, a descriptive statistic was majorly employed for their analysis. The analysis-result showed that there is significant dissatisfaction about quantity of (POWER SUPPLY) electricity supplied to consumers in various residential areas as well as the industrial areas and even at that, the electricity Distribution Company of Nigeria will come up with estimated bill for each house to pay Power Bills even when there wasn't Power Supply. The implication is that most industries here left the national grid in search of alternative sources of Power Supply to power their industries and this resulted to high cost of production and the national purchasing power had to suffer it in return. Based on the major findings made, the study therefore recommended that (i) Government should as matter of facts, diversify the source of fuel for Electricity (Power) Generating Stations as this will make an easily accessible and available. (ii) Electricity consumers should show patriotism through prompt payment/settlement of electricity bills for continuity, effective and adequate supply in response from the distribution companies. (iii) Government should provide each residential house with Prepaid Meter.

Key Words: LGA, Energy supply crisis in Nigeria, Transmission Company of Nigeria (TCN), IVM, EEDC

INTRODUCTION

Electricity supply has contributed largely in making the world what it is today. Its importance to the masses and industries will never be overemphasized. The use of electric irons, televisions, radios, washing machines, welding machine, computer accessories, refrigerators, video players, cookers, computers systems, fans, air-conditioners, etc. have all made possible through the supply of electricity. In any case, any nation without electricity supply is like a phone without battery, she will remain static. Electricity is the engine block to the development of nations, because industries, small scale businesses, and government institutions depends wholly on it for adequate growth and sustainable development. If growth is facilitated by the placement of the reliable energy supply, the country's capitalists need to build their businesses, guaranteed economic growth assured, since capital, labour, and energy will thus drive production rate, which in response builds the economy because local organizations would be working at

their efficient operating capacities. Energy supply crisis in Nigeria refers to the current failure of the power sector in Nigeria to provide adequate electricity (power supply) to domestic households and industrial sectors [1].

Electricity power generation transmission and distribution are the three stages of delivering electricity to consumers at residential, industrial, commercial and administrative areas. Studies such as [2], [3] have all identified supply of adequate electricity to consumers as the back bone of socio-economic development of any nation. Like any other sector in Nigeria, the power sector has its peculiar problems. In that, the sector is said to have loads of multidimensional problems.

[2] identified two methods of generating electricity namely: Conventional method makes use of prime mover such as petrol engine, diesel engine, steam, while the non-conventional method does not use prime movers.

The inadequate electricity supply in Nigeria, arbitrary billing system, coupled with the high costs and constant scarcity of diesel and gasoline has driven up the costs of production, causing businesses to understaff their organizations and contributing to the high volume of jobs lost in Nigeria. It also creates uncertainty in the future of most businesses because poor access to electricity leads to high costs of production, arbitrary billing might cause them to pull out of the national grid hence leading to higher-priced final goods, in which the market will react positively or negatively to upon presentation. This goes further to affect the growth of global trade, since the international organizations expected to buy certain items at certain prices and wouldn't consider the reason why goods that comes out of Nigeria should be on the high side. Sequel to this, they go elsewhere like Ghana to purchase, by so doing, our export capacity drops, leading to a drop-in revenue. As a result, most firms now focus only on exporting the base materials raw, rather than to build facilities that could process them into the next level and provide millions of jobs to Nigerians in return.

Statement of Problem

Poor power supply in Nigeria has been a major barrier to the growth of our economy. It is on record that in 2015, a privatization approach was introduced by the Federal Government of Nigeria under the leadership of President Goodluck Ebele Jonathan on the expectation that the distribution companies (Discos), the generating companies (Gencos), and the Transmission Company of Nigeria (TCN) would be fully privatized, but what many Nigerians did not know is that it was not the case. The generating companies were privatized, fully and most of them fully own their own assets. Meanwhile, the distribution companies were partially privatized with the government having ownership of 49% of the assets, and the Transmission Companies still remained under ownership of government but with its management contracted out. Now the problem is that the fully privatized generating companies cannot work at full capacity because the transmission companies owned by the federal government cannot transmit more than a certain amount of power considering the capacity of the national grid, meaning that if the privately owned generation companies generate 20,000 MW of electricity and the government owned transmission companies cannot transmit it to the partially privately owned distribution companies, the real power that the country could work with would be very difficult to achieve.

Another problem is that as at the period the distribution companies were privatized, the electricity tariffs were increased before the privatization took place. Then right after investment of millions of dollars into the distribution sector with the sole aim of becoming key players, the court reverted the prices and they

suddenly operated at a loss with the tariffs being pegged at below market price hence the origin of arbitrary billing system.

Some public opinion had argued that the government tricked investors, but then again, no firm who committed to the privatization practice on the distribution end is willing to spend additional money in the form of investment to the Nigerian government that is unstable. It simply shows that the system is completely untrusted and corrupt.

Aim and Objectives

Aim of study

- To ascertain the perception of respondents in terms of electricity supply satisfaction in the study Area.

The objective includes

- To identify the effect of unavailability of power supply to industrial areas
- To investigate the advert effect of arbitrary billing to the public
- To suggest an adequate solution to the government on the privatization process and bureaucratic bottle neck bedeviling the power sector.

Justification of the Study

A study of this magnitude and scope has become very germane considering the importance of adequate power supply in the mix of industrialization requirement. The overall effect of lack of electricity in the Nigeria economy in terms of its effect on international trade micro economy industrial economy as well as rural/urban migration makes this study an apt one.

It is also the view of cycle-like-nemesis befalling the nation. The challenges range from low productivity, closure and youth restiveness and crime. If industries are provided and existing ones empowered by provision of affordable and steady power supply must youths will be gainfully employed into various sectors of the economy. By so doing, violence, crime and kidnapping would have been eradicated or reduced to the barest minimum.

CONCEPTUAL FRAMEWORKS

Electricity development in Nigeria started in the 19th Century, see table 1. when the first-generation power plant was built in Marina, Lagos, in 1898, just fifteen years after its was introduced in England Babalola [4]. The capacity was 60kW. After the amalgamation in 1914, other towns in the country started developing electric power supply system on individual scale. The following major cities thus had a trace of electricity supply in the following order:

Table 1. Major Cities that first received Electricity Power Supply in Nigeria.

<i>State</i>	<i>year</i>
<i>Port Harcourt</i>	1928
<i>Kaduna</i>	1929
<i>Enugu</i>	1933
<i>Maiduguri</i>	1934

Yola	1937
Zaria	1938
Warri	1939
Calabar	1939

Source: Babalola [2]

The Establishment of Electricity Corporation of Nigeria (ECN)

Government and Native Authority (NA) owned systems remained separate operational entities for many years till 1946. In 1946, the Public Works Department control over the operation of the electricity generating plants and distribution in the country ceased to exist. At the same time, the Nigerian Government Electricity Undertaking (NGEUI) was immediately established to take over the assets as well as liabilities of electricity supply in Lagos. In 1950, Electricity Corporation of Nigeria (ECN) was established to take over all the various electricity supply outlets within the Nigeria. On the other hand, the Native Authorities (NAs) continues to manage their respective systems and Niger Dams Authority (NDA) was also established to generate electricity through hydro power systems [2].

The Establishment of National Electricity Power Authority (NEPA)

In April 1972, ECN and NDA had to merge to form a body called National Electric Power Authority (NEPA) and the first manager was appointed in January 1973. This network continued to progress under NEPA, meanwhile, between 1978 and 1983, the Federal Government had to set up two panels of enquiry to find out modalities for restructuring NEPA into an independent unit or toward privatization hence come electrification board to provide electricity to the rural area and new cities [1].

The Establishment of Power Holding Company of Nigeria (PHCN)

By 1999-2005 the new born democratic government under chief Olusegun Obasanjo establishing PHCN through an act with the sole aim of revitalizing the power sector. The objective of the new act is to transfer assets of NEPA to PHCN and this process was tagged privatization. In the same vein, the National Integrated Power Projects (NIPP) was inaugurated in 2004 to be able to speed up and hasten the upgrading of adding more electricity supply to available electricity capacity in the Nigeria [1].

The Privatization of PHCN

The PHCN, as a Company, was unbundled into 18 companies as follows: six (6) generating companies, one (1) transmission company (i.e. Transmission Company of Nigeria-TCN), and eleven (11) distribution companies. The generating companies are Egbin Electricity Generating Company (EEGC), Sapele, Ughelli, Afam, Shiroro and Kainji. There are also some new Independent Power Producers under the auspices of the Niger-Delta Power Holding Company (NDPHC). The 11 distribution companies are Abuja Electricity Distribution Company (AEDC), Benin Electricity Distribution Company (BEDC), Eko Electricity Distribution Company (EkEDC), Enugu Electricity Distribution Company (EnEDC), Ibadan Electricity Distribution Company (IbEDC), Ikeja Electricity Distribution Company (IkEDC), Jos Electricity Distribution Company (JEDC), Kaduna Electricity Distribution Company (KdEDC), Kano Electricity Distribution Company (KnEDC), Port-Harcourt Electricity Distribution Company (PHEDC), Yola Electricity Distribution Company (YEDC). Now, the Federal Government has 100% of

the transmission company, meanwhile in generating companies it holds 20 per cent (with 80 per cent of equity sold to private investors) and currently in the distribution companies, eleven of them that have been sold, government only sold 60 per cent of its equity to the private sectors while holding 40 per cent. In other words; the transmission company of Nigeria (TCN) is 100 per cent owned by government, but in the generating companies, (GENCOs) 20 per cent are owned by government while 80 per cent are owned by the private sectors. For DISCOs, 60 per cent owned by private sector, 40 per cent owned by government. The TCN is own by the government but under the control of a Canadian company known as Manitoba Hydro Company. In September 2013, the Federal Government handed over certificates of ownership to prospective private investors. Since then the generation and distribution of electricity have been transferred to the private investors.

Implications of Inadequate Power Supply

Allcot.et.al [2] showed that power shortage reduced average output of median manufacturing firm by about 5% but in Nigeria, such insufficient supply has been blamed for reduction of manufacturing output by 45%. This is indeed very significant regrettable and worrisome.

[5] analyzed the economic cost of power outages in Nigeria using the revealed preferences approach on business survey data, he estimated the marginal cost of power outages to be in the range of 0.94-3.13 per kwh of lost electricity collaborating with a [5], [6] described the power supply in the study area as ‘epileptic’ and ‘dismal’ performance respectively, while [1] see it as a ‘crisis’ situation with serious implication for social and economic lives. Surveys show that only 6.2% of firms in the manufacturing sector exclusively rely on the grid electricity [5]. With majority depending on independent power generating sets this makes cost of running business very high in Nigeria.

Data Presentations and Analysis

A typical electricity power supply questionnaire data in four L.G.A (24 communities) was collated. The data was imputed into excel sheet and the figures was analyze as shown subsequently.

From the research carried out, the research found out that Innoson Vehicle Manufacturing company (IVM) has pulled out of the national grid due to arbitrary billing that EEDC brings to the company’s table every month even without power supply to the company in some weeks and months.

The questionnaire was distributed between 100 to 250 persons depending on the population of the area covered and the result is as shown in the following tables.

Table 2. Statistical Survey and Experimental results of Respondents on Electricity Distribution Satisfaction and Availability of Pre-paid meters in each Town in the LGA of Anambra state.

<i>S/ N</i>	LGA	TWONS	SWP S	NSWP S	NESNUW PS	AWFP M	TOTAL PERSONS	NUMBER OF
/	AGUATA	EKWULOBIA	5	223	22		250	
		IGBOUKU	0	154	54		208	
		ISUOFIA	2	85	7		94	
		UGA	0	112	6		118	

		UMUCHU	3	65	0		68
		EZINEFITE	2	74	8		84
2	ANAMBRA EAST	OTUOCHA	0	67	7		74
		UMUOBA ANAM	4	87	0		91
		AGWULERI	8	92	6		106
		UMULERI	5	113	11		129
		IGBARIAM	8	132	17		157
		NANDO	0	64	2		66
3	ANAMBRA WEST	NZAM	10	118	12		140
		UMUEZE ANAM	0	62	3		65
		MIATA ANAM	1	43	12		56
		OROMATETITI ANAM	4	62	6		72
		INOMA	6	83	13		102
		UMUEKWU ANAM	7	111	12		130
4	ANAOKHA	AGULU	13	165	14		192
		NENI	2	153	2		157
		OBELEDU	5	172	2		179
		ADAZIANI	9	113	8		130
		ADAZINUKWU	1	92	9		102
		AKWAEZE	0	117	11		128
5	AWKA NORTH	ACHALA	0	153	9		162
		AMANUKE	4	97	8		109
		AMANSI	1	132	4		137
		URUM	2	121	13		136
		UGBAKWU	3	116	16		135
		ISU	2	53	22		77
6	AWAKA SOUTH	AWKA	25	277	32	87	334
		AMOBIA	1	132	12	13	145
		NIBO	2	155	18	3	175
		NISE	11	187	12	6	210
		EBENEBE	2	169	14	14	185
		UMUCHI	1	197	16	7	214
7	AYAMELUM	ANAKU	7	157	8		172
		OMOR	6	132	8		146

		IFITE OGBARU	11	164	14	189
		UMEJE	5	177	23	205
		IGBAKWU	6	169	17	192
		UMUNGBO	9	123	13	145
8	DUNUKOFIA	UKPO	18	221	17	256
		UMUDIOKA	15	195	16	226
		IFITEDUNU	21	197	14	232
		UMUNACHI	2	163	13	178
		UKULU	14	185	17	216
9	EKUSIGO	OZUBULU	27	231	17	275
		ORIFITE	3	173	12	188
		IHEBOSI	5	186	15	206
		ICHI	9	188	14	211
10	IDEMILI NORTH	OGIDI	12	202	18	232
		OBOSI	27	234	17	278
		OGBANIKE	15	194	15	224
		NKPOR	12	172	5	189
		DRAUKWU	8	144	9	161
		EZIGBO	4	73	12	89
11	IDEMILI SOUTH	OJOTO	15	116	6	137
		ALOR	38	79	18	135
		IDANI	18	86	4	108
		UKE	3	87	7	97
		OBA	5	65	13	83
		NNOBI	13	96	7	116
12	IHALA	IHALA	16	131	6	153
		NBOSI	5	78	17	100
		UBAHEKWEM	12	97	13	122
		OKIJA	5	84	18	107
		ULI	16	76	28	120
		OKOHIA	14	68	24	106
13	NJIKOKA	ABAGANA	13	78	13	104
		NIMO	6	86	17	109
		ABACHA	12	79	6	97
		ENUGUKU	12	89	5	106
		NOFIA	13	75	7	95

		ENUGUAGIDI	12	67	8		87
14	NNEWI NORTH	OTOLO	28	181	32	76	241
		URUAGU	24	191	23	8	238
		UMUDIM	19	220	31	47	270
15		NNEWICHI	29	221	23	89	273
	NNEWI SOUTH	UKPOR	23	212	31		266
		AMICHI	32	131	3		166
		OSUMEYI	8	198	5		211
16		EZENIFITE	23	176	23		222
		EBENATOR	12	98	23		133
	OGBARU	ATANI	12	181	12	131	205
		OHITA	15	171	8	22	194
		ODEKPE	12	169	4	7	185
		NMUNANKWOR	15	154	15	18	184
		AKILI	4	121	3		128
17	ONITSHA NORTH	GRA	54	212	8	196	274
		OMOBA FACE 1	65	145	3	187	213
		OMOBA FACE 2	68	172	9	165	249
		UGWUNAKPAMK PA	92	169	8	87	269
18		AKPAKA	87	131	5	63	223
	ONITSHA SOUTH	FEGGE	141	187	13	223	341
		ODAKPU	112	195	9	160	316
		WOLIWO	147	176	4	143	327
		OKPOKO	114	153	8	65	275
		BIDA	93	147	3	47	243
19	DRUMBA NORTH	AJALI	15	186	17		218
		OKO	10	182	19		211
		OFUMA	14	123	32		169
		AMOKPALA	32	143	15		190
		NANKA	21	156	3		180
20		NDIOWU	7	121	11		139
	DRUMBA SOUTH	UMUNZE	24	197	7		228
		EZIRA	12	112	9		133

2/		ISULO	9	163	11		183
		NAWFIJA	7	167	12		186
		AKPU	3	151	15		169
		NTEJE	12	221	12		245
		OGBUNIKE	16	198	7		221
		OKWUZU	9	173	5		187
		UMUNYA	7	189	9		205
		NKWELE	8	176	15		199

Source: Fieldwork, 2019

RESULTS

The graphical representation of the collated data is as shown in the fig. 1-7 below for few LGA of the Anambra State. Considering table 2, the few selected LGA are as shown in the graph with the satisfactions as indicated by the plot.

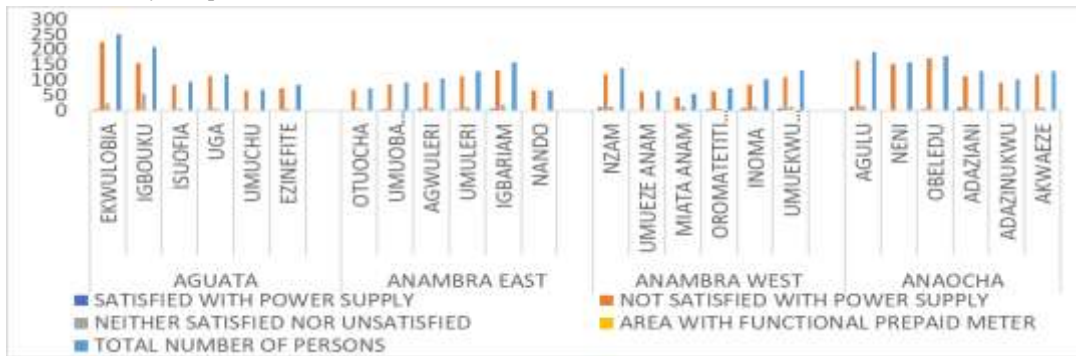


Figure 1 shows statistics of four LGA: Aguata, Anambra East, Anambra West, and Anocha multiple chat



Figure 2 shows statistics of four LGA: Awka North, Awka South, Ayamelum, and Dunukofia multiple chat



Figure 4 shows statistics of four LGA: Ekusigo, Idemili North, Idemili South, and Ihiala multiple chat

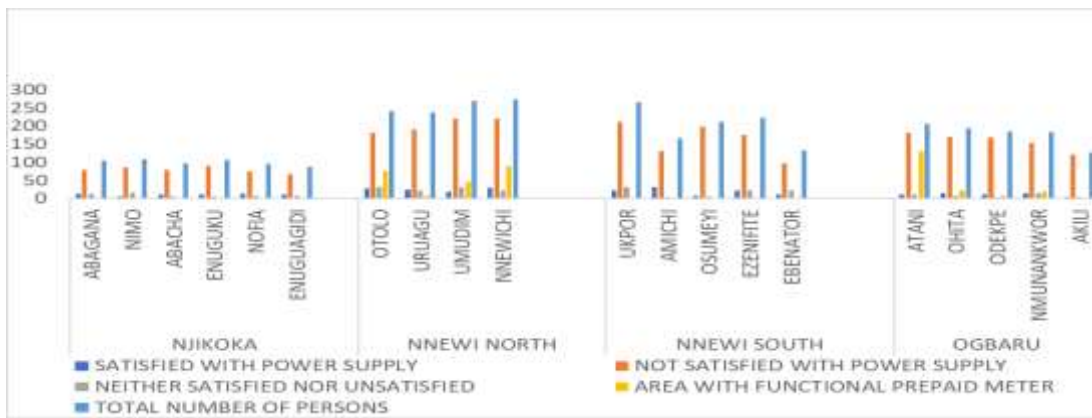


Figure 5 shows statistics of four LGA: Njikoka, Nnewi North, Nnewi South, and Ogbaru multiple chat

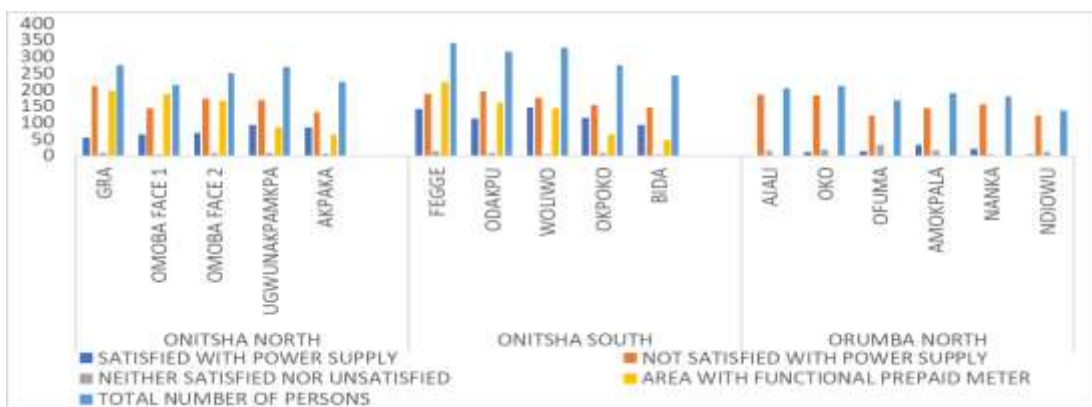


Figure 6 shows statistics of Three LGA: Onitsha North, Onitsha South and Orumba North multiple chat



Figure 7 shows statistics of two LGA: Orumba South and Oyi, multiple chat

DISCUSSIONS

While considering the data collated from various randomly selected Local Government Areas in Anambra state, the analysis clearly shows that the power distributed in most town is generally poor. But despite the poor power supply to these areas, at the end of every month the Distribution Companies (DISCOS) i.e. Enugu Electricity Distribution Company (EEDC) will issue estimated bill to its consumers. The EEDC has failed or refused to install prepared meters to its consumers regardless of the hue and cry by customers for Pre-paid Meter System of billing. However, some of the Commercial Cities within the State like Atani, Ohita, Odekpe, Nmunankwor, GRA, Omoba Face 1&2, Ugwunakpamkpa, Akpaka, Fegge, Odakpu, Woliwo, Okpoko, and Bida, can be gleaned from the sample data that power distributions are mainly stable within these areas fixed with Prepaid Meter since the billing system is pay as you consume. The advantage of the Prepaid Meter Billing System over the Estimated Billing System is that consumers only pay for the power consumed unlike the Estimated Billing System adopted by the officials of EEDC wherein consumers pay an estimated bill which is usually issued on the whims and caprices of the officials of EEDC. This method adopted enrages the consumers who continue to pay bills issued to them whether or not there is power supply. The epileptic power supply and non-transparent estimated billing system have negatively affected a lot of industries. For instance, Innoson Vehicle Manufacturing Company (IVM) decided to pull out of the national grid. The company complained that initially when they started operation, the government under President Goodluck Ebele Jonathan facilitated the provision of 132KVA line to power the company machinery in the bid to reduce the cost of production and with a lower electricity cost per month. But immediately at the inception of President Muhammadu Buhari's government in 2015, directive was issued against the standing order and policy implementation by immediate past minister of power and Minister of Power increased electricity tariff, thereby triggered electricity tariff, hence within 2-month, the company received high estimated bill. Being a profit-making venture, they consulted experts to analyze the cost difference between internally generated power supply using diesel engine and that from the national grid, the result showed that internally generated power supply was much cheaper than the arbitrary bill from the national grid hence Innoson pulled out of the national grid.

CONCLUSIONS

The supply of adequate electricity to consumers is the back bone of any nation and Nigeria is not an exception. The power sector in Nigeria has multidimensional problems. These factors are seriously affecting the performance indices of electricity supply/utility in most parts of the country and this study area is not an exemption.

From the findings of the study, it is obvious that estimated billing system adopted by EEDC is a way proposed to extort money from the consumers without considering the service provided per month. The tariff on domestic and indigenous companies is usually very high and it is not suitable for the survival of their companies, hence most of the firms have left/abandoned the national and line for self-generated sources of power. The absence of prepaid meters in most households in the study area has also worsened the situation.

It is therefore germane at this point to note that to maintain adequate power supply to consumers in any part of the globe is a very challenging task which requires dedication, political-will and over-all commitment of various stake holders. Having established these facts, the researchers thereby posit the following recommendations.

RECOMMENDATION

- The Government should diversity the source of fuel for electricity generating stations, since Nigeria has abundance coal reserves, Uranium, Bio-mass and wind potentials. All these can be used for generating of electricity instead of relying only on gas and hydro potentials.
- The loads on transmission and distribution transformers should be reduced. This is in order to trim down the number of consumers per transformer to the ratio of about 10 consumers to 1 transformer.
- Illegal connections and vandalization of equipment should be discourage by all state holders.
- Electricity consumers in the study area should show patriotism through prompt settlement of electricity.
- A-consumer-friendly billing system should be developed by the appropriate government agencies.
- The bureaucracy surrounding the procurement of electricity meters should be jettisoned for average consumers to have easy access to such meters.

NOMENCLATURE

LGA -: Local Government Area

SWPS-: Satisfied with Power Supply

NSWPS-: Not Satisfied with Power Supply

NESNUWPS-: Neither Satisfied nor Unsatisfied with Power Supply

IVM-: Innoson Vehicle Manufacturer

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