Master’s degree thesis

LOG950 Logistics

Source of Market and Government Failure in Power and Industrial Sector in Nigeria: A case Study on Lekki Free Zone

Adebowale Sheriff Adekoya

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Abstract
This Master thesis focuses on lack of Industrial and economy development in Nigeria, which was due to market and government failures in most sectors of the economy over the years. This report explains some of the critical problems that led the country to the stage it was today. Over the decades, Nigeria is known as one of the strongest countries in Africa, economically and other areas, such as her role in supporting other neighboring countries in West Africa, which makes her to be a member of the ECOWAS, the African Union etc. Businesses and Trades Nigeria had with this regions, the continent and the world in general has reduced, which was due to lack industrial and infrastructures in place for the country to develop and manage her economy, failure of the government to invest and develop various sectors of the economy over the years had made the country to be struggling but economically and financially.
One of the major problem the country is struggling to tackle over the years is the power sector. The need for government and the country to solve this problem is now, as this is the backbone of industrial development of an economy. For a country like Nigeria that wants development in manufacturing, trade and investment, that plans on attracting foreign investor to the country and have a stable progressive economy. This thesis will present some of the problems the country is facing, its challenges and ways to assist the government in tackling it through some useful recommendations.
Keywords: Government, economy zone, failure, power sector, industrial sector, corruption, economy
Acknowledgement

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<tr>
<td>CADF</td>
<td>China Africa Development Fund</td>
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<td>CALIC</td>
<td>China Africa Lekki Investment Company</td>
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<td>CFTZ</td>
<td>Calabar Free Trade Zone</td>
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<tr>
<td>CCECC</td>
<td>China Civil Engineering Construction Corporation</td>
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<td>CNG</td>
<td>Compressed Natural Gas</td>
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<td>CRCC</td>
<td>China Railway Construction Corporation</td>
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<td>CSECC</td>
<td>China State Engineering Construction Corporation</td>
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<td>DISCO</td>
<td>Distribution Company</td>
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<td>ECN</td>
<td>Electricity Corporation of Nigeria</td>
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<td>ECOWAS</td>
<td>Economic Community of West African States</td>
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<tr>
<td>EPZ</td>
<td>Export Processing Zone</td>
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<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>FT</td>
<td>Foreign Trade</td>
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<td>FTZ</td>
<td>Free Trade Zone</td>
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<td>FZE</td>
<td>Free Zone Enterprise</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GE</td>
<td>General Electric</td>
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<td>GENCO</td>
<td>Generating Company</td>
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<td>IPP</td>
<td>Independent Power Provider</td>
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<td>LDC</td>
<td>Local Distribution Company</td>
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<td>LFZM</td>
<td>Lekki Free Zone Management</td>
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<td>LFZP</td>
<td>Lekki Free Zone Port</td>
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<tr>
<td>LNG</td>
<td>Liquefied Natural Gas</td>
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<td>MAN</td>
<td>Manufacturing Association of Nigeria</td>
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<tr>
<td>MOFCOM</td>
<td>Ministry of Commerce</td>
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<td>MOU</td>
<td>Memorandum of Understanding</td>
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<td>MW</td>
<td>Mega Watt</td>
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<td>MYTO</td>
<td>Multi Year Tariff Order</td>
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<td>NDA</td>
<td>Niger Dam Authority</td>
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<td>NEPA</td>
<td>National Electric Power Authority</td>
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<td>NEPZA</td>
<td>Nigerian Export Processing Zone Authority</td>
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<td>NERC</td>
<td>Nigerian Electric Regulatory Commission</td>
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<td>NNPC</td>
<td>Nigerian National Petroleum Corporation</td>
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<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
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<td>OGFTZ</td>
<td>Ogun Guangdong Free Trade Zone</td>
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<td>OGFZA</td>
<td>Oil and Gas Free Trade Zone Authority</td>
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<tr>
<td>PHCN</td>
<td>Power Holding Company of Nigeria</td>
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<td>PPP</td>
<td>Public Private Partnership</td>
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<td>REB</td>
<td>Rural Electrification Board</td>
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<td>SAP</td>
<td>Structural Adjustment Program</td>
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<td>SEZ</td>
<td>Special Economic Zone</td>
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<td>TCN</td>
<td>Transmission Company of Nigeria</td>
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1. INTRODUCTION

Globalization has helped bring development to the world, especially to the developing countries. Some of these countries have been able to use free trade zone to better develop and improve on not only trade within themselves and their neighboring countries but, outside the continent and around the global world. Free Trade Zone (FTZ) is an area within which goods maybe landed, handled, manufactured or reconfigured, and re-exported without the intervention of the customs authorizes (Britannica, 2016). They do not just improve on trade of goods and services among people but were able to use the opportunity to develop and improve on other aspect of their economy such as manufacturing, labor, job creation and infrastructural development around this countries that participate in the free trade zone.

Many authors and scholars have analyzed the role and impact of free trade zones. The difference between FTZ to Special economic zones (SEZs) is that FTZs are smaller to SEZs and they are limited to certain trade barriers. It can be an effective instrument to promote industrialization if implemented properly or in the right context, as shown in some of the emerging countries, particularly those in East Asia (Zeng 2015).

FTZs are mostly established with the aim of achieving one or more of the following four policy objectives (Madani 1999, Cling and Letilly 2001, Akinci and Crittle 2008, Zeng 2010, Aggarwal 2010, Farole and Akinci 2011, Fuller and Romer 2012, OECD.) (i) attracting foreign direct investment (FDI); (ii) serving as “pressure values” to alleviate large-scale unemployment; (iii) supporting a wider economic reform strategy; and (iv) acting as experimental laboratories for the application of new policies and approaches (Zeng 2015).

But without the proper policies in place and effective management this zones might not be successful or achieved the goals of developing these regions and wellbeing the citizens deserve. Especially in the case of Africa where vital policy and management are not in place to meet the standard of projects of this magnitude. According to (Zeng 2015, Farole and Akinci 2011, Stein 2007) they stated that, Sub-Sahara Africa’s experience with special economic zones have been relatively poor, except in few countries, such as Lesotho, Kenya, Madagascar, Mauritius, and South Africa1. And that the key challenges they face include poor regulatory and institutional framework, lack of effective strategic planning, weak governance and implementation capacity and inadequate infrastructure, among others.

The major questions to ask are, why is the continent still struggling in developing their region, what needs to be done to bring out the continent of Africa from back frame of development and which of the critical areas is affecting the development of the region? (E.g. power sector which is electricity has been one of the major cause affecting the success of development in the region). Some of the big countries in Africa, such as Nigeria are the ones that supposed to lead by example in terms of development for others to follow. But

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1 Free Trade Zones (FTZs) or Free Zones (FZs) are type of economic zones which are similar to Special Economic Zones (SEZs). In this thesis the FTZs will be class as zones under the SEZs. This will help the reader to understand the difference between FTZs, Export Processing Zones, Industrial Zones, etc. which are all small to SEZ.
Nigeria is one of the countries still lagging behind in terms of abiding on the policy implementation of the land, poor management of resource and proper infrastructure, which has been lacking. This is due to corruption (illegal malpractice) which has been the bedrock of the country’s political system.

The task here is to investigate the effect of management and policy implementation on infrastructure development in Nigeria, and the industrial sector of the country, the challenges, and lessons that Africa, most especially Nigeria can learn from other developing countries such as China, Malaysia, Singapore etc.

There have been literatures by authors on FTZs, its effects/impacts from different scholars, and they have also been literatures on management and policies made, especially in developing countries, but one could argue that, they are few or none that have touched on the management and policies that influence industrialization such as that of FTZs, especially in developing countries, where management and policy making will have an impact in the development of these countries (or regions) are not put into perspective. Developing regions mostly in Africa, where government officials and the citizens ignored and fail to understand the impact of infrastructural development, believing it is not really their business if the infrastructures in these industrial sectors in the country are properly managed and maintained as long as they have put in place few infrastructures in some sectors of the economy.

The aim of this thesis is to look into the effect of management and policy on FTZs and other critical sector such as the power sector in Nigeria as these is one of the back bone to infrastructural and economy development and how to improve on it, challenges and recommendation. The findings in these research is how lack of management and failure to abide by the policies that will help industrial sectors of the economy to develop are either ignored or efforts to put them in place are not there by mostly the people in power due to certain reason such as personal interest. The strategy by the government to improve the economy of the country through FTZs (and other zone projects i.e. such as SEZs) has started for years. The Nigerian FTZ regime has been in place since 1992, and over the 23 year period since then it has not delivered the expected results in terms of investment, employment and diversification of economic activity. Previous government has implemented the use of FTZs and SEZs as ways to develop the infrastructure and economy of the country, but due to mismanagement and lack of proper framework in place on the policies both by the government and its people, including the private providers (i.e. investors), has led to the poor effect of most past project of this kinds. Cases of the likes of the Calabar FTZ, and the oil and gas FTZ has not been able to live up to the standards of other similar projects in other developing countries over the years and with no results to show for it. In some instances companies have started moving to neighboring countries such as Ghana and Ivory Coast, where better policies and management are a bit fair there and are in place with stable electricity for this companies to do their business, especially towards the industrial sectors which motivates FDI. With the new government in power and their promises, this is the time they should enforce...
the laws on everyone, government official and the citizens living in the country, and for them to also focus more on management, infrastructures, securities and implementation of policies in place, in order to also bring back the confidence of foreign investors and improve on the FDI to the country. With the recent drop in oil price, which is the major source of income and revenue for the country. It is time for the government and its people to put it (dependence on oil) aside and make use of these opportunity to invest in other natural resources, man-power, and materials available; and channel it through projects such as the FTZs (and other zones such as SEZs).

1.1. Objectives for the Thesis, Problem definition, Research questions, and Limitations

The aim of this study is how the use of proper management policy and reforms can help develop the industrial sector in Nigeria, such as the use of Free Trade Zones. Also, the aim is to examine the impact of the power sector in industrial development in Nigeria.

1.2 Problem Statement

The lack of management and policy drive of the country has been one of the issues that has been making it not moving (forward) at the pace required of it. They have been few solution such as implementation of FTZs which has been use as one way to stimulate the growth of the economy. Most firms and producers all over the world have had undisputed view on the reduction of tariffs, duty costs in countries, good electricity power to operate in regions (or countries) where they trade. They have been solutions to some of this problems such as to the implementation made by the US government on zones similar to this and that of the free trade area of the European Community. Also, most countries had developed FTZs as a tool to attract FDI and to gain financial ways to develop domestic infrastructures and improve in other sectors of their economy (Papadopoulos 1987). Free trade has been promoted by economist since the time of Adam Smith, but it should be noted that a FTZ does not represent free trade. On the contrary, it is an enclave in an economy where trade are restricted (Facchini and Willmann 1999, Din 1994, Miyagiwa 1993).

The author would argue that, Nigeria is such a huge economy and it is difficult for the government to develop all various sectors of the economy at the same time. By so doing, the need for Government to target their effort as to come in place, and that is the reason why operating the free zone will help actualized the change. The free zone are the model project for economy development, with the hope that it will have a multiply effect in the economy and also that it will be a pioneering activities that others will follow. Innovations introduced in the free zones are later on spread out throughout the economy. This are kind of prestige projects for the government and they are spearhead of their economic development efforts, which
is also the reason these areas of economy development is where they are doing their best to improve infrastructure. If this is the model economic development area, it should also be the model for the best that Nigeria Government can offer with respect to electricity supply for example. If they are failures here in the FTZ, then definitely it will not be that better outside the free zone. In this case, it can serve as a litmus test of what is the Nigerian economy delivery in terms of, for instance the utilities.

This Master thesis is researching on how FTZ policy in Nigeria can be properly implemented. By addressing the failure on the provision of infrastructures to the FTZs, as this might be due to source of failure in the use of the FTZ policy. Developing countries, such as Nigeria should implement the right policy and reforms that will help develop FTZs in the country, in order to reduce wastage on both human (Job seeking graduates for instance) and natural resources (i.e. by making use of the abundant resources in the areas like coal, oil, gold etc. to improve for instances electricity in the country) and also, to help bring FDI into the country through private investors, improve and increase in the manufacturing sector; especially on areas where the country need this manufacture products such as local production of electricity components. Nigeria has been known to be a country with huge population, abundant of natural resource and good people, but are lacking in infrastructure and regional development.

The research will be done through the use of a case study of the Lekki Free Zone, in Lagos Nigeria.

The problem could be failure to implement the FTZ policy, and lack of infrastructures to support the FTZs.

1.3 The research questions

The need for more infrastructural development in the industrial sector is paramount for the growth of a country. In order to have a vibrant economic zone and to be able to achieve the vision 2020. Nigeria as a nation are aiming, they must be basic facilities in place, such as access to electricity, which also serves as the basic form of energy supply to industries and the masses is vital for the development of a nation’s economy.

This study is aimed at seeking answers to the following questions.

Power sectors (electricity) has been one of the major issue in the country, how can it be reformed, developed and managed?

How can FTZs and other economic zones in the country be developed and maintained in order for them to operate successfully like the ones in other developing nations that have adopted the project?

On power sector reform implementation, how has it impacted on the electricity market in the country, and should the Government have control of the electricity market in the country?

Even though it is expensive for a single firm to invest in power grid and transformers for the transmission of electricity, what is the solution on the expansion and investment in the power sector of the country?
With the power sector privatized, what has the impact been to the sector, the industrial sector and to the country in general?

1.4 The Objective of the research

How to assist the Government with this research in solving the problem of infrastructure and industrial development through the use of FTZs, providing knowledge and advise that would help improve other economic sectors such as the power sector, as part of the ways in moving the economy of the country forward.

Also the research aim on how the FTZs, can as an industrial investment (or project) help develop logistics and supply chain in the country through proper channels that will positively have an impact and make other sectors work effectively. The country has gone through difficult times in the past, and with the new government in power, and the promises made by them to develop and improve the standard living of the people in the country, this research can go a long way in assisting them develop the country through diversification in the country and reduce the over dependence on oil.

1.5 Research Methodology

Problem Faced

During the process of carrying of this research study, the author faces some problems, which prevented him from achieving the desired result.

The following factors have limited the effectiveness of this research study:

**Finance and Budget Information:** Lack of financial and budget information that needs to be put in place for research and development in some sectors such as the power sector in Nigeria are not available, also, lack of information on the FTZs in Nigeria, has limited the effectiveness and how important the use of FTZ in the country. As awareness and adequate publicity are not there for people to understand its values, which has limited this research to certain aspect, because there was no adequate access on information of the financial aspect of the sector (power sector), and that of the economic zones, and this have limited the research on Government investment in the power sector.

Therefore the author has decided not to go in full details about the financial aspect of the power sector and the company(ies) involved.

**Number of Respondent:** It has been difficult in getting information, this is due to reluctance of some officials providing sensitive information about the companies under the power (electricity) industry. Also, information about certain issues relating to the power company were not readily available and even when
they are, these information are highly protected, similar to names and positions operating in these companies.

The case goes also for the companies operating at the Economic zones such as the Free zones is most part of the country. Their response for source and information proof difficult to get as they are also either not responding or are reluctant to assist with necessary information.

1.6 Theoretical Framework

Economic Development can involve the creation of theories and methods that can aid the determination of policies and practices, which can be implemented at either in the domestic or international level.

Structural Change Theory: Is focused in changing the economic structure of developing countries from being primary of subsistence agricultural practices to being a “more modern and more industrial diverse manufacturing and service economy”. (Lewis 1954) two-sector surplus model, gives views on agrarian societies as consisting of large of surplus labor increasingly moves away from the agricultural sector to the industrial sector, been utilized to spur the development of an urbanized industrial sector. While on the other hand, (Chenery 1960) patterns of development approach, which holds that different countries become wealthy through different trajectories. Since the reallocation of labor from the agricultural sector to the industrial sector is considered the engine of economic growth. Many developing countries implement policies that often promote the industry and neglect agriculture. (Chenery and Syrquin 1975), empirical works concludes that process of structural changes does recognize that pattern of development can be different among countries, which is dependent on the countries’ particular set of factors including a country’s resources endowment and size, its government’s policies and objectives, the availability of external capital and technology, and the international trade environment.

International Dependence Theory: As a reaction to the failure of earlier theories to lead to widespread successes in international development. International dependence theory’s view obstacles to development as being primary external in nature, rather than internal. These theories view developing countries as being economically and politically dependent on more powerful, developed countries that have interest in maintaining their dominant position.

To classify a country as developed or developing economy varies with opinion. Different nations are at different stages of economic development. Some nations are highly industrialized, while others are in the process or focus on national way of developing their economic through agricultural or natural and mineral resources available within their reach (Alawiy 2011).

Development of an economy requires coordinated efforts in many sectors at the same time. The use of FTZ by the government can serve as a driving tool for economy development, by focusing these coordinated efforts in a small geographic region, with a limited number of business sectors.
The strategic role and policy of generating electricity for the development of an economy has always been appreciated by most developed nations, like France, Germany, and Italy. The listed countries which are mentioned, are well and truly developed countries that sustain the supply of energy to its environs for the purpose of industrial development (Alawiye 2011). The power sector provides a platform for economic development; electricity has brought about development in all area of the economic zones and in all area of productions and services (U.S Department of State, 2011).

Over the years, they seems to be a strong correlation between electricity and economic development. The electricity industry in most African countries are in poor state that needs huge amount of human and financial resources to restructure the industry. Some countries in the Sub-Sahara Africa has been able to improve through the reforms made in the sector (i.e. South Africa), while they are still some challenges in the transition process in the reform. (Woo, Lloyd, and Tishler 2003) identified market power, rising marginal cost and financial insolvency as some of the causes of such problems.

1.7 Research Strategy

Research is a vital way of approaching a situation in both business and academic activities, they are lots of methodologies that can be used in the field of researching. It is an application of scientific procedure towards acquiring answers to wide varieties of research. However, even though it is a common tool for businesses and academics, there is no real consensus in the literature that aims to depict “the one best way” in regards to how a research should be defined. For example, this is partly due to the fact that there is a broad spectrum in regards to what can be researched. Methods used in gathering the empirical can be categorized into two groups: quantitative and qualitative methods. In carrying out this research, the study will cover the following important area, collection of both primary and secondary data.

Collection of data

Collection of data can be through the primary and secondary data. In this report both data will be use.

Primary Data:

This are data generated from the main (Original) source. The primary data in this report are firsthand knowledge gathered by the author from respectively companies linked with this study. In carrying out this data collection, detailed questions were asked by the author from the Marketing Manager Lekki Free Zone, Lagos. The information details from the marketing manager was given within 2 separate times, which are in January 2016 and March 2016.

In data collection, the use of random sample method in selecting companies was carried out on an industrial area in Victoria Island. Contacts to this companies were done through calls and mails. Questionnaire were
also sent to these companies through e-mail as well. On the result of the data collection carried out, their response wasn’t encouraging as none were willing to answer the questionnaires. Some of the reasons which I found out after contacting these companies later was that, they do not have the time to answer my questions as they are searching for ways to the current economy situation by battling and fighting the hardship crisis affecting them, as am being told problem with electricity, lack of petrol etc. Second reason is that some of this companies contacted no long function or operate at the exact location and contacts, which makes it difficult to get a feedback from them. And lastly, in the zone few of the companies that are operating at the zone that were contacted are Chinese firms and due to lack of communication they were not able to answer the questionnaire, and the ones that replied explain that their superiors/boss are on holidays as an excuse, other stated that they cannot help as they do not trust me.

**Secondary Data:**
Secondary data are data gained from existing sources, literature, databases and internal company records. This are qualitative and quantitative materials that are collected directly in relation to this research study, these materials include Nigerian Electricity Regulatory Commission (NERC), Eko Electricity Distribution Plc (EKEDP), and Lekki Free Zone Development Company (LFZDC). Other source from various literatures, data from the internet were also considered for this thesis. Other energy related information on industrial and infrastructural development like sources from OECD, World Bank etc. are also use by the author for the purpose of this research.

1.8 The structure of the Thesis

For the structure of this thesis, there are six different chapters that will be discussed in this report, they are stated below:
Chapter One: This chapter explains and examines the introductory part of the study, which contains introduction, the aims, objectives and the research questions. The scope and limitation of the study, also discussed in the first chapter.
Chapter Two: Provides the theoretical approach applied to improve economic and industrial development of economic zone (i.e. FTZs). It will also touch on the best approach to apply on the case of power sector crisis on industrial sector in Nigeria.
Chapter Three: These section will focus on the FTZs, the use of FTZs as a model to spur the industrial and infrastructural development of the economy; the FTZs on the Nigerian Perspective, the benefit and problem of power (electricity) at the FTZs and in Nigeria industrial sector.
Chapter Four: Description on one of the critical problem affecting economy development in Nigeria, which is the power sector. Electricity contribute to the development of an economy as shown in both developed and developing countries. This is one of the major reason while focus is been made on the Nigerian power sector and its impact to the economy. This will also include the overview of the power sector in Nigeria; the market structure of electricity in the country and the challenges.

Chapter Five: This chapter is a case study on the Lekki Free Zone; an overview about the zone; the challenges especially in the area of infrastructure development such as power sector and others.

Chapter Six: Final chapter concludes the report through suggestions, possible policy implementation, recommendation and conclusion.
Chapter Two

2. Theoretical Approach

2.1 Theoretical Approaches:

**The neo Classical approach:** The views that economic zone growth is the increase of productivities to generate and accumulate resources. It argues that output growth is a result of these factors of production ([Pike, Rodríguez-Pose, and Tomaney 2007](#)). The neo classical economic theory view Free Trade Zones (FTZs) as an approach to open and free trade policies set up with the objective in developing and promoting trade. According to this theory, free trade is the best policy for a government that plans on developing its economy to adopt. If free trade is not politically successful at economy level, some welfare gains may be obtained through other avenues of economic zones. When viewed from static perspective, FTZs are distortionary trade instruments which changed method or ways of trade patterns, promote unfair competition between domestic and FTZ companies in the regions; serves as FDI for the government and the economy. It argues that FTZs are use when the government plans to diversify, expand regions and improve on the economy through policies and reforms ([Aggarwal 2010](#)). Their roles should therefore be improved and encourage, with government policy favoring these FTZs with minimal government intervention. They lose their significance as countries implement country wide system trade, microeconomic and exchange rate reforms ([Madani 1999](#)). She, further stated that under propitious circumstances and good management, economic zones can achieve two basic goals of creating employment and increasing foreign exchange earnings ([Watson 2001](#)).

**The Political Economy approach:** The political economy perspective on FTZs is based on the ‘public choice theory’ ([Buchanan and Tullock 1962](#)), which draws on the interest group theories of political science and neo classical economy school. It argues that the provision of government intervention promotes lobbying by interest groups for rent seeking. A political argument for free trade reflects the fact that a political commitment to free trade may be good idea in practice even though there may be better policies in principle. Economists often argue that trade policies in practice are dominated by special-interest politics rather than consideration of national costs and benefits. They sometimes show that in theory a selective set of tariffs and export subsidies could increase national welfare, but in reality any government agency attempting to pursue a sophisticated program of intervention in trade would probably be captured by interest groups and converted into a device for redistributing income to politically influential sectors. Evidence suggests that governments in industrialized countries manipulated and maintained rents to create a capitalist class and after the creation of this class used these rents to encourage them to invest in growth ([Khan 2004](#)).

**Cost Benefit approach:** From the cost-benefit perspective on FTZs, recognizing that attracting FDI through the free trade zone system has meant a monetary cost to the country. ([Hamada 1974](#)), initially
analyze the effect of a FTZ when there is no foreign investment, an important tariff is used to protect good ‘B’ (goods of product B). In this situation, the production of good ‘B’ occurs entirely within the domestic zone where the relative price is greater. While good ‘A’ (goods of product A) is not taxed in either zone so it does not matter where its production take place.

One of the effect of cost benefit on FTZs, is the global value chain. The globalization process is accompanied by a rapid emergence of global value chain (Aggarwal 2010). The method of producing goods, from raw materials to finished product, has been reduced compared to the earlier times, and each process is carried out wherever the necessary skills and materials are available at competitive cost either through offshore outsourcing or offshoring. However, (Aggarwal 2010), further explain that market forces alone will not guarantee an effective integration of domestic firms in these chain. It is been argued that global competition is so intense and that unless urgent framework and policies are introduced to foster a favorable investment environment in terms of improved infrastructure, simplified rules and harmonized processes, regulations, and standards with domestic, bilateral, regional, and international practices; domestic firms in these economies are not usually able to avail the opportunities to integrate within these networks.

The cost benefits of FTZ adopted by governments of developing countries are mainly aimed at economic and social development by attracting foreign direct investments, which in turn leads to an increase in export, growth in foreign exchange earnings and the creation of employment opportunities for the domestic work force, who can also benefit from technology upgrade and management know-how.

2.2 Theoretical Framework on Power

The Power holding Company of Nigeria (PHCN)\(^2\), controlled by the Nigerian Electricity Regulatory Commission (NERC), is the regulatory body authority for the regulation of the electric power industry in Nigeria. Power Holding Company of Nigeria (PHCN) over the years before was a monopoly, which is state own. The monopoly has been fraught with poor management and maintenance, under-investment and obsolete facilities. With the passed reform Act, the industry would be unbundled, privatized to attract the needed resources to boost the sector.

For the theoretical framework that will be used in this report, the author will make use of the theoretical framework developed by (Makwe, Akinwale, and Atoyebi 2012). In these framework, they use the economic theories of natural monopoly and competitive market in their research. They explain that, for a better understanding on how firms interact in a market structures. Electricity market was known to be a

\(^2\) The Power Holding Company of Nigeria (PHCN), after the reform in 2005 and the privatization of the power sector in 2013, the company was splits into 18 companies (6 generation companies, 1 transmission company and 11 Distribution companies) respectively
vertically integrated monopoly market with its various segments –Generation, transmission, distribution, and retail supply- managed by a single firm.

The case of the New Public Management (NPM) reforms have been driven by a combination of economic, social, political and technological factors. The power sector typically government-controlled enterprise, because power production has features that makes it a natural monopoly. But the NPM-movement has been very hostile to government production. They deemed everything the government does as inefficient. These has make them to call for wholesale privatization. A common features of countries going down the NPM route has been due to the experience of economic and fiscal crises, which triggered the quest for efficiency and for ways to cut the cost of delivering public service. The crisis of the welfare state led to questions about the role and institutional character of the state. In the case of most developing countries, reforms in public administration and management have been driven more by external pressures and have taken place in the context of structural adjustment program (SAP). Other drivers of NPM-type reforms include the ascendancy of neoliberal ideas from the late 1970s. The development of information technology, and the growth and use of international management consultants as advisors on reforms.

(Makwe, Akinwale, and Atoyebi 2012) further stated that the initial thought of the industry as wholly monopoly structure was recently challenged which led to the privatization of the sector in many countries. Many developing countries are following the same trend because of the important role the power sector has played to their economic growth and development (Makwe, Akinwale, and Atoyebi 2012). Also, different countries engage in different types of reforms. These reforms could be a combination of competitive market, regulated private market and/or state owned. The author in these report will try to understand the framework used here, and make use of the ones that will best suit the research of the author’s theories that will help analysis in finding a better approach to these research.

2.3 Role of the Government on Electricity Market

Especially with emphasis on electricity market, is another situation that needs attention and understanding. Finding the market failures on market economy and the approach in solving them. Due to natural monopoly, in most countries, electricity sector, such as power grids where been funded by the government, as funding it by private companies will be too expensive for them to source for the funds, while the multinational firms that have the capability, will want to take advantage of the huge expenses to control the market in form of a monopoly.

(Bjornstad and Brown 2004), in their research on market failure, they develop a framework on market based role of government. In which traditional and emerging literature on market failure is presented. Traditional

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3 The Developed countries like UK, and Norway; emerging countries like India, China among others.
literature divides the causes of market failures into externalities, public goods, decreasing-cost industries, and institutional barriers. This literature tends to examine circumstances in which market prices fail to provide sufficient information or incentives to achieve Pareto optimality, assuming the context of a perfectly competitive economy. Pareto Optimality exists when gains from trade are exhausted and when the situation prevails that no individual’s well-being can be improved without a worsening of some other individual’s well-being.

While emerging literature focuses in failure caused by insufficient information. The information topics considered include a general lack of information asymmetries, and price signaling. This literature draws upon recent advances, in economic thinking that focus on incentives provided by distributions of information that are less than perfect, but which are arguably commonplace.

2.4 Monopoly Market

In an industry with high infrastructure costs and other barriers to entry relatives to the size of the market give the largest supplier in an industry, often the first supplier in a market, an overwhelming advantage over potential competitors. This frequently occurs in industries where capital costs predominate, creating economies of scale that are large in relation to the size of the market. An example of such are utilities such as water services and electricity (Perloff and Marelli 2012). In the case of electricity, it can be deduced that electricity market in most African countries is a natural monopoly because, it is usually state owned enterprise. (Sioshansi 2006), also identifies economic of scale and scope, vertical integration among other benefits as the main reason for natural monopoly. The cost structure of a natural monopoly has been assumed to have declining long-run average cost and constant marginal cost (Makwe, Akinwale, and Atoyebi 2012).

As a monopolist, the firm could set prices above marginal cost by flexing its market power, if left unregulated.
As shown above in Fig. 1. An Unregulated natural monopoly would attempt to maximize profits by producing the quantity of output, where marginal revenue equals marginal cost (MR = MC). This is the option the profit maximizing firm would choose, if it is unregulated, which is not good for the market. But if the market is been regulated by the government (regulated natural monopoly), it will not give the sole market power to the monopolist, which in turn will make it more competitive. If a natural monopoly is regulated to produce optimal quantity of output, the firm might suffer an economic loss. To keep the firm operating would require a government subsidy to the firm to eliminate the economic loss. The option for the government in finding a solution. If the Price (P) is set where the demand (D) curve and the average cost (AC) curve intersect, it provides a best approach (or alternative) of both world solution. The price (P) is lower than it would be if the government left the industry unregulated and the dead weight loss is smaller. Also, the government would not have to subsidize the firm. The downfall side is that, there is no incentive for the firm to keep cost low. AC will simply rise and cost will be pushed on to customers. One of the reason is due to the fact that the government do not have sufficient resources to meet these losses as well as the investment requirements of the natural monopoly. As a result, the pressure on its scarce resources had led to negligence in its obligations in state owned enterprise (Makwe, Akinwale, and Atoyebi 2012). Maximizing profit in state owned enterprises could be a plausible reason for inefficiency and it might had possibly triggered the privatization theory in many countries (Carlton and Perloff 2005).
2.5 Types of Market Failures
In some literature, economists have different opinion on which events are the sources of market failure. Mainstream economic analysis widely accepts a market failure can occur mostly on three major reasons; if the market is “monopolized” or a small group of people in the business hold significant “market power”, if production of the goods or service results in an “externality”, or if the good or service is a ”public good”. In this report, the types of market failures that will be mentioned are the ones that have a link to the main issue on the report, especially when it is about the electricity market. The types of market failures that are listed here are;

1) Productive and allocative inefficiency:
   - Inefficiency:- Under certain circumstances, firms in market economies may fail to produce efficiently. Inefficiency means that scarce resources are not being put to their best use. In economics, the concept of inefficiency can be applied in a number of different situations.
   - Pareto Inefficiency:- Occurs when an economy is not operating on the edge of its PPF and is, therefore, not fully exploiting its scarce resources. This means that the economy is producing less than maximum possible output of good and service, from its resources. An example in this case can be production of gas to power the electric plant, which can be one of the reason they is drop in the power generation.
   - Allocative Inefficiency:- Allocative inefficiency occurs when consumers does not pay an efficient price. An efficient price is one that just covers the cost of production incurred in supplying the good or service. E.g. can be the low tariff charges paid by consumer, this might lead to poor supply of electricity, as the cost of producing electricity in the market is high for the firm to maintain and continue.

2) Incomplete Market:- An incomplete market is where some of the necessary conditions for market formation exist, but not all of them. In the case of incomplete markets, some agencies, cooperate bodies (i.e. private firm owners) or entrepreneurs might enter the market because of profits are possible. However, the firms that do start start-up will only satisfy a small proportion of potential demand. In these incomplete markets, total supply is insufficient to meet the needs of consumers. In such case a market may form but will fail to develop completely.

3) Negative externalities:- A negative externality is a cost that is suffered by a third party as a result of an economic transaction. In a transaction, the producer and consumer are the first and second parties, and third party may include an individual, organization, property owner, or resource that is directly affected. Externalities are also referred to as spillover effects, and a negative externality is also referred to as an external cost.
2.6 The Role of Government in Market Economy

The role of government in a market economy is limited to a certain point. In Market economies, most decisions are made by individual consumers and producers/privately owned businesses. The role of government in allocating resources in a market economy has its traditional basis in a series of papers (Bator 1958, Miner and Burkhead 1971, Oakland 1987, Fisher and Rothkopf 1989, Brown 2001) explains the situations under which prices can coordinate efficient choices in consumption and production and the general departures from these circumstances that reduce efficiency.

According to (Bjornstad and Brown 2004), traditional generalization of market failure that have special relevance to energy efficiency include externalities, public gods, decreasing –cost industries, and institutional barriers to the transmission of clear prices signals. Other failures include common property, resources management, and non-competitive markets.

1.1. Externalities:
Externalities are market prices, usually reflect the costs producers pay to produce goods and the benefits consumers receive from the good. From energy sectors, these costs can include local pollution from using energy products, regional pollution from electrical generation. Climate change costs, and costs due to reduced energy security from oil imports (David and Marilyn, 2004).

A kind of market failures occurs when market price fail to reflect all the costs and all the benefits involved. (Fisher and Rothkopf 1989) suggest that, the market failures, externalities are probably the easiest to understand and accept, particularly those related to environmental quality. However, they are other externalities, not all of which give rise to easy consensus.

1.2. Public Goods:
The market mechanism is likely to fail to supply public goods, because entrepreneurs are unlikely to enter the market, given the impossibility of charging consumers at the point of consumption, public goods have the following characteristics; a) Shared consumption; when a person consumes a public good, it does not prevent others from also consuming the good. (b) Non exclusion; once a public good is produced, it is difficult or impossible to exclude others from consuming the goods, even if they did not pay for it.

1.3. Institutional Barriers:
This position holds that there are several well-accepted market failures in energy services markets and many so-called market barriers can be viewed as examples of these market failures, notably the market failure associated with imperfect information. (Bjornstad and Brown 2004), explained that, it has long been argued that the special circumstances of some energy markets fail to provide consumers with clear price signals or sufficiently fungible choice set of options to allow buyers and users of energy-using products to make optimal choices. Further review shows the reasons that leads to energy market failures, which are;

1.3.1. Electricity Pricing:
One of the major instances of market failure lies in house electricity pricing practices. The demand for electricity is characterized by a highly variable load that experiences cycles over seasonal, weekly, and daily time periods. Seasonally, the demand varies due to heating and cooling requirements. Weekly, it varies according to the needs of industry and commerce. Daily, load variance occurs as routine practices reinforce effects due to the changing of day and night. The consumers, however, is not generally aware of the time of day/week/season cost schedule to which he or she is subject. Instead, the consumer sees a monthly electricity bill often for billing periods of different lengths, some customer pay more than they actually consume, some do not have electric meter but have electricity as those that have meters and been charged for it, the billing cost is essentially an average monthly cost. To avoid billing spikes in high – usage months, some companies even allow customers to average costs over entire years, so that no price variation is seen. Thus, the price of electricity in most retail markets today does not reflect the real-time costs of electricity production. Which can vary by a factor of ten or more within a single day (Hirst and Kirby 2000).

According to (Bjornstad and Brown 2004), the result from these pricing practices is that the consumer experiences incentives to over-consume during peak periods and under-consume during slack periods. Most analysts agree that economic efficiency would be served by showing the consumer marginal costs of meeting load through time-of-day pricing. But would this reduce overall electricity consumptions? This is unclear. Time –of-use pricing would reduce consumption at current peaks, but it would, on average, face lower prices due to increased efficiencies from shifting loads from more expensive to less expensive generators. The first might reduce consumption while the second might increase it.

1.3.2. Misplaced Incentives

This problem occurs when an agent has the authority to act on behalf of a consumer, but does not fully reflect the consumer’s best interest. One of the example that can lead to this failure is the case where some government officials are collaborating with some agencies in the power sector for their own self-interest and not that of the people they govern (the consumers). Some of these collaboration between them (the officials and the agencies) can be; (a) Sabotage the distribution of electric to consumers; (b) Withholding salaries and bonuses of staffs in the power sector; thus makes some of these staffs to find other avenue in sustaining themselves through shady deals with some customers, or even vandalized/ steal some materials components of the firm.

Misplaced, or split, incentives are transactions or exchanges where the economic benefits of energy conservation do not accrue to the person who is trying to conserve. (Golove and Eto 1996), also analyze and explain some institutional barriers that may be the cause of market failures in the energy industry (sector). These are; lack of access to financing; flaws in market structure; and mix-pricing imposed by regulation.

1.3.3. Financing:
The financing barrier, sometimes called the liquidity constraint, refers to significant restrictions on capital availability for potential borrowers. Some of these borrowers can also be individuals or firms that manage energy sector, or even the lending institution themselves that uses their customers savings by channeling it into projects in the energy sector just only for the profit in the investment. Economic theory tells us that, for a risk-adjusted price, the market should provide capital for all investment needs. In practice, (Golove and Eto 1996) observed that, some potential borrowers, for example low-income individuals and small business owners, are frequently unable to borrow at any price due to their economic situation or “credit-worthiness”. This lack of access to capital inhibits investments in energy efficiency by these classes of energy producers and the consumers.

1.3.4. Market Structure:
The market structure barrier refers to product supply decisions made by equipment manufacturers. This barrier suggests that certain powerful firms may be able to inhibit the introduction by competitors of energy-efficient, cost-effective products. Evidence for the contention that market power has led to imperfect competition.

1.3.5. Regulation:
The regulation barrier referred to mix-pricing energy forms (such as electricity and natural gas) whose price was set administratively by regulatory bodies. These procedures and the cost structure of the industries typically result in different prices depending on whether they are set based on average costs (the regulated price) or marginal costs (the market price). Historically, the price of electricity as set by regulators was frequently below the marginal cost to produce the electricity. This mix-pricing was claimed to create an incentive to over-consume electricity relative to conservation or efficiency.
3. About FTZs and Other Economic Zones

Since the 1970s many developing countries has developed with the introduction of FTZs in their economies as an economy strategy for their country. It enable them to attract foreign investors that brought capital and investment to the country, in a way of stimulating both employment and growth (Miyagiwa 1993). The world’s first Free Trade Zone was established in Shannon, Ireland in 1959 (Farole and Akinci 2011). This was an attempt by the Irish government to promote employment within a rural area, make use of a small regional airport and generate revenue for the Irish economy. It was hugely successful, and is still in operation today. Up till date many countries as well has followed the success made by the Irish. The number of worldwide free-trade zones proliferated in the late 20th century. In the United States foreign trade zones were first authorized in 1934. Corporations setting up in a zone maybe be given tax breaks as an incentives. Usually, these zones are set up in underdeveloped parts of the host country; the rationale is that the zones will attract employers and thus reduce poverty and unemployment, and also stimulate the area’s economy. These zones are often used by multinational corporations to set up factories to produce goods (such as clothing, shoes, or electric appliances).

3.1 Difference between FTZ and FTA

There is a difference between Free Trade Zone (FTZ) and Free Trade Area (FTA). As stated earlier, FTZ are specific class of special economic zone in a geographical area within one part of the country where goods are re-exported, manufactured, handled without customs authorities intervention. While the FTA on the other hand is a region encompassing a trade bloc whose member countries have signed a free trade agreement. Such agreement could involve cooperation between two, three or more countries, to reduce trade barriers, import quotas, tariffs, and also to increase trade and flow of goods and service with each member countries. An example of a Free Trade Area (FTA) is the Economic Community of West African (ECOWAS) trade zone, which include 15 member nations having trades within the region. Other example of FTA is the EU trade zone, the Caricom Single Market and Economy (CSME), the Eurasian Economic Union (EEU) trade Area etc.

3.1.2 Types of Economic Zones

They are different types of economic zones in the world, while some are similar to one another, some such as Special Economic Zones (SEZs) are bigger and these zones are mostly found in more advanced

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4 The U.S Foreign-Trade Zones (which is similar to Free Trade Zone) was created by the Foreign-Trade Zone Act of 1934 to encourage foreign commerce in the US. The Act was amended in 1950 to open up FTZs to manufacturing, but had little impact until 1980. The US termed Free Trade Zone as Foreign Trade Zone.
developing countries. These are countries that have explored various types of economic zones. Among them are China, Korea, Indonesia, Egypt, Poland etc. the types of economic zones are:

Free Trade Zones (FTZs):- These are duty free areas, offering ware-housing, storage and distribution facilities for trade, trans-shipment and re-export operations, and located in most ports of entry around the world, which include easy access to seaport, airport and other means of movement. The use of FTZs are common in Africa and some parts of Asia and America.

Export Processing Zones (EPZs):- These are industrial estates that offers special incentives and facilities for manufacturing and other related activities, aimed mostly at export markets with the entire area within the zone reserved exclusively for export-oriented enterprises licensed under an EPZ regime. This are mostly commonly use in Asia and some parts of Africa and the America.

Hybrid: These form of trade zone are typical sub-divided into a general zone open to all industries regardless of export orientation and a separate EPZ are reserved for export-oriented, EPZ-registered enterprises.

Special Economic Zones (SEZs):- SEZs are generally a much broader concept and typically encompass much larger areas. They accommodate all types of activities, including tourism and retail sales, permit people to reside on site, and provide a much broader set of incentives and benefits. (Note: most of this economic zones are similarly termed the same in some parts of the world with same name but of different purpose).

3.2 Reasons for the Use of FTZs
Countries such as Ireland, Italy, China and even the United States, have all make use of economic zones such as FTZs to improve and develop their economy over the decades. Most region in the continent of Africa and Asia has over the years tried to emulate this approach, as a way of encouraging trade within one another, and develop their economy. According to (Stein 2007), the reason why countries especially in the Sub-Saharan Africa are emulating the use of FTZs are:

Attract Foreign Capital: - The ability to attract foreign capital into the zones particularly at levels that exceed the normal inflows. FTZs attracts foreign capital through FDI. There is an enormous need for private direct foreign investment in Africa which has done poorly in the era of structural adjustment. The share of developing country FDI going to Sub-Saharan Africa (SSA) has fallen by 70% in 2000 from the first half of the 80s to a very low 2.4%. The story of FDI in Africa during adjustment era has largely focused on oil. During the 1980-85 period, 52% of the total excluding South Africa went to four oil exporting countries Angola, Nigeria, Cameroun and Congo. In 2005, around 75% of all FDI to non-South African SSA went to 7 oil producing countries (Sudan, Congo, Chad, Congo DR, Equatorial Guinea, Gabon and Nigeria).

Other reasons why the use of free trade zones are encouraged (Hakim and Blackstone 2000), is that it;
Creates Local employment:- Every job in an FTZ creates two additional jobs through multiplier in the region. Clearly, the higher the magnitude of added value, the greater the multiplier and the higher is the spillover effect on regional income and employment.

Avoid Waste of Time:- An FTZ eliminates waste of time where imported intermediate parts are awaiting custom clearance. This facilitates just-in-time (JIT) production, reduced level of inventory, and the associated financing costs. Clearly, production becomes more efficient if JIT is implemented. There could be situation like delayed supply from overseas that prohibit manufacturer from maintaining the optimal level of inventory, for example, in Mexico custom clearing requires substantial “red tape” that is avoided in an FTZ.

Demonstration goods are not subjected to Traffic:- Companies that exhibit their products to local buyers within the zone can enhance their local sales. Since the products are exempt from duty, financing costs are lower. Clearly, FTZ companies gain a competitive advantages over similar companies that operate outside. This advantage is more valuable the higher the value of the products.

3.2.1 FTZ- Cost Benefit Analysis
The principal benefits or revenues that free trade zones offers the economic of that country can be transfer of technology and knowledge, particularly through productive linkage between local firms and multinationals, and the training of human resources by these multinationals operating in this zones. Cost-benefits analysis on FTZs is aimed at quantifying the more qualitative evaluation of zones by arriving at a bottom-line net present value or internal rate of return (Stein 2007). These benefits can include foreign exchange earned due to the usage of local inputs like labor including adjustments for the difference between the official exchange rate and the shadow rates (where lack of flexible exchange rates policy are under or overvalued), the revenue gained by the government, the employment benefits as measured by the difference between the wage and the social opportunity cost of labor (what labor can earn elsewhere) and the net profits share to local joint partners (as in taking into account the opportunity costs of the inputs provided). This costs are associated with infrastructural expenditures, administrative costs and the subsidies and incentives provided by the government.
An examples of these benefits is the economic zone in Shenzhen and in other zones, (Chen 1994) shows a very strong social benefits for the Chinese economic zone of Shenzhen. Other studies have indicated positive values in the zones such as in Indonesia, Sri Lanka, South Korea and Malaysia.

3.3 FTZ- Nigerian Perspective
The government of Nigeria adopted the concept for the use of economic zone for the development of her economic. Since 1989 when the foundation for the first Free Trade Zone (Calabar free trade zone) was established, there have been an addition of 32 more free trade zones in the country. Out of these zones only 14 out of the 32 are in operation (NEPZA, 2016). The reason why only half out of the zones listed in Nigerian is due to certain reasons such as:

a) Lack of proper planning or information by the zone management;
b) Financial and lack of strong backing of investors;
c) Location and environmental factors;
d) Poor infrastructure and social basic amenities such as roads, electricity etc. in place.

Table 1: List of Free Zones in Nigeria

<table>
<thead>
<tr>
<th>S/N</th>
<th>Name</th>
<th>Location</th>
<th>Sponsor/Developer</th>
<th>Land Size (Hectares)</th>
<th>Date of Designation</th>
<th>Specialty</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Calabar Free Trade Zone (CFTZ)</td>
<td>Cross River</td>
<td>Federal Government</td>
<td>220</td>
<td>1992</td>
<td>Manufacturing, oil &amp; gas, logistics services</td>
<td>Operational</td>
</tr>
<tr>
<td>2</td>
<td>Kano Free Trade Zone (KFTZ)</td>
<td>Kano</td>
<td>Federal Government</td>
<td>463</td>
<td>1998</td>
<td>Manufacturing, logistic services, warehousing</td>
<td>Operational</td>
</tr>
<tr>
<td>3</td>
<td>Tinapa Free Zone &amp; Resort</td>
<td>Cross River</td>
<td>State Govt/Private</td>
<td>265</td>
<td>10/7/2004</td>
<td>Manufacturing, Trade, tourism &amp; resort</td>
<td>Operational</td>
</tr>
<tr>
<td>5</td>
<td>Maigatari Border Free Zone</td>
<td>Jigawa</td>
<td>State Govt.</td>
<td>214</td>
<td>2000</td>
<td>Manufacturing, warehousing</td>
<td>Operational</td>
</tr>
<tr>
<td>6</td>
<td>Ladol Logistics Free Zone</td>
<td>Lagos</td>
<td>GRML</td>
<td>6/21/2006</td>
<td></td>
<td>Oil &amp; gas, fabrication, Oil &amp; gas vessels, logistics</td>
<td>Operational</td>
</tr>
<tr>
<td>7</td>
<td>Airline Services EPZ</td>
<td>Lagos</td>
<td>Private</td>
<td>3/21/2003</td>
<td></td>
<td>Food processing and packaging</td>
<td>Operational</td>
</tr>
<tr>
<td>8</td>
<td>ALSCON EPZ</td>
<td>Akwa Ibom</td>
<td>Federal/Govt./Private</td>
<td>814.619</td>
<td>Jun-2004</td>
<td>Manufacturing</td>
<td>Operational</td>
</tr>
<tr>
<td>9</td>
<td>Sebore Farms EPZ</td>
<td>Adamawa</td>
<td>Private</td>
<td>2000</td>
<td>12/21/2001</td>
<td>Manufacturing oil &amp; gas, petrochemical</td>
<td>Operational</td>
</tr>
<tr>
<td>10</td>
<td>Ogun-Guangdong FT Zone</td>
<td>Ogun</td>
<td>State/govt./private</td>
<td>10000</td>
<td>2/28/2008</td>
<td>Manufacturing</td>
<td>Operational</td>
</tr>
<tr>
<td>11</td>
<td>Lekki Free Zone</td>
<td>Lagos</td>
<td>State Govt/private</td>
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<td>12/4/2008</td>
<td>Manufacturing, Oil &amp; gas, petrochemical, Logistics</td>
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<tr>
<td>13</td>
<td>Iben Science &amp; Tech. FZ</td>
<td>Akwa Ibom</td>
<td>State Govt.</td>
<td>12.137</td>
<td>7/14/2006</td>
<td>Science &amp; Technology</td>
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<td>14</td>
<td>Lagos Free Zone</td>
<td>Lagos</td>
<td>Eurochem technology Singapore</td>
<td>218</td>
<td>10/4/2002</td>
<td>Manufacturing Oil &amp; gas, petrochemical</td>
<td>Operational</td>
</tr>
<tr>
<td>No.</td>
<td>Zone Name</td>
<td>State/Region</td>
<td>Owner Type</td>
<td>Area (Hectares)</td>
<td>Date Established</td>
<td>Industry/Activity</td>
<td>Status</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------</td>
<td>--------------</td>
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<td>-----------------</td>
<td>-----------------</td>
<td>-------------------------------------------------------</td>
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</tr>
<tr>
<td>15</td>
<td>Olokola Free Trade Zone</td>
<td>Ondo &amp; Ogun</td>
<td>State &amp; Private</td>
<td>10500</td>
<td>2004</td>
<td>Oil &amp; gas manufacturing</td>
<td>Operational</td>
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<tr>
<td>16</td>
<td>Living Spring Free Zone</td>
<td>Osun</td>
<td>State Govt.</td>
<td>1607.86</td>
<td>10/12/2006</td>
<td>Manufacturing, Trading and warehousing</td>
<td>Under construction</td>
</tr>
<tr>
<td>17</td>
<td>Brass LNG Free Zone</td>
<td>Bayelsa</td>
<td>Fed. Govt./Private</td>
<td>304.245</td>
<td>2/2/2007</td>
<td>Liquefied Natural Gas</td>
<td>Dev. Yet to commence</td>
</tr>
<tr>
<td>18</td>
<td>Banki Border Free Zone</td>
<td>Borno</td>
<td>State Govt.</td>
<td>500</td>
<td></td>
<td>Manufacturing, warehousing, trading</td>
<td>The sponsor yet to be committed</td>
</tr>
<tr>
<td>19</td>
<td>Oils Integrated Logistics Service Free Zone</td>
<td>Lagos</td>
<td>Private oil Field Industry Support Service Ltd</td>
<td>1000</td>
<td>10/12/2004</td>
<td>Marine, logistics, support services for offshore oil Repairs</td>
<td>Operational license Suspended</td>
</tr>
<tr>
<td>20</td>
<td>Specialized Railway Industrial FTZ</td>
<td>Ogun</td>
<td>State Govt.</td>
<td></td>
<td>4/30/2007</td>
<td>Rail Cargo Transport</td>
<td>Dev. Yet to commence</td>
</tr>
<tr>
<td>21</td>
<td>Imo Guandong FTZ</td>
<td>Imo</td>
<td>State Govt.</td>
<td>1399.27</td>
<td>5/7/2007</td>
<td>Manufacturing</td>
<td>Dev. Yet to commence</td>
</tr>
<tr>
<td>22</td>
<td>Kwara Free Zone</td>
<td>Kwara</td>
<td>State Govt.</td>
<td>355.587</td>
<td>7/10/2009</td>
<td>Trading, warehousing</td>
<td>Physical Dev. Yet to commence</td>
</tr>
<tr>
<td>23</td>
<td>KOKO Free Trade Zone</td>
<td>Delta</td>
<td>State Govt.</td>
<td>2327.29</td>
<td>12/2/2009</td>
<td>Manufacturing</td>
<td>Physical Dev. Yet to commence</td>
</tr>
<tr>
<td>24</td>
<td>Oluyole Free Zone</td>
<td>OYO</td>
<td>State Govt.</td>
<td>1374.5</td>
<td>5/16/2000</td>
<td>Manufacturing</td>
<td>Physical Dev. Yet to commence</td>
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<td>25</td>
<td>Ibom Industrial Free Zone</td>
<td>Akwa Ibom</td>
<td>State Govt.</td>
<td></td>
<td>20/2/2012</td>
<td>Manufacturing, Oil &amp; gas, trading services</td>
<td>Physical Dev. Yet to commence</td>
</tr>
<tr>
<td>26</td>
<td>Badagry Creek Integrated Park</td>
<td>Lagos</td>
<td>Kaztec Engineering</td>
<td>531</td>
<td>2014</td>
<td>Fabrication</td>
<td>Under Construction</td>
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<td>Ogindigbe Gas Revolution Industrial Park (GRIP)</td>
<td>Delta</td>
<td>Alpha GRIP Dev. Co.</td>
<td>2506.3</td>
<td>2014</td>
<td>Petrochemical, fertilizer, manufacturing and gas processing related activities</td>
<td>Under Construction</td>
</tr>
<tr>
<td>28</td>
<td>Nigeria Aviation Handling Company (NAHCO)</td>
<td>Lagos</td>
<td>NAHCO</td>
<td>10</td>
<td>2014</td>
<td>Cargo hub, Trans shipment and warehousing</td>
<td>Under construction</td>
</tr>
<tr>
<td>29</td>
<td>Nigeria International Commerce City</td>
<td>Lagos</td>
<td>EKO Atlantic FZ Ltd</td>
<td>1000</td>
<td>2014</td>
<td>Financial institutions (local and international) leisure, real estate, shopping malls and corporate business, commerce</td>
<td>Under construction</td>
</tr>
<tr>
<td>30</td>
<td>Ogogoro Industrial Park</td>
<td>Lagos</td>
<td>Digisteel</td>
<td>62</td>
<td>2014</td>
<td>Oil &amp; gas, fabrication, oil &amp; gas vessels, logistics</td>
<td>Under construction</td>
</tr>
<tr>
<td>31</td>
<td>Centenary City</td>
<td>Centenary City plc</td>
<td></td>
<td>1264.78</td>
<td>2014</td>
<td>Leisure, real estate, shopping malls and</td>
<td>Under construction</td>
</tr>
</tbody>
</table>
In Nigeria, there are two types of free trade concept, these are the specialized and the general-purpose trade/export zone. For effective management of these zones, at the federal level, two bodies are in place. These are the Nigerian Export Processing Zone Authority (NEPZA) for the general-purpose zones and the second is the Oil and Gas Free Trade Zone Authority (OGFZA).

3.4 About NEPZA
The Nigerian Export Processing Zone Authority (NEPZA) is a federal government agency under the supervision of the Federal Ministry of Industry, Trade and Investment, and was established in 1992 following the enactment of the Nigeria Export processing zone Act 63, in 1992. The agency is responsible for promoting and facilitating local and international investment into licensed free zones in Nigeria, The free zone scheme was set up to strategically improve the investment climate by stimulating export oriented business activities through strengthening strategic national economic policies, streaming administrative approval process and providing a one-stop-shop service for business both within and outside Nigeria.

Pursuant to the vibrant transformative economic programs of the federal government, the activities of the authority has been strengthened and this has led to the establishment of 34 Free Zones spread across the country. Some of the zones cater for a specific area of economic enterprise while others are more general in nature. There are currently over 300 licensed free zone enterprises operating in the various zones across the country. The overall objective for adoption of free zones in the country is to create an enabling environment aimed at enhancing economic growth and development of export oriented manufacturing in the non-oil sector of the economy, as well as the propagation of the Nigerian content policy in the oil and gas sector in order to diversify the country’s economic base, attract foreign direct investment (FDI), generate employment, increase foreign exchange earnings, enhance technology transfer, skill acquisition/upgrading as well as create backward linkages.

Since the inception of the scheme, Nigeria’s economy has witnessed tremendous patronage and steady growth through FDI inflow and revitalization of local industries. NEPZA administers the incentives for all the variants of the Free Zone ranging from Export Processing Zones, Free Trade Zones, Border Free Zones, Export Farm, Science and Technology Parks, Tourism and Resort Centers, and other more specific Specialized Free Zones. A zone can be operated by the public or private sector or a combination of both.
NEPZA cardinal objective is to ensure that client’s operational and strategic objectives are realized through responsive, cost effective and efficient services and instant pragmatic solution to their needs.

3.5 The Calabar Free Trade Zone
The Calabar free trade zone (CFTZ), which is the first free trade zone in Nigeria, is located in Calabar, the capital of Cross River State in the South region of Nigeria. The zone commenced its operation on 152 hectares of land before the state government granted additional 68 hectares of land, thereby bringing the total land area to 220 hectares. The companies that occupied the zone are mostly engaged in manufacturing, trading, provision of service and oil and gas related activities, these companies’ benefits from special taxation rules and duty-free imports.

The enabling act for registered free zones in Nigeria came into effect in 1972. The Calabar free trade zone was fully completed by 1999 and started operation after official commissioning in November 2001. The CFTZ is owned by the federal government.

One of the major problem most of the economic zones or free trade zones as it is been called are similar, such as poor road infrastructure, lack of water source, electricity which is one of the needed sector especially for industrial firms operating in these zones and the industrial zones in general in the country. As of May 2009, the power supply in the Calabar free trade zone (CFTZ) was erratic, with companies having to rely on diesel generators most of the time. Issue is the lack of dredging in the Calabar river channel was also affecting the zone, forcing companies to rely on Port Harcourt or Lagos for import and export of goods. These problems have not been addressed, even by December 2010, when the general manager of the zone said the epileptic power supply, poor quality roads and non-dredging of the river channel had slowed down development of the port and the zone.

It is time for the government, the agencies (Such as NEPZA) and other public and private sector that are in charge, managing these economic zones to try to improve on the development of the industries and infrastructure that the economic zones are facing for the betterment of the nation’s economy.
Chapter Four

4. Introduction on power (electricity) Sector

One of the ways to develop the economy of a country is through industrialization, and for this to be achieved an enabling infrastructures needs to be put in place with the right policies and framework which must be abide by everyone in the country. This has been succeeded in many developed country through good policy implementation with the help of globalization, achieved by the movement of people, trades, goods and services, which has brought them closer among countries as years runs by. Countries especially in the developed world believe that basic and needed infrastructures such as roads, power, water, education, healthcare etc. are some of the amenities that can lead to other major industrial success of an economy.

Without electricity for instance, most of the infrastructural examples stated above will not have been achieved as most of all this requires power (electricity) one way or another. Take for example education, with the digital & technology age we are now, lectures are been given to students online or in class through power points and computers, without electricity this will not be possible. Another case is the preservation of food through either frozen or warm and this is also or mostly done with the use of electricity.

The strategic role and policy of generating power (electricity) for the development of an economy has for decades now been appreciated by developed nations, with countries such as France, Germany, Italy, and United States etc. All this countries mentioned are well known developed nations that encourage the supply of power to its people within its environs as a way of boosting industrial development (U.S. Department of State, 2011). The power sector provides a platform for economic development, as electricity has helped bring development in all areas of production, be it trade, manufacturing or services (Alawiye 2011).

Policies needed that can help promote, secure, and to compete at a very reasonable price of the energy supply can help attract, improve and increase the growth of an economy. These include policies that support reducing energy costs to consumers, improving the reliability and maintain its sustainability in developing energy related issues (Alawiye 2011), and also the policy that will help develop the manufacturing, and trade development in the country.

With the use of cost effective energy efficiency, as these will help improve certain areas such as energy development, with growth in electricity demand that has been in existence over the last decades, improved and constant power supply are vital to any economic development.

The power sector is one of the major avenue to industrial development as it plays a vital role for a country in two major aspects; these are capacity for large investments and price of energy, as the investment in the energy sector can help improve national enterprises and the industrial capacity; while the price of energy is pervasive to all sector an influences the competiveness of the country.
Focus and attention are given to the power sector and its reforms in this report as it is one of the backbone to the growth of any development or progress of an economy, especially in the areas of economy zone or free trade zones. This is because, the economy zones are primary created as an avenue to develop other sector of the economy that will add to the GDP of that country through manufacturing, infrastructural development, trade especially with neighboring country and rest of the global world.

4.1 Review on Power in Industrial Sector

Decades ago, countries mostly the developed ones such as US, France, Germany, and Japan etc. have been able to build and rely on power as source of comfort, for the operations of their machineries which once operated before manually but at a slow pace. Power has helped industries such as the manufacturing of cars, electrical appliance etc. In Shodhganga (2016) review literature on power sector, it explain on the research work on development and evolution of the power sector which was reference to Byrne and Mun (2001), explain that the beginning of electricity and how it has grown globally. Shodhganga on its review of its literature research on power sector reforms, make reference to Jenina Joy Chavez- Malaluna (2000) work, which explains the reason why power reforms are been implemented in many countries in the world has helped source for funds from many world financial organizations all over the world. (Byrne and Mun 2001) explained that, when electricity was first introduced in the 1880’s in the United States and Europe, its use expanded dramatically throughout the world, transforming almost every aspect of daily life. It is now important and useful for the operation of almost if not all the technological equipment systems, and for this reason, has attained the status of a “Metatechnology”. The inner logic of this metatechnology has shaped contemporary development patterns-grid expansion and urbanization are nearly synonymous; national and local politics-pro-growth and pro-electrification coalitions significantly overlaps; social values, culture and identity-to be modern is to be electrified; and community life our connection to one another (in industrial countries especially is often electrical components and other material usage (telephone, television, e-mail). It is not surprising, therefore, that electricity supply is often viewed as an essential public good in contemporary society.

While developed and some developing nation’s industrial sectors are improving in trade, manufacturing and other areas of the economic with the availability of constant electricity (power) in those countries. Other developing nations especially in Africa (i.e. Nigeria for instance) are finding it hard to improve and develop their power sector, which has made most economic zones, multinationals, small and medium scale, and private firms to struggle in their various fields of production. For instance, take a look at the economic zones in Nigeria, even though the country has abundant resources (both human and natural resources) to generate power, for both industrial and household users, the nation still face an uphill task in achieving that goal. The government of Nigeria needs to solve the problem of the nation soon if they are to restore the
economic from further collapse. Going by the statement from the Manufacturing Association of Nigeria (MAN), “The numbers of companies that are closing down (or about to shut down) both local and foreign firms, are increasing due to unfavorable harsh economic environment, and power supply in the country and that 40% of production cost in the country goes to electricity generation by manufacturers” (Guardian Nigeria, December 18, 2015 and Sunnewsonline, March 11, 2016).

Jenina Joy Chavez-Malaluna (2006), explained that, the Power industry is the most scrutinized industry in the world today. Sweeping reforms are being pushed in many countries, even as California, one of the earliest states to adopt similar reforms come under attack for its supposed failure to protect consumers and ensure stable power supply. Reforms of the power industry has been used as the basis for the release of funds by multilateral development banks and international financial institutions. These review suggest that the better way of finding a solution to the problem of power sector for industrial sector in Nigeria is through the review on the power sector reform and also Framework for the sector. Problems in the financial markets have been attributed in some measure to “deregulation” and ineffective regulation and oversight. But there is no corollary with organized competitive electricity markets, which often are erroneously described as deregulated. While the electricity industry has undergone restructuring over the last decade. Prices for interstate transmission service are strictly regulated on a traditional cost-of-service basis. Prices for wholesale generation service are strictly regulated on a traditional basis if the seller is unable to show it cannot exercise market power. While price for retail transmission and distribution are strictly regulated on a traditional cost-of-service basis. Price for generation services in states without retail choice are similarly regulated on a traditional basis. In states with retail choice, retail service providers charge market – determined prices, but states impose a number of safeguards, including certifying only competitive suppliers that meets specific requirements, overseeing the competitive the competitive procurement of the electricity supply for customers who do not want, or are unable to purchase from a competitive supplier.

4.2 Nigeria and the Power Industrial Sector
The power industry in Nigeria has gone through a lot, especially with the implementation and framework process which leads to the privatization of the sector in 2013 (Joseph 2014 2013). The goal of this privatization of the Nigerian power sector was to help solve the problem of electricity, and increase the number of investment in the sector by encouraging private companies through FDI into the country.

The aim of this report is to show why electricity can help improve industrial sectors in the country, it is part of the backbone to any successful industrial economy. Also, how to source/diversify production of electricity in the country, especially through economic zones such as the Lekki free zone and other
rural/urban areas that are not able to afford/or have access to electricity supply due to lack of options which is not available at their disposal. For more than three decades, the country has not fully be able to utilize the development on the need to increase the capacity of electricity in the country, has most of the power plants and infrastructures that produce and generate electricity to the nation are still the ones that were installed during independence, while only few plants where added to the old plants which can only generate few hundreds of megawatts.

The situation of the poor state of electricity in the country shows, for the fact that Nigeria is one of the largest purchaser of standby electricity generating plants in the world (Bramoh and Okedeyi, 2010). The use of generators in the industrial sector, companies and for residential purposes is not the ideal way to improve electricity or develop the economy. This is the reason why government and other stakeholders, agencies and the citizens all need to act together to solve the problem of electricity. The reason why generator usage should not be encourage are; 1, It increase the cost of doing business in the country, from the investment and business point of view; 2, It makes the people (both for residential and industrial purposes) to spend more of their earnings on fuel and diesel rather on other important things or on savings; 3, Reduce the development of the economy in many other ways/areas, as it is not the ideal way to create/generate wealth for the nation (it limit growth development of an economy in areas of production, manufacturing, trade etc.), and finally; 4, the use of generators is hazardous, as it pollute the environment which is not good for the health. With the world dreading for climate change, this is not a good example to improve the environment.

However, banning or reducing the use of generators is mainly not the solution to the country’s electricity problem, rather the creation of other avenues, building more plants, and by diversifying the source of electricity through other means/methods, and also by developing the ageing power plants all over the country.

This report here is how the power sector industry can help improve the electricity situation in the country, but focus will mostly be on how economic/industrial zones in the country can be improved and developed with the help of stable electricity, for them to function effectively. Most of this economic zones if given the opportunity can also serve as a place or avenue that will reduce the problem of electricity if they are given the support needed to operate. The reason is because, some of the zones serves as a manufacturing area that can also create electrical appliances such as cables, transformers, trans-meters etc. The Nigerian government can take a clue from other regions both developed and developing countries by subsidizing into other alternative energy sources such as Solar, Wind Power, Hydro Power etc. as other ways to improve and increase electricity generation in the country.
Another issue that is affecting the success of stable electricity in the country is due to political instability in the country, and poor handling or lack of follow-up on the policies and reforms, by continuing from where the previous government and agencies stop rather than start with another framework or policies. Which is making the country to still be at the same situation rather than moving to other stages. The power sector, a component of which is the electricity sector of the economy has a great importance to our lives and takes central role in the economic transformation process. Currently, power generation capacity in Nigeria is estimated to be around 10,000 megawatts, with an average working capacity of less than 4,000 megawatts; to provide electricity for over 170 million people, while in South Africa for instance generate more than 45,000MW for a population of over 4 million people.

Due to the poor state of the power sector (electricity supply) in the country over two decades without change by the government of Nigeria, decided to privatize the power sector in the country, and since then the nation are still waiting for improvement in the sector which is still in a critical stage.

4.2.1 Overview of the Power Sector in Nigeria

The first electric company in the country which is the Nigerian Electricity Supply Company (NESC) was established in Nigeria in 1929. However, electricity generation in Nigeria had started over 30 years before the establishment of the first utility back in 1896, which was 15 years after it was created in the UK. The total capacity of the generators used then was 60KW. This shows that, the maximum demand in 1896 was less than 60KW. In 1946, the Nigerian government electricity undertaking was established under the jurisdiction of the public works department (PWD) to take over the responsibility of electricity supply in Lagos state which was the first state in the country to receive and generate electricity due to its industrial status during the period in the country.

Over the decades after the first generation of electricity in the country, the power sector has been facing several challenges. In 1950, a central body was established by the legislative council, for the supply of electricity and development to the care of the central body known as the Electricity Corporation of Nigeria (ECN). Also, there was another body known as the Niger Dam Authority (NDA), which was responsible for the construction and maintenance of dams and other works on the River Niger, generating electricity by means of water power, improving navigation and promoting fish brines and irrigation (Manafa 1995). The ECN and NDA were merged in 1972, to form a new organization known as the National Electricity Power Authority (NEPA)\(^5\). According to the Niger power review (1989), since ECN was mainly responsible for the distribution and sales and NDA created to build and run generating stations and transmission lines, the main goal for merging both firms were to;

\(^5\) The National Electric Power Authority (NEPA) was renamed Power Holding Company of Nigeria (PHCN) in 2005.
1. Lead in the vesting of production and the distribution of electricity power supply throughout the country under one company, which will take over the responsibility for its financial obligations.

2. To be integrated, and more effective for the utilization of human consumption, financial and other resources available to the electricity supply industry throughout the country.

Since infrastructure development is seen as the tool in building and having a vibrant economy, the need to industrialize the economy of the country like Nigeria is by creating an enabling environment, through good healthcare, sound education, innovation and technology etc. Most of these can be achieved through good power supply (electricity), has done in most developed world. Electricity is one of the backbone of industrial and infrastructural development. (Alawiye 2011) states that, since electric power is the engine that drives industrialization, then a stable electric power supply is the key for Nigeria to become one of the most 20 developed economy in the world. But these same backbone which is the success of every industrialized nation, electricity is the biggest problem in Nigeria, which has been a crisis without end (Emovon and Kareem, 2008).

For the country to succeed in finding a solution to this problem, the power sector reform needs to be look into once again and the areas where the loopholes (bottleneck) and leakages are, in solving the problem should be tackled with seriousness and capable hands and policy. An urgent solution in tackling the power sector crisis in the country will help solve most of the problem and hardship the country is facing, which by so doing will bring economy development to the country. Other issues in the power sector reform that needs to be readdressed are; A, Encouraging Independent Power Producers (IPPs) in the country to improve on their services and also allow more to operate especially the foreign investors with adequate knowledge in the sector, by providing enabling environment, security and infrastructures. B, diversifying the generation of electricity in the country through other channel, such as solar, wind and nuclear plant. C, An avenue of having more than one Transmission Company for the whole company, or by expanding the single transmission company as a way of increasing the number of grids in the country. By tackling some of these issues, it will help improve the power sector, which will lead to improvement of other sector such as manufacturing and other infrastructure services in the country, as the use of electricity is vital in all sectors.

The government has embarked on the power sector reforms with the intension of resuscitating the electric supplying institution by making it more efficient, effective and productive to the clamoring citizens of the country. According to (Sambo 2008), the Nigerian power sector is controlled by the state-owned Power Holding Company of Nigeria (PHCN), which was formerly known as the National Electric Power Authority (NEPA). The power sector bill signed by President Olusegun Obasanjo in 2005 was to enable private companies to participate in electricity generation, transmission, and distribution. These reform bill
was passed due to the similar one that was signed in 2002, for the telecommunication sector back then, which revitalized and improve the (telecommunication service) sector. With the influx of private companies investing in the sector through privatization. The government divide the electricity company into 18 companies; these has six generating companies, eleven distributing companies and one transmission company, all of which were privatized except the transmission which was still under the government but managed by a Canadian firm Manitoba Hydro International.

4.3 The Nigerian Power Sector

The Nigerian powers sector is made up of three (3) major sub-sectors, these are; Generation, Transmission and Distribution.

**Generation:-**

There are currently 23 grid-connected generating plants in operation in the Nigerian Electricity Supply Industry (NESI) with a total installed capacity of 10,396.0 MW and available capacity of 6,056 MW. While the available capacity has reduced to half of estimated mentioned above just of recent (which was as of February 2016), due to certain issues and problems. Most generation is thermal based, with an installed capacity of 4,996MW (83% of the total). While hydropower from three major plants accounts for 1,938.4MW of total installed capacity (and an available capacity of 1,060 MW).

*Table 2: Names and Installed Capacity of Gencos*

<table>
<thead>
<tr>
<th>S/N</th>
<th>Generation Company</th>
<th>Plant Type</th>
<th>Capacity (MW)</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Afam Plant Plc (1-V)</td>
<td>Thermal</td>
<td>987.2</td>
</tr>
<tr>
<td>2</td>
<td>Egbin Power Plc</td>
<td>Thermal</td>
<td>1320</td>
</tr>
<tr>
<td>3</td>
<td>Kainji/ Jebba Hydro Electric Plc</td>
<td>Hydro</td>
<td>1330</td>
</tr>
<tr>
<td>4</td>
<td>Sapele Power Plc</td>
<td>Thermal</td>
<td>1020</td>
</tr>
<tr>
<td>5</td>
<td>Shiroro Hydro Electric Plc</td>
<td>Hydro</td>
<td>600</td>
</tr>
<tr>
<td>6</td>
<td>Ughelli Power Plc</td>
<td>Thermal</td>
<td>924</td>
</tr>
</tbody>
</table>

Source: *(Onochie, Egware, and Eyakwanor 2015)*

*Figure 2: Installed Capacity and Available Capacity in Nigeria*
According to IEA (2009) report, the total installed electricity net generation in Nigeria was majorly on gas thermal plant with 64%, hydro with 23% and steam thermal with 13%.

Figure 3: Total Installed Electricity Net Generated in Nigeria

Under the generating sector they are also producing power firms managed by the private and government. According to (Onochie, Egware, and Eyakwanor 2015), they are; a, Independent power producers (IPPs) and b, National Integrated Power Projects (NIPPs).

Independent Power Providers (IPPs):- This are power plants owned and managed by the private sector. Although there are independent power producers existing in Nigeria prior to the privatization process. The Nigerian Electricity Regulatory Commission (NERC) has issued about 70 licenses to independent power producers in order to improve the power situation in the country. The existing IPPs include Shell-Afam VI (642MW), Agip- Okpai (480MW) and AES Barges (270MW).

National Integrated Power Projects (NIPPs):- The NIPPs is an integral part of federal government’s efforts to combat the power shortages in the country. It was conceived in 2004 as a fast-track public sector funded initiative to add significant new generation capacity to Nigeria’s electricity supply system. Long with the electricity transmission and distribution and natural gas supply infrastructure required to deliver the
additional capacity to consumers throughout the country. There are 10 National Integrated Power Projects, with combined capacity of 5, 455MW scheduled for completion (for ongoing projects) and privatization in 2014.

*Table 3: Location of the NIPPs Generation Companies*

<table>
<thead>
<tr>
<th>S/N</th>
<th>NIPPs Generation Companies</th>
<th>Capacity (MW)</th>
<th>Expected completion date as at September 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alaoji Generation Company Limited</td>
<td>1,131</td>
<td>June 2014</td>
</tr>
<tr>
<td>2</td>
<td>Benin Generation Company Limited</td>
<td>508</td>
<td>December 2013</td>
</tr>
<tr>
<td>3</td>
<td>Calabar Generation Company Limited</td>
<td>634</td>
<td>June 2014</td>
</tr>
<tr>
<td>4</td>
<td>Egbema Generation Company Limited</td>
<td>381</td>
<td>June 2014</td>
</tr>
<tr>
<td>5</td>
<td>Gbarain Generation Company Limited</td>
<td>254</td>
<td>June 2014</td>
</tr>
<tr>
<td>6</td>
<td>Geregu Generation Company Limited</td>
<td>506</td>
<td>May 2013</td>
</tr>
<tr>
<td>7</td>
<td>Ogorode Generation Company Limited</td>
<td>508</td>
<td>All units commissioned</td>
</tr>
<tr>
<td>8</td>
<td>Olorunsogo Generation Company Limited</td>
<td>754</td>
<td>All units commissioned</td>
</tr>
<tr>
<td>9</td>
<td>Omoku Generation Company Limited</td>
<td>265</td>
<td>June 2014</td>
</tr>
<tr>
<td>10</td>
<td>Omotosho Generation Company Limited</td>
<td>513</td>
<td>All units commissioned</td>
</tr>
</tbody>
</table>

Source: Adapted from *Onochie, Egware, and Eyakwanor 2015*

According to *Onochie, Egware, and Eyakwanor 2015*, the 50 billion naira (in dollars) was put aside by the government in 3 Nigerian banks to serve as a buffer for losses that the Gencos (The generating firms) may suffer in the course of power transmission. Draw-downs are only possible where the stipulated conditions are met. While the Nigeria Bulk Electricity Trading plc (NBET) will manage the accounts.

**Transmission:**

The transmission company of Nigeria (TCN) is one of the successors of the Unbundled PHCN and is currently an asset held under the custodianship of the Federal Ministry of Power. It will initially remain publicly owned. TCN has the responsibility for the management of operation, maintenance and expansion of the 132KV and 330KV transmission system. The Bureau of Public Enterprise (BPE) recently appointed a management contractor, following the unbundling of the sector, and is currently being managed by a
managed contractor, Manitoba Hydro International (Canada). Manitoba is responsible for revamping TCN to achieve providing stable transmission of power without system failure. Currently, the transmission capacity of the Nigerian electricity transmission system is made up of about 5,523.8 of 330KV lines and 6,801.49KM of 132KV lines.

The TCN is made up of two major departments; system operator and market operator. The market operations (MO) is a department under TCN charged with the responsibility of administering the whole electricity markets, promoting efficiency and where possible, competition. While the system operator (SO) function is focus on system planning, administration and grid discipline. The SO is also responsible for the overall security of economic dispatch of available generation resources and maintaining system stability. Furthermore, one of the major areas of focus of Manitoba Hydro International is to reorganize TCN and ensure that the market operator and system operator become autonomous.

**Distribution:**

There are eleven electricity distribution companies (DISCOS) in Nigeria. The coverage area of the eleven companies are indicated in the map below.

*Figure 4: Map on the Distribution Companies in Nigeria*

![Map on the Distribution Companies in Nigeria](image-url)

Source: Derived from (Onochie, Egware, and Eyakwanor 2015)
4.4 Investment in Power

The Federal Government has concluded plan to embarked on some programs aimed at facilitating investments in the power sector. This will also motivate private investors who have been reluctant in investing in the sector. Similarly, the government has also increased electricity tariffs since April 2011 as part of the measures to stimulate more investments in the power sector, in accordance with the roadmap launched in 2010 (Alawiye 2011).

According to (Nnaji 2011), the sector mostly the generation capacity needs capital investment worth N520 billion (US$3,5billion) to increase generating capacity from approximately 4000MW to 13000MW by 2013 (stated by the previous government). In a bid to improve investment in the country, the federal government of Nigerian has put in place investment incentives particularly targeted for the power sector, it include:

- Tax holiday of 3-5 years granted to companies that manufacture transformers, meters, control panels, switchgears cables and other electrical related equipment, which are considered pioneer products/industries.
- Power plants using gas are assed under the company income Tax Act at a reduced rate of 30%

The urgent need for government to rectify grey areas in the power sector reform, as a way to assure private and foreign investors that the sector is healthy for investment and that government is ready to work with them (the investor) for both their success and that of the sector for the benefits of both parties and the country in general. The government of Nigeria recently sealed a pact of $11 million (N2.17billion) with the Japanese government for an emergency improvement of electricity supply facilities in Abuja. The project to be implemented by the Japanese international Cooperation Agency and the Ministry of power is aimed

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Table 4: Key Information about the 11 DISCOS

<table>
<thead>
<tr>
<th>S/N</th>
<th>DISCOS</th>
<th>Percentage Load Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Abuja Distribution Company</td>
<td>11.50%</td>
</tr>
<tr>
<td>2</td>
<td>Benin distribution company</td>
<td>9%</td>
</tr>
<tr>
<td>3</td>
<td>Eko Distribution Company</td>
<td>11%</td>
</tr>
<tr>
<td>4</td>
<td>Enugu Distribution Company</td>
<td>9%</td>
</tr>
<tr>
<td>5</td>
<td>Ibadan Distribution Company</td>
<td>13%</td>
</tr>
<tr>
<td>6</td>
<td>Ikeja Distribution Company</td>
<td>15%</td>
</tr>
<tr>
<td>7</td>
<td>Jos Distribution Company</td>
<td>5.50%</td>
</tr>
<tr>
<td>8</td>
<td>Kaduna Distribution Company</td>
<td>8%</td>
</tr>
<tr>
<td>9</td>
<td>Kano Distribution Company</td>
<td>8%</td>
</tr>
<tr>
<td>10</td>
<td>Port Harcourt Distribution Company</td>
<td>0.50%</td>
</tr>
<tr>
<td>11</td>
<td>Yola Distribution Company</td>
<td>11.50%</td>
</tr>
</tbody>
</table>

Source: Derived from (Onochie, Egware, and Eyakwanor 2015)
at procuring and installing power capacitor banks for some states in the country (Punchng, February 11, 2016).

The government of Nigeria, is looking to the private sector to deliver a substantial portion of required electricity infrastructure investments. While estimates vary, more than $10 billion is required to resuscitate and rehabilitate Nigeria’s power infrastructure in the next few years and the National Integrated Infrastructure Master Plan estimates that $900 billion will be required to develop the country’s power sector in the next 30 years, with private sector participation needed to mobilize such large annual funding levels.

4.5 The Reform, its challenges and Opportunities

4.5.1 The Reform:
The Power sector reform was a wakeup call, needed for the growth and development of the economy in the country. The call for power sector reform in Nigeria is primarily as a result of inadequate electricity supply, incessant power outages, low generating plant and availability and high technical and non-technical losses that have been characterized in the Nigerian electricity industry. During the implementation of the power sector reform, a regulatory framework was in place as a way of moving closer in solving the power sector crisis. Under these framework are regulatory agencies, created by the federal government of Nigeria as other arms and functional agencies that will be part of the board. (Nigeria 2013), explains the key regulatory agencies that are part of the reform, these are, the federal ministry of power; Nigerian electricity regulatory commission; energy commission of Nigeria; rural electrification agency; and finally the presidential task force on power.

The dissatisfaction with the performance of Local Distribution Companies (LDCs) of electricity-symptomized by its low capacity generation; high costs; inadequate distribution of electric power; inability to finance new or expanded infrastructure; and inadequate machinery for effective billing and collection of bills fuelled the debate on the theoretical and empirical justification for its involvement in Nigeria’s electricity power sector, and became the driving force behind liberalization

Heuristic analyses, by experts in the field conclude that the process of reform and liberalization of capacity-deficient power sector such as Nigeria’s, should include the elements:

- Mandating Local Distribution Companies (LDCs) to operate according to commercial principles (i.e. withhold and regulate price)
- Introduction of more competition
• Restructuring of LDCs supply chain to enable full liberalization.
• Privatization of the unbundled electricity generators and distributors under dispersed ownership to the right and capable workings that can manage them, to encourage private investors (who are in the field of power sector not just friends for political sake) and operators to bring in financial resources and technical and managerial expertise to correct LDCs, once PHCN’s deficiencies.
• Development of economic regulation that is independent from government and industry capture
• Restricting government’s role on policy formation and execution

(i) The federal ministry of power:- This is the government administrative arm that deals with policy formulation and provides general direction to other agencies involved in the power sector. The key function of the ministry is to develop and facilitate the implementation of policies for the provision of adequate and reliable power supply in the country. In carry out its functions, it is guided by the provisions of the National electric power policy, 2001; the Electricity power sector reforms (EPSR) Act, 2005; the road map for power sector reform, 2010; as well as the transformation agenda on power of the federal government. The minister of power is the political head of the ministry while the permanent secretary is the administrative head.

(ii) Nigerian electricity regulatory commission:- The Nigerian electricity regulatory commission (NERC) was established by the EPSR Act, 2005. It is an independent regulatory agency mandated to regulate and monitor the Nigerian power sector. The function of the NERC include, but not limited to the following:
   (a) Promote competition and private sector participation, when and where feasible.
   (b) Establish or approve appropriate operating codes and safety, security, reliability and quality standards.
   (c) License and regulate persons engaged in the generation, transmission, system operation, distribution and trading of electricity.
   (d) Approve amendments to the market rules and monitor the operation of the electricity market.

The NERC is led by seven commissioners representing the 6 geo-political zones in the country in addition to one commissioner designated as chairman and chief executive officer.

(iii) Energy commission of Nigeria
The energy commission of Nigeria (ECN) was established in 1988 with the statutory mandate for strategic planning and coordination of national policies in the field of energy. It was established in line with the declaration of the heads of The Economic Community of West African States (ECOWAS) in 1982 for the establishment of an agency in each member state charged with the responsibility of coordinating and supervising all energy functions and activities. The function of the ECN include, but not limited to, the following:
(a) Serve as a center for gathering and dissemination of information relating to national policy in the field of energy.

(b) Inquire into and advise the government of the federation or the state on adequate funding of the energy sector including research and development, production and distribution.

(c) Monitor the performance of the energy sector in the execution of government policies on energy.

(d) Serve as a center for providing solutions to inter-related technical problems that may arise in the implementation of any policy relating to the field energy.

The ECN is headed by a director general, who also serves as its chief executive.

(iv) Rural Electrification Agency:

The rural electrification agency (REA) is a federal government parastatals under the federal ministry of power. It was established by the EPSR Act with the statutory function of promoting, supporting and providing electricity access to rural and semi-urban areas of the country. The agency also administers the rural electrification fund (REF). The purpose of the REF is to promote, support and provide rural electrification programs through public and private sector participation in order to achieve more equitable regional access to electricity, and promote expansion of the grid and development off-grid electrification. Eligible customers and licensees are required to contribute to the fund at rates to be determined by NERC.

(v) Presidential Task Force on Power:

The presidential task force on power (PTFP) was established in 2010 to drive the power sector. The role of the PTFP is to co-ordinate the activities of the various agencies charged with ensuring the removal of legal and regulatory obstacles to private sector investment in the power industry. It also, has the mandate to monitor the planning and execution of various short-term projects in generating, transmission, distribution and fuel-to-power that are critical to meeting the stated service delivery targets of the power sector roadmap. The PTFP is determined by a board of directors headed by a chairman.

4.5.2 Challenges in the Nigerian Power Sector

Part of the challenges the Nigerian power sector is facing, even years after it was privatized for better service delivery and efficiency. Yet an average Nigerians are not feeling the impact or effect of the privatization of the electricity due to certain number of issues being faced by the successor companies that brought the firm. (Foster and Pushak 2011, Makwe, Akinwale, and Atoyebi 2012, Onochie, Egware, and Eyakwanor 2015, Sambo et al. 2012) explains that, one aspect the Nigeria power sector were able to do after a decade of shortage of electricity in the country was the increase in capacity of electricity through the reform put in place. Furthermore (Latham and Watkins, 2016) was the privatization of the power sector,
which was also, a step in the right direction during this period, and plans in increasing the estimated capacity it is now (with is still below 12000MW) must be put in place in order to achieve the target required for the development of the economy.

The word privatization as always been used and implemented in most sectors of an economy both in developed and developing countries. Even, the Telecommunication sector in Nigeria was privatized and the effect of the privatization has shown in both the industrial and infrastructural development of the economy. Same was done to the power sector in the country, but the situation did not change rather went even worse. The reason why the case of the power sector in Nigeria has not been success, but rather have been a nightmare for Nigeria, is something that needs urgent priority. Some experts in the power sector explain one or two reasons that might have been underestimation by the country and the people managing the sector on how the increase demand for electricity in needed in most sector of the economy and the country.

While others believed lack of attention and focus from part of the government might also have been the reason. From the economist point of view, market failure, policy implementation, reforms and management, political motive, selfishness interest etc. might have contributed to the situation which has now lead to the problems the nation is facing now. According to (Sambo et al. 2012); poor utilization of existing assets and deferred maintenance; delayed in the implementation of new projects; lack of sustained, sound and practicable relationship between the Federal Government and other stakeholders particularly the International oil Companies and the Independent Power Providers (IPPs); the national Grid not yet covering the many parts of the country etc. as some of the major challenges the nation needs to focus on; while other challenges are:-

**Lack of Gas supply:**

One of the main challenges currently faced by the thermal Gencos is insufficient gas supply to generate electricity. Despite the country holding the ninth largest gas reserves in the world, domestic gas supply in Nigeria has always been challenged due to poor gas infrastructure in the country. Energy companies are reluctant to incur large investment costs unless a cost-effective tariff is put in place by the government. The energy companies also prefer to sell the produced gas to buyers outside the country due to the fact that they earn more than selling it in the domestic market, also due to the fact that some agencies and ministries within the MDAs in government and some other local sector owes or do not pay in-time, which leads to huge debts to pay later on. Accordingly to the former Nigerian petroleum minister Alison-Madueke, about 750 mmcf/d gas is supplied to the power sector, resulting in an aggregate generating capacity of 4,000 MW and adding up to 370 mmcf/d of gas could increase generation capacity of 5,000 MW by the end of 2014. As at the end of 2014, the target was not made rather the amount of gas from the energy companies did not
increase that much as expected figure. But rather, have an upward effect on the generating capacity from 4,000MW to 4,800MW as at December 2015.

On gas pricing, these has been a major issue in Nigeria and is very central to electricity generation, availability and retail prices. The original contacts between the oil companies, which are the primary producers of associated gas, want a commercial price for gas supplied to the domestic market that matches international prices. The Government, arguing that this gas is a national asset, wants the gas to be priced low, especially for the power sector in an attempt to keep the retail electricity prices low. Since the International LNG prices are more attractive, the oil companies have an incentive to divert gas to international export markets as much as they could and since they do not have an incentive to supply for the domestic market, flare the rest of the gas. The government’s policy mandates all oil and gas operators to set aside a pre-determined amount of gas for the domestic sector. The Government’s policy introduces a floor price of US$0.40/MMBtu at power plants based on a price of US$0.10/MMBtu at the well head and transmission charge of US$0.30/MMBtu. The price of gas to non-power consumers is expected to cross subsidize the price to power plants resulting in a pooled price of US$0.80/MMBtu to the gas producers.

In response to the gas supply short fall, the government has recently approved temporary intervention measures:

i) A gas price increase from US$1.50/mcf to US$2.50/mcf and US$0.80/mcf to cover transportation costs for new capacity.

ii) A regulatory requirement for gas suppliers to commit to supply agreed gas quantities for so long as they are paid by the GENCOS.

iii) Arrangements to allocate an additional 370mmscf/d of gas to the power plants as part of the plans to increase Nigeria’s generation capacity to 5,000MW or more (including hydro) which was estimate as at 2014.

iv) Working with the Central Bank of Nigeria to set up a special purpose vehicle structure to restructure up by N25 billion Naira (US$156 million) of accumulated debts owed to gas suppliers, which will allowed them to discharge gas needed to generate electricity for the country.

Gas constraints is said to reduce the power generation capacity by 1,995MW according to the government and power companies, and reasons for this include favorable gas prices to the gas firms; gas pipeline vandalism, insufficient gas infrastructure, and uncertainty in regulation and fiscal policy for gas among others.

**Transmission Infrastructure Holdup:**

Another major challenge been faced in the power sector is the transmission network. The Transmission Company of Nigeria (TCN) remains a government entity, despite it being managed by a Canadian firm,
Manitoba Hydro International, on behalf of the government of Nigeria. The Transmission Company of Nigeria (TCN) continues to operate obsolete transmission equipment and be held back by bureaucratic processes. In July 2014, the Nigerian minister of power announced plans to privatize the transmission sector into three separate business units but details of the purposed privatization have yet to be finalized. Although, the transmission company of Nigeria plans to upgrade the transmission system to a capacity of 11,000MW by 2020 (subjected to adequate funding and completion of projects planned for implementation); the transmission infrastructure in its current state, without an upgrade and approved technology, is unable to accommodate the estimated increase in generation by 2020.

**Efficiency and Asset Utilization:**
Aggregate technical commercial and collection (ATCC) losses also continue to be a significant issue for the DISCOS. During the bid process, successful Discos were selected based on their ATCC loss reduction plans over the next five years. However, these plans have had limited success as a result poor infrastructure acquired, shortage in financing for the procurement of equipment and components and theft of electricity. This affects the Gencos in turn, as the losses are currently being shared by all parties.

4.6 Challenges Facing Electricity Market in Nigeria

**Industrialization:**
Before the coming of industrialization in the country as early as in the 1950s, the demand for electricity was below supply. The arrival of industrialization in the world, with the effect in the country, has made the capacity available stretched to maximum, with little available to cater for the high demand needed. Also, the government did not make use of the opportunity at that period in establishing a framework plan for certain period of time to develop and expand the capacity of power generation due to lack of information and ideas, poor management and proper planning for the development of the industrial sector of the country. Ageing power plants and poor Transmission:
Most of the power plants in the country were still the ones built in the 50-70s (75% of the plants are more than 30 years), while just few were built within the last two decades. According to (Ibitoye and Adenikinju 2007), the ageing of power plants, poor maintenance and dearth of funds to finance the power sector are some of the major factors that could be responsible for the sub-optimal operation in the power sector. For an improvement to the deplorable state of electricity in the country, the power sector needs on yearly basis at least N520 billion (US$3.5 billion) to increase generation capacity from approximately 4000MW to 13000MW by 2013 (PTFP, 2011). Due to poor maintenance and funds the time frame to achieve the target did not materialized as of then (2013 till date, as the sector still struggling).
The state of the generating capacity has had a toll on the transmission network in the power sector, with an overload capacity less than 5,000MW. (Makwe, Akinwale, and Atoyebi 2012), there are significant line voltage and power losses, as high as 25% in Nigeria compared to 3% in the US and 0.5% in Japan, in the transmission system due to the large distance between the transmission and the distribution network, which can be as far as 300km and 500km or more. Low transmission grid voltages of 330KV and 132KV which are still used in the developing countries like Nigeria compared to 7665KV or more used in developed countries can also be a significant cause to loss in transmission and distribution. Other challenges facing the power sector are; (a) lack of diversifying the generating network of electricity through other source such as solar, wind etc. The cost of building and maintain these types of electricity generation are expensive, but the use of Public-Private Partnership (or awarding the license to private firms) can help reduce the burden on the two main generating types that are mostly used, the hydro and thermal plants. (b) Low tariff on electricity charges. Electricity tariff charges in Nigeria is rated as one of the lowest in Africa (Foster and Pushak 2011). These has make it less attractive for investors for instance to invest in the power sector, as cost of building and maintaining power plants of any kind are expensive. The reform Act passed in 2005 brought about a review of the tariff from $0.04/KWh to $0.06/KWh in 2009, and that increased to $0.07/KWh in 2011.

![Electric Tariff of some African Countries](image)

*Figure 5: Electric Tariff of some African Countries*

Source: Adapted from (Foster and Pushak 2011)

As part of the measures taking by the government to increase the power tariff, which was done through the use of the Multi- Year Tariff Order (MYTO)6, as a way of sourcing for funds through the process, to improve on the electricity infrastructures and also use the opportunity to encourage investors into the power sector.

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6 The MYTO ACT was introduced in 2005, through which NERC was formed was to raise power tariff in the country. It provides 15 year tariff path for the Nigerian electricity industry.
Opportunities for Off-grid Solutions in the Nigerian Power Sector

The Nigerian population is above 183 million (worldometers.info), and about 55% of the population have no access to grid-connected electricity (Nigerian power baseline report-nesistats.org). Access to electricity in the rural areas is about 35% and about 55% in the urban areas. It has been estimated that developing economies would need at least about 1000MW per million people to meet their electricity demand. Invariably, Nigeria would require more than 160,000MW to achieve the desired electricity generation capacity. Nigeria projected that by the year 2020, the country’s generation capacity would be in excess of 40GW (40,000MW), and the energy mix will constitute 69% thermal generation, 17% hydro, 10% coal and 4% of renewable (nipc.gov.ng).

The On-grid Challenge

The on-grid generation refers to a system of power generation evacuated through the natural grid to off-takers which may be the Bulk trader (Nigerian Bulk Electricity Trading company plc), who through vesting contracts supplies the power to distribution companies, or directly eligible customers, as may be declared by the minister of power.

As at of today, the installed generating capacity 12,533MW according to the minister of power; out of which 10,592MW is gas fired, and 1,930MW is from hydro. It is worth noting that out of the total installed capacity, the maximum peak generation by plants in December 2015 was 4,810MW.

The Off-grid Solution

Off-grid generation can be described as stand-alone power generation systems or mini-grid, which typically provide smaller communities (e.g. rural areas, industrial clusters or residential estates) with electricity through independent electricity distribution network systems. The total off-grid electricity generation capacity as approved by the Nigerian Electricity Regulatory Commission (NERC) is still less than 5000MW (punchng, November 6, 2015). Considering Nigeria’s plans to increase generation capacity in the coming years and the low level of access to electricity in the rural areas; there is need for significant investments in off-grid generation.

The off-grid generation approach has been successfully implemented by some countries up till today. One of the example of such country is, Bangladesh. The country (Bangladesh) is one of the world’s most densely populated countries with a population of over one hundred and fifty eight million and has made a success story from implementing off-grid power solutions.

4.6.1 Structure of the Electricity market in Nigeria

The structure of the electricity market in Nigeria has been in existence since the 1950, when the Electricity Corporation of Nigerian (ECN) was established to be responsible for electricity supply and development in
Nigeria. These was the first body in the country back then, after the first utility established in Nigeria 1896. By 1962, the Niger Dams Authority (NDA) was established by an act of parliament. This authority was responsible for the construction of and maintenance of dams and other works on the River Niger and other hydro generating plants (Makwe, Akinwale, and Atoyebi 2012). By 1972, both ECN and Niger Dams Authority (NDA) were merged then to form NEPA back then.

Operator of the Nigerian Electricity Market (ONEM, or the market operator), which resides within the Transmission Company of Nigeria (TCN), is responsible for operation of the market and settlement arrangements. This includes:

- Administration of the metering system between generation, transmission and distribution companies
- Settlement of matching energy generated by source to energy delivered to each distribution company and then estimates the payments to/from the involved entities; and
- Administration of collection from distribution companies and payments to generation companies.

There are four key players in the electricity market in Nigeria. According to (Adenikinju 2005), these four are; National Electric Power Authority (NEPA) which was later changed to Power Holding Company of Nigeria (PHCN), Rural Electrification Board (REB), private license producers, and self-providers.

The National Electric power (NEP) plc is the organization responsible for providing electricity throughout the country. Ordinance NO 15 Act of 1950 gave the following power to ECN, which is now PHCN (The Company which is also now splits into Local Distribution Companies (LDs)).

(i) The responsibilities for electricity power generation, transmission, distribution and sales throughout the country.

(ii) The power to acquire, hold and dispose of lands for purposes of effective operation and attainment of the objective of regular power supply.

(iii) That PHCN (now LDCs) have the power to suspend electric power supply to consumers for such periods as may be necessary for carrying out inspections, tests or repairs and also making new connections.

Maximizing the benefits of standardization is a factor for reduction of construction and operating cost in electricity business. The total installed capacity in the country, which stood at 5,876MW in 1996, was only one fifth that of South Africa, which was 31,000MW. Even then, Nigeria’s installed capacity is nearly twice the peak demand for electricity, which was 2,452MW in spite of this, the supply of electricity is Unreliable.

The Public power service providers’ reliability is known to be less than 50% nation-wide. Available information shows that, 40% of the nation’s population have access to electricity supply. While consumed energy per capital is only 161KWh, barely enough to light ten 40-watt bulb for one hour each day of the year (vision, 2010).
4.6.2 Reform and the Bulk Trader

The sale of the Gencos and Discos is dependent on the operationalization of the bulk trader. Investors will not sign a sale and purchase agreement until they have a counter party with whom they can contract. At this stage in the evolution of the electricity market, bilateral contracts between power producers and distribution companies are not possible. Only a bulk trader (with the ability to sign PPAs backed by bankable guarantees) can bridge this gap.

![Bulk Trader as an Interim Central Purchaser](image)

*Figure 6: Bulk Trading Companies of the Power Sector*

Source: Adapted from [Nnaji 2011](#)

4.6.3 Fundamentals of the Electricity Market

Electricity is the same terminology product used all over the world. The market itself varies from country to country only in the structure policy, stage of its development and in the trading arrangement. Naturally, electricity market consists of Generation, Transmission, Distribution and Retail in an inter-dependent chain. In the electric sector they are two broad types of markets which are; the wholesale and retail market place. Energy is produced within the wholesale market place, and consumed at the retail market place, with transmission and distribution serving as transport channels. It is noted that KWh flows from the wholesale to the retail market, through the transmission and distribution networks, while revenue flows from retail to the retail market place, in the reverse direction. The System Operator and Market Operator provide services that ensure technical and commercial stability in the market respectively.

However, full energy generated at the wholesale market place do not get to the consumers in the retail market due to system loses, but payments for full energy generated get back to the generators through loss

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adjustments. The entire electricity market is tied together by contrast, with the buoyancy of wholesale trading, depending on the efficiency of retail trading.

4.7 Market Failure
A market failure is a situation where market fail to allocate resources efficiently. It means, there exists another conceivable outcome where an individual may be better-off without making someone else worse-off. A departure from the market equilibrium that would have been obtained in its absence (Bjornstad and Brown 2004). To some, it is a departure from equilibrium that a fully informed, yet benevolent and empowered, central planner could restore. Market failures can be viewed as scenarios where individuals’ pursuit of pure self-interest leads to results that are not efficient - that can be improved upon from the societal point of view.

4.7.1 The case of Market failure on electricity in Nigeria
Lack of power (electricity) in Nigeria largely boils down to market failure resulting from bad policies. Despite investing over billions of dollars in the sector in the past 15 years, the total electricity supply as at today is less than 4000 MW for a country of over 170 million people. The situation is made worse by the fact that Nigeria sits on 187 million SCF of gas, one of the largest energy resources in the world. By all indication, Nigeria’s power sector reform is fraught with difficult road blocks but none is more daunting than the fact that the policy implementation veered off failing to steer the original direction of the roadmap. The first main detour was at the juncture where political cronyism crossed the entire process. Major public electricity assets under the privatization exercise were sold off at ridiculously below market prices to a retinue of Government cronies who only lacked the technical capacities and expertise but also the genuine interest to drive home the power vehicle (Vanguard Nigeria, May 26, 2015).

Where we are today
After the privatization of most of the power chain by the last Government, it is obvious that the whole power chain is in need of revamp from Generating companies (Gencos), Gas producers, Transmission Company of Nigeria (TCN), Distribution companies (Discos), NERC and NBET.

GENCOS
The biggest problem and opportunity today with Generation lies with the 10 NIPPs with a capacity to produce 4,774MW which are near 70 percent completion but for which there seems to be no policy from the current Government in moving ahead with the privatization.
Getting the NIPPs right can easily double Nigeria’s production capacity to over 10,000 MW in about 2 years. This would entail the government. Moving clearly to restart their privatization and also freeing up Gas space, by so doing would enable gas get to the plants as they are all gas fired.

TCN

The Transmission Company of Nigeria (TCN) is one of the weaker links in the power supply chain. Even if the country double its power generating capacity to over 10,000MW, the TCNs existing transmission system, is only capable to of delivering about 7,000MW of generating to the distribution companies (DISCOs). Trading points, and is inadequate to meet expected growth with NIPP and various IPP generation projects coming online.

Inadequate maintenance of the transmission network over the years has also resulted in high technical losses on the transmission network getting TCN right will mean that the biggest clog in the wheels of Nigeria’s power sector has been solved and transmission can keep up with growth in generation.

One of the method in solving the situation is to provide adequate gas supply to the available power plants in the country. Nigeria’s power problem no longer hinges on lack of power stations but failure to provide the plants with abundant natural gas in the country.

Another case is the issue of tariff increase. As of 2005 only 64 percent of billed revenues were collected, compared with 81 percent in the resources-rich peer group (Foster and Pushak 2011). There should be no justification for tariff increase, as the Nigerian Electricity Regulatory Commission (NERC) are been pressured to increase electricity tariffs as it finalizes the review of the requests presented by the Distribution Companies (DISCOs). According to Mr Obong Eko, Assistant National Secretary Nigerian Electricity Advocacy Network; that the tariff increment is not fair on the customer because DISCOs have no basis to demand for any increase. He argued that DISCOs were not following the parameters set for them by the regulatory body, which was why they always complained of not making enough revenue. Further stated that, one of the parameters is that the DISCOs have not metered all their customers. He stressed that only about 30 percent of electricity consumers nationwide were currently being metered (thenationonlineng.net, December 22, 2015).

It is undeniable that with the revised 2012 tariff structure, Nigeria has one of the median electricity rates in the world. In mid of 2012, NERC increased electricity tariff at a rate of N11 (0.06 $) and N12 (0.07$) for middle class consumers.

Highest income consumers living in area designated as R3 and R4 paid higher rates- as much as N23.71 (0.12$)/Kwh with fixed meter charges of N21,256.30 (107$) and N118,830.56 (598$) respectively (Vanguard Nigeria, March 5, 2013). This cost shows that tariff regime is vital to the recovery of expansion and efficiency in the sector. It will be of good advice for the government to get the market signals right so that prices can reflect the true cost of producing and consuming power.
It would be recalled that during the reforms of the power sector that leads to the privatization of the sector in 2013, which also leads to the split of the once PHCN to different companies known as the Local Distribution Companies (LDCs). It shows that preferred bidders for distribution and generation companies was carried out and awarded. There were allegations of misdeeds in the bidding process. An allegation that political brinkmanship was exercised in the process, as past political and military leaders were the beneficiaries of the privatization process, while excluding the main players with more experience in the sector out of the bidding process. This led to the former minister of power (Prof. Barth Nnaji) during these period losing his job during the process (Vanguard Nigeria, March5, 2013).

The issue of transparency and corruption was also a major point. Case for the awarding of contract for the transmission rights for the power sector, also raise the issue of transparency and political dealings, in which the contract was given to a Canadian firm Manitoba Hydro Power at a cost of about $23.7million (or N3.7billion naira). As there were some roadblocks to the execution of the contract for the takeover control by Manitoba. It is axiomatic (and supported by the empirical evidence) that corruption discourages private investment, retards growth and inhibits poverty reduction efforts. In the power sector for example, the delivery of energy from generation to transmission, to wholesale distribution and finally to retail distribution. Corruption can occur anywhere along the line. In generation for example, it can occur in the licensing stage – where government officials might be tempted to ask for kickbacks in the issuance and renewal of generation licenses. Also, contracting for power purchase Agreements with state entity including payments for power generation can attract corrupt practices.

**Regulatory Failure:**
Allegations have been raised after the privatization of the generation and distribution segment by the federal government, that the process was heavily compromised and flawed, according to senate ad-Hoc Committee on Power. The committee Chairman Senator Abubakar Kyari alleged that some member of staff of the Bureau for Public Enterprises (BPE) were board members of some of the registered power generation and distribution companies. While former Minister of power, Alhaji Bello Suleiman, urged the Federal Government to investigate the privatization of the power sector carried out by the BPE. He stated that “with all due respect, there is an urgent need for independent scrutiny of the privatization exercise in the privatization exercise in the power sector. The perception is that it has not been transparent” (thenationonlineng.net; December 22, 2015).

**Why Power Failure Persists:**
President Muhammadu Buhari said, sabotage and theft of gas were undermining efforts to increase power supply. He noted that the government has a reduced role in the sector due to the privatization of the institution under PHCN, in the process of which, he said, the facilities “have been sold to a number of interest groups”. The president said with increased surveillance, power supply will increase.
Chapter Five

5. About Lagos State and FTZ

Lagos is located in the Southwest of Nigeria, covering 3,345km and with population of more than 18 million. It is the economic, financial and trade hub of Nigeria as well as the center of the country’s marine transport and aviation. Lagos is the home of over 60% of Nigerian business enterprises and accounts for 80% of the country’s total trade volume of import and export.

5.1 Policy on FTZs in Lagos

5.1.1 Policy framework for investment in Lagos State

Lagos state government has the largest policy space in terms of encouraging investment at state level to support economic growth and sustainable development. These areas include: the resolution of business disputes, where Lagos has proved to be a forerunner in promoting innovation and alternative dispute resolution mean; access to land for investors in Lagos state etc.

5.1.2 Free Trade Zones and investments incentives

To date, Lagos State puts strong emphasis on the development of Free Trade Zones (FTZs) in its efforts to attract investment into the state. FTZs in Lagos are administered by the Nigeria Export Processing Zones Authority (NEPZA), a federal agency under the federal Ministry of Industry, Trade and Investment. They are currently five FTZs in Lagos, Table 1.1 shows the list of the zones that are operational and three awaiting approval (OECD.). The question be to ask is if out of this zones that are already operational, which of them has really impacted to the economy, have they create jobs and serve as source of income to the economy through FDI or other means?

While the development of Lekki Free Zone is an ambitious initiative with the potential to generate high levels of employment, it is important to bear in mind that its development should not be a substitute for State’s larger trade and investment reforms efforts. To the contrary, international experience suggests that the positive impacts of free trade zones depend on the degree to which they are integrated with their host economies and overall investment climate reform agenda (OECD.).

FTZs in Nigeria are often accompanied by investment incentives including fiscal incentives. Specific incentives exist in Lagos state and they are coordinated with national regulations by focusing on areas where the state has legislative powers.
Table 5: List of FTZs in Lagos

<table>
<thead>
<tr>
<th>Name</th>
<th>Ownership</th>
<th>Date of Designation</th>
<th>Status</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagos Free Trade Zone</td>
<td>Private</td>
<td>2002</td>
<td>Operational</td>
<td>Manufacturing Oil and Gas Petrochemicals</td>
</tr>
<tr>
<td>Airline Service Export Processing Zone</td>
<td>Private</td>
<td>2003</td>
<td>Operational</td>
<td>Food Processing and Packaging</td>
</tr>
<tr>
<td>Snake Island Integrated Free Zone</td>
<td>Private</td>
<td>2005</td>
<td>Operational</td>
<td>Steel Fabrication, Oil and Gas, Sea Port</td>
</tr>
<tr>
<td>Ladol Logistics Free Zone</td>
<td>Private</td>
<td>2006</td>
<td>Operational</td>
<td>Oil and Gas, Fabrication, Oil and Gas Vessels, Logistics Manufacturing, Logistics</td>
</tr>
<tr>
<td>Lekki Free Zone</td>
<td>State Government/Private</td>
<td>2008</td>
<td>Operational/Under Construction</td>
<td>Manufacturing, Logistics</td>
</tr>
<tr>
<td>Nigeria Aviation Handling Company</td>
<td>Private</td>
<td>-</td>
<td>Awaiting Approval</td>
<td>Cargo Hub, Trans-Shipment and Warehousing</td>
</tr>
<tr>
<td>Eko Atlantic City Free Zone</td>
<td>Private</td>
<td>-</td>
<td>Awaiting Approval</td>
<td>Finance, leisure, real estate, shopping malls, corporate business, commerce</td>
</tr>
<tr>
<td>Airport Free Zone</td>
<td>NEPZA/Federal Ministry of Aviation</td>
<td>-</td>
<td>Awaiting Approval</td>
<td>Warehouses, Processing of manufactured goods, tourism, light industries</td>
</tr>
</tbody>
</table>

Source: Adapted from OECD Investment Policy Reviews: Nigeria 2015

5.2 Case Study: Lekki Free Zone

Lekki Free Zone (LFZ) is located on the tip of Lekki Peninsula to the Southeast of Lagos state. It borders Lekki Lagoon in the North and faces the Atlantic in the South with a beautiful coastline of about 5km stretch. As one of the fastest growing areas in Nigeria in recent years, Lekki area will soon be turned into a modern satellite township of Lagos metropolis. The Lekki Free Zone consists of a 16-500-hectare (165km2) zone located on the Lekki Peninsula adjacent to the Atlantic Ocean to the Southeast of the city of Lagos. It
was launched in 2004 as a vehicle to fully utilize the investment potential of Lagos and with the objective to create at least two million jobs. The zone is designed to be a multi-purpose facility suitable for a variety of activities including: oil and gas; petrochemicals; electronics; mechanical (light and heavy equipment, machinery and automobiles); pharmaceuticals; textiles; shopping, warehousing and transportation; and banking and financial services. The Lekki Free Zone (LFZ) initiative is part of a wider plan to develop the Lekki sub-region into a self-sustained model city. As such, the project will also include tourism, leisure and residential development opportunities.

In addition, LFZ has easy access to the existing international airport and sea port of Lagos, which are respectively about 70 km and 50 km in distance. Moreover, the new Lagos international airport is only about 10km from LFZ. In May 2006, the Chinese consortium in the name of CCECC-Beyond International Investment & Development Co. Ltd, as the majority shareholder, entered into the Joint Venture with the Lagos State government and the Nigerian partner “Lekki Worldwide Investment Ltd” to establish the Lekki Free Zone Development Company (LFZDC) in Lagos, Nigeria, which is authorized by both the Nigeria Federal Government and the Lagos State Government as the solely and legally competent entity to develop, operate and manage the Lekki Free Trade Zone project.

Lekki Free Zone Development Company (LFZDC) in October 2006, embarked on the Phase 1 Development of LFTZ, named as “China-Nigeria Economic & Trade Cooperation Zone” (CNETCZ) which covers approximately 1200 hectares. The project is aimed at developing, operating and managing a Free Zone in accordance with International practice by making full use of the advantages of Lagos as being the important and compatibility of resources, optimizing the Nigerian Industrial structure and improving its national living standard.

5.2.1 Overall Layout and Industrial Orientation

Overall Layout

According to the master plan of the 30 square kilometers, the Lekki Free Zone project is expected to be developed into four main sectors of investments. The first sector encompasses the integrated commercial service area with professional market, trade exhibition, amusement park, hotel, cultural center, golf course, hospital and school. The other sectors refer to the three leading functional areas, namely, the General Development area in the north, the industrial park in the south west and the logistic and warehousing area in the southeast. The phase one of Lekki Free Zone (LFZ) is planned to be an industrial mega city which will be home for commercial and trading investors, manufacturing, warehousing, logistics and service industries.
Eventually, LFZ will be developed and transformed into a modern multifunctional township for investment, trade, and finance and residential with complete infrastructure, sufficient service and supporting facilities, which would serve as a successful model and landmark of the cooperation between China and Nigeria.

**Industrial Orientation**

The industrial orientation of LFZ is defined as follows:

Considering the investment environment, the economic development trend as well as the market demand of Nigeria, LFZ will give priority to manufacturing, warehousing and logistics as the leading industries in the Zone, and take urban services and real estate development as the supporting industries in a bid to achieve rational distribution of industries, markets, and population, thus gradually turning LFZ into a new industrial city as well as a multi-functional special economic zone of Lagos metropolis, comprising industries, commerce, trade, finance, business, residential, tourism, amusement and recreation, culture, education, etc. Eventually, LFZ will be turned into a satellite city of Lagos, an ecological city with harmonious development, a dynamic city for suitable residence, a modern industrial city, demonstrating as a successful model of Nigerian economic development.

**Investment Focus**

LFZ will focus on the following areas of investment and warmly welcomes investors from all over the world to invest and establish their businesses in the zone either in the form of sole ownership or joint venture partnership:

1. Electrical home appliances and electronic products, textiles and garments, building materials, processing of agricultural and agro-allied products, machinery manufacturing, automobile assembling and auto parts manufacturing etc.
2. Oil, natural gas tank farms and chemical industries, transportation, warehousing and logistics, R&D of science and technology park etc.
3. Commercial business, real estate development, tourism and leisure industries, dusty free trade markets, shopping malls, hotels, schools, hospitals, office buildings, tourist resorts, and golf course etc.
4. Infrastructure investment include: sea ports, power plant, water plant, sewage treatment plant, natural gas pipeline, expressway and mass transit facilities etc.

5.2.2 Investment Advantages

**Regional Characteristics:**

LFZ is about 50km from Lagos city center, 70km from the international airport, only 10km from the new Lekki international airport, 50km from Apapa- the West Africa’s largest harbor in Lagos, 55km from Lagos
railway station. The planned Lekki new harbor is located right inside the zone. Lekki Free Zone (LFZ) will be link by roads and railways with almost all commercial states of Nigeria and the neighboring countries.

5.2.3 Market Potential and Prospect
Domestic Market:
Over the previous years, Nigeria has been experiencing serious lack of commodities and products especially the daily consumables due to its weak industrial capacity and imbalanced economic structure. As a result, more than 90% of products have to be imported from overseas. Moreover, LFZ can not only target the local market of Nigeria with the population of 170 million but also have the easy access to the neighboring countries in West and Central Africa with a total population of about 500 million. Therefore, the domestic market of Nigeria is of huge potential and sustainable development prospect.

African Markets:
Africa: the market condition of most African countries is quite similar to that of Nigeria, and the recent years have witnessed rapidly growing demand for electrical and mechanical equipment, light industrial products and consumer goods. In particular, the African consumers are generally fond of the Chinese products as reasonable prices with considerable durability.

European and America markets:
Traditionally, there has been a close trade relationship between Nigeria and many developed countries including the United States, UK, France, Germany, Russia and Japan. The exportation of Nigeria’s textile products to European and American markets quota restriction and granted favorable customs tariffs. In addition to such favors and incentives, the unique geographic location of LFZ is not only to provide a short-cut shipping route for exports to European and American markets, but also have the easy access to almost all markets and countries in the world.

5.2.4 Share Capital Structure for LFZ
The project started as a joint venture between a consortium of four Chinese companies (60%), the Lagos State Government (20%) and its sub-entity, Lekki Worldwide Investment Ltd (20%). Lekki Worldwide Investment is an investment company, owned largely by the Lagos State government: 40 percent of Lekki Worldwide Investment is owned by LSDPC, the Lagos State government company of Lagos State. The Lagos state government allocated 16,500 ha of land of which 3,000 has been officially transferred to the developer so far. The state government provides the land and the 50–year right to operate the zone to the Chinese consortium. The State government is also expected to contribute towards construction costs.
In March 2006, a Chinese consortium, CCECC-Beyond was set up in Beijing. By May 2006, the CCECC-Beyond entered into a joint venture with the Lagos State government to establish a special purpose vehicle, the Lekki Free Trade Zone Development Company. CCECC-Beyond successfully bid for MOFCOM support in November 2007. Some changes have been made within the Chinese consortium with the most recent involving the participation of the China-Africa Development Fund (CADF) in 2009. The Chinese consortium currently is China-Africa Lekki Investment Co. Ltd (CALIC) which is an investment holding company registered in China solely for the purpose of investing in the Lekki FTZ. CALIC consists of CRCC (35%), CAF (23%), CCECC (17.18%), and JNDZ (3%).

Development Phasing and Financing

The first stage of development involves the construction works for the provision of necessary infrastructure facilities, including site clearance and leveling, internal roads, landscaping, water supply and sewage, power supply, telecommunications, gas supply, industrial workshop, warehousing/logistics/storage facilities, public/commercial facilities, residential building and environment protection facilities. This is expected to take up to five years to complete, and will encompass 109 ha. The second stage, also estimated at five years, will see the completion of construction of the remaining 45 ha of land. The total project cost is estimated at $392 million. The protection envisages a mixed use of industrial companies, service-sector companies, commercial property, residential property, and other amenities. The developer estimates that the full
development of the zone could create more than 10,000 jobs directly and many more indirectly, once the zone is fully occupied and completed operational.

5.2.5 Economic Impact and Business Environment

Nigeria is one of Africa’s largest consumer markets and the continent’s most populous country, while Lagos, the country’s commercial and trade capital, and still at a young state for business and industrial development. With the recent outlook, the country planning to diversify from the dependent on oil, to other areas such as agriculture, manufacturing, trade etc. it will be recall that the non-oil sector, largely consisting of agriculture which form 40 percent of GDP, has recently been growing faster than the oil sector and more areas of investment is still needed for untapped area in the sector.

The country depends on imports. It is estimated that almost 90 percent of finished products are imported due to the lack of competitiveness of the domestic manufacturing sector arising from investment climate challenges. The recent situation and that of the fall in oil price that the nation depends on has make most states in the country especially Lagos, to encourage manufacturing, trade, infrastructural development to the state by implementing policies, incentives that will encourage investors both locals and foreigners help diversify and develop the economic of the state and create more job opportunities for the citizens, especially the graduate youths. A better way to do this is through the development of economic zones such as FTZs in the states. The FTZ could potentially provide an efficient manufacturing and logistics platform for an import substitution strategy that will revitalize the Nigerian manufacturing sector, industrial sector, and eventually paving the way for development of the export sector.

The LFZ, could help offer access to much needed infrastructure and a streamlined business environment that would have a real impact in reducing transactions costs in the zone.

In addition to administrative efficiency, the cost and reliability of inputs and services also help decide the attractiveness of an economic zone such as the FTZ. Enterprise surveys and various indicators highlight that access, quality, cost of electricity, finance and transportation are three principal investment climate impediments in Nigeria (Iarossi, Mousley, and Radwan 2009).

First, companies lose some 10 percent of sales to power outages. Increasing supply capacity and reliability of power is a main policy objective of the government yet the constraint is unlikely to be fully addressed soon as it is a national scale in the short and medium term. Therefore, the need for guaranteed supply of electricity is an incentive that is likely to attract investors to the zones. The Lekki Free Zone development Company have taken this into consideration and have investing also in the provision of Independent Power provider system (IPPs) for the LFZ.
Secondly, external finance is a rarity in the country; only few companies with external credit requirements have access to finance. Small companies are particularly affected. Companies that do manage to obtain a loan are required to repay the loan in less time than companies in most other countries. The complexity of the application process and onerous collateral requirements are the main reasons for low banking penetration. In a drive to boost investment and manufacturing in the country especially for small and medium scale firms, the government recently encourage banks to start lending to customers, in a move to increase manufacturing and trades in the economy. Access to finance for zone development and operation as well as for the companies locating in the zones will be a key requirement for success going forward.

Thirdly, more than two-thirds of inputs are delivered by road in Nigeria and transport constraints accounts for 4 percent of annual sales losses. The LFZ is located near the major sea port and airport in the state and the zone is also constructing his own sea port (harbor). Thus, the time and cost of transport from the port of entry to the zone will be limited compared to the time and cost of clearing customs and port procedures. The LFZ have the customs office in place, in which the officials from the relevant government authorities, such as Customs, Immigration, NEPZA, etc. will be ready to provide all necessary assistance to the prospective investors and enterprises (LFZ Investment Guide, 2014).

Under the Business prospects, the zone is targeting four types of activities:

- Light industry including furniture, textile and garment, footwear and headwear production, construction and building materials, household electrical appliances and other consumer products
- Vehicle assembly including buses, trucks, tractors, motorcycles as well as construction and engineering equipment;
- Warehousing and logistics including for petroleum products, and
- Real estate development for urban services, finance, trade, hotel, recreational and business and residential facilities.

The light industry and vehicle assembly activities are consistent with the current Chinese exports to Nigeria and proximity to the Nigerian and the ECOWAS market could potentially out weight the higher production costs compared to China. According to the investment targets for the zone, it was expected to attract 175 investors in the first five years with a total investment of over $600 million. The expectation was that half of the investors will be local and one-third of the investors.

According to the LFZDC, 73 investors have signed MOU to date, 103 are registered in the zone of which more than 36 have signed investment agreements. However, the original investment targets are unlikely to be met at least within the timeframe specified. Among the companies that have signed and started operation are; MC Lighting FZE; Crown nature Nigeria FZE, H&Y International, and Sino Truck Assembling FZE.
Other investment that are critical to the success of the LFZ, is the Lekki Free Zone port, which is being developed in partnership with the Singaporean investors, and the recently announced collaboration between the Nigerian National Petroleum Corporation (NNPC) and a consortium of Chinese investors known as China State Engineering Construction Corporation (CSECC). While the other is the establishment of a crude oil refinery and hydrocarbon industrial park with the Lekki Greenfield Refinery as the flagship project. These project is been developed by the Dangote Group of companies.

5.3 Contribution of FTZ on the Power Generation in Nigeria

The use of FTZs in the country can also serve as an avenue to improve and develop the power sector in Nigeria, which by so doing will similarly create jobs (both skilled and unskilled labor force); reduce foreign exchange rates (as a way of building and providing electrical components and materials); Help in the area of economic diversification (by easing on the defendant on oil as the only source of revenue, through the encouragement of more manufacturing of products in the country, also for both small and medium scale entrepreneurs). Economic Zones, such as SEZs and FTZs have been use through different reforms that are in need for solving critical economic solutions for various countries that has implemented it for their country’s use.

The Government of Nigeria can take a clue from these countries and analysis a more suitable approach for the use of this economic zones or FTZs in the country. China which is one of the beneficiaries of the
economic zones (with the use of both EPZs, SEZs and FTZs), have been able to make use of this model in places such as the Beijing SEZs in Beijing; Shanghai EPZ etc.

Focusing on the implementation of policy that will help improve and favor the FTZs in Nigeria will be a start, and also by putting it to law that each FTZs in the country most at least make use of the raw material in the states they operate and manufacture goods from this raw materials, both for consumption and export. Nigeria is blessed with abundant natural resources and according to Nigerian Export Processes Zone Authority (NEPZA), the country has about 32 FTZs, of which about half of the states in the country can boost of one (even duo some are still under construction). These will also serve as a way of encouraging these zone to be more effective and useful, as well as make those state they operate on reduce the over reliance on the handout and monthly allocation they get from the Federal allocation. It will also, help the state to increase their Internal Generate Revenue (IGR) of the states. But for the state to be able to benefit or derive from these firms operating in these zones, they also have a role to plan, which are improving state policies on investment and investors; creating enabling environment through good roads, transport, water, education, electricity, easy and affordable land use for these zones and firms operating in them.

5.4 How FTZ can contribute to the Development of the Power Sector in Nigeria

Ways or methods the FTZs can help ease and reduce the problem of electricity in the country are:-

**Manufacturing**

Most Free Trade Zones, are focus on manufacturing, and a more productive way for the FTZs in Nigeria to be more effective, resourceful and useful for the economy of the country is through the production that is urgently important and vital for the development of the country which will also, put these zone among the competitive ones that can be recognize around the world. Some FTZs in Nigeria have the capacity to produce electrical components such as cables wires, meters, transformers, pipes and pipelines which can be used for example, for transferring gas and underground cables for the electricity companies. While some of these zones can also be used as a construction and contractor firms which will be operating in the zone. Among the ones that can be class in the categories for the manufacturing of electrical components that can be produce locally in the country instead of importing are:-

1. Lekki Free Zone (LFZ):- The Lekki Free Zone (LFZ) is one of the biggest FTZ in Nigeria, which is also specialized in various sector of production and trade. The zone could be termed as the economic hub zone of not only the state it operate which is Lagos state, but of Nigeria in generally.

   The LFZ is more into manufacturing sector, in the areas of household electrical appliance, Vehicle assembling including buses, trucks, tractors, as well as construction and engineering equipment. It will be of good advantage if the government of Nigeria can collaborate with the zone (including other zones as
well), for the manufacturing of electricity and power components. As these steps have been done in China, with some economic zones in that country, where the government of some of the regions in the country collaborate with them. Examples of such zones are the ones in Shenzhen, Shanghai and Guangzhou. The government can also help the zone by wooing companies in the line of Electricity components to the zone. Companies such as ABB, GE are lot more are a reputable organization in the world of manufacturing of electricity components, and for them producing local components for both consumption and export will be to the benefit of both parties. Also, as most of the raw material for the production can be source here in the country.

(2) Calabar Free Trade Zone:- The Calabar Free Trade Zone (CFTZ) is the first free trade zone in the country and the zone is also into manufacturing, oil and gas and logistic service. It fits in the categories that can also manufacture electricity components for the use in the power sector in the country. Company such as General Electric (GE), truck assembling plant from China, and other manufacturing firms are based in the zone. These companies can be encouraged to put into their line of manufacturing, a research design and approach for the production of electricity manufacturing component for its use in the country and similarly for export. GE is known as a reputable company in the manufacturing of electricity components such as transformers, cables, electric meters, meter fuse etc. One of the Company’s biggest office in Africa is actually located in CFTZ (Premiumtimesng.com, July 27, 2013). Other manufacturing zones that qualify in these category is the Ogun-Guangdong Free Trade Zone (OGFTZ) in Ogun state. The OGFTZ is also planning to build a power plant in the zone, to add to the number of manufacturing firms located at the zone. It also, produce electrical and steels in the zone, as Ogun state is one of the home of various mineral resources that has attract the location of the free trade zone in the state.

**Job creation**

The zones should be encouraged in creating more jobs for the people, especially the locals around them, just as it’s done in other free trade zone in the continent and other parts of the world (Zeng 2015, Farole and Akinci 2011, Stein 2007) stated that, out of the countries in the developing world that have implemented the use of FTZs and other economic zones, Africa account for merely less than 10% which is relatively low compared to other region in Asia and the Americans. Even duo African countries are late comers in the use of FTZs and SEZs. Just few countries can boast of good number of employed work force in the zone in those countries, among this few countries are Egypt, Kenya, Mauritania, and South Africa. About 51% of the total work force in these zone in Sub Sahara Africa (SSA) are from South Africa alone (Stein 2007).
The government of Nigeria (both at the Federal and State level), needs to find a way by encouraging firms in these zones in the country to increase the number of employees.

**Foreign Exchange Savings**

The increase in the number of manufacturing in these zones will help develop local content of products produced in the country, which can also be use and exported. The aim of the FTZs and other economic zones is to mostly produce/manufacture locally and export, as a way of not only developing and boosting the manufacturing sector of that country but also as a way to generate foreign exchange reserves for the country. Nigeria has been known as one of the countries in the world that over dependent on foreign products, but the recent ban on some products in the country by the government, will help increase the number of manufacturing firms in the country, most especially in these zones across the country. By so doing also, it will make the citizens to start patronizing locally made goods in the country.

5.5 The Situation of Power (Electricity) at the Lekki Free Zone

Electricity has been the backbone of any industrialized economy, especially in the manufacturing sector. Gone are the days most sectors in Nigeria, such as the industrial, manufacturing, trade etc. always depend on the electricity providers of the country to operate their firms, not that the power outages does not occur during this period, but the fact that in thin the 80’s and early 90’s the electricity in the country was not that worse compared to the late 90’s till date. An ordinary Nigerian firm experiences electricity failures or voltage fluctuation about seven times per week, each lasting for at least two hours without the benefit of prior warning (Adenikinju 2005).

They have been rapid growth in the economy over the last 10 years till date has seen the economic of Nigeria grow to the expense, that in 2013, the nation’s economy crawl back to top two in Africa. But as the economy continue to grow, the Nigerian power sector continue to decline as there is no preparation in meeting up with the responsibility to cater for the service of economy especially the industrial sectors, that requires the usage most. These have make firms in the country both private and local, multinationals and state-owned, to take responsibility of electricity into their own hands, by finding a way of not dependent on the electricity provider in Nigeria. (Adenikinju 2005), listed five essentially ways by which firms may respond to unreliable electricity supply, there are choice of location, factor substitution, private provision, choice of business and output reduction. But not every firm have the luxury to meet up or have the opportunity with these five approach especially in developing countries such as Nigeria. Out of the five, the best and easy approach for majority of the firms in Nigeria (including the economic zones), is the use of private provision method. The use of generator for both household and firms, was the only option for the
consumers of electricity in Nigeria. To verify these, Briamoh and Okedeyi (2010) stated that Nigeria is one of the largest if not the first on list of countries for the purchaser of standby electricity plants in the world.

On like other free trade zone in Nigeria that mostly rely on the Nigerian electricity providers (the LCDs), and by substituting their own electricity generating plants as backup. The Lekki free zone is making use of its Independent Power Supply (IPS), in generating electricity for the zone, with the installation of 12MW (footnote: the 12MW provided is powered by four of General Electric (GE)’s Waukesha gas enginators. With three Waukesha 275GL+ and one VHP 7104GSI gas enginators. Making this project the largest of its kind in Sub Saharan Africa with the use of both GE’s 275GL+ VHP enginator technology).

Power generation is a challenge that is connected with the non-availability of piped gas along the Lekki corridor. The federal government gave the concession on piped gas some years back to a company called GASLAND. The company has not been able to muscle up off takers for the project it completed. The issue of providing uninterrupted power has to do with steady supply of gas and as such the Lekki zone management is depending on a credible and reliable supplier of gas to make power generation a reality in the zone. Currently, the zone management has completed a dual fuel technology-12MW transitional power plant in the Lekki free zone to cater for investors immediate power needs. The power plant is expandable at the same capacity and is being powered with CNG and LNG to sustain steady supply of electricity for the zone. The 12MW generated presently is enough for the current level of investors at the zone and the transmission and distribution grid was completed in March of 2016.

The federal government stated that they are not leaving any stone unturned in ensuring that stable power supply is guaranteed in the economic zones and other parts of the country, and that is the reason also why the Dangote Group has been encourage to undertake the project of building infrastructure for gas transportation from the existing source on the shores of Escarvos to the Lekki free zone. This will be a permanent solution to the issue of power generation in the zone. The project is billed to commence in September 2016.

5.6 Challenges and Recommendations

Challenges
The Lekki free zone is facing a number of challenges ranging from environmental to community issues, government support in terms of external infrastructure and then finance.
Environmental Challenges: The total area earmarked at the first phase of the Lekki free zone project is substantially swampy and such development of infrastructure becomes highly expensive for the zone management.

Community Issues: There are still disturbance from the community at some location within the project area, as a result of this construction work has been a bit slow down. The host communities have been complaining about government acquisition of land in the area. The disagreement between the management of the zone and the community led to the death of former managing director of the Lekki Worldwide Investment Ltd, Mr. Tajudeen Disu. The incident occurred last year, in which they was a clash between a community in Ibeju-Lekki local government and mobile police officers within the area, in which the formal manager was among other people killed during the incident (thisdaylive.com, March 25, 2016).

Recommendation: The Government and the zone management have a role to play in making sure those affected with the issue of land claimed by the Government are compensated accordingly and they should also be a regular meetings by the government officials, the zone management and the citizens in the community on the effects and benefits of the LFZ to them and the nation in general.

Provision of External Infrastructure:
Issue: There are still hope of getting the government at both state and federal level involved in providing external infrastructure to ease traffic and vehicular movement when activities kick off at full implementation of the project. As the development of external infrastructure that was supposed to be the responsibility of government for rapid growth zone was left for the zone management to develop despite limited resources.

Recommendation: The Federal and state Government need to jointly establish an overall infrastructure development program that will help ease the once carried out by the zone management of the LFZ, and to also include a realistic timeline and financing arrangements in place including through PPPs. Similarly, the regulatory framework for IPPs and provision of connectable road networks are critical for the LFZ and needs to be developed and approved.

Finance: The volume of funding required for the Lekki free zone project is huge that the entire financing structure will take some time to be raised. The joint venture partners are doing their possible best to ensure that development progress is not stalled as a result of staggered financing. The recent foreign exchange policy introduced by the Central Bank of Nigeria (CBN) has adversely affected the smooth operation of the free zone because all transactions in the Lekki free zone are billed in dollars.
Recommendation: Provision for financial support by the government for the continuing works at the LFZ should be allocated in time without delay, as this is one of the areas to show to the investors and their partners that they are really serious in the development of the LFZ project.

Electricity Challenges

Issue: There is currently no source of natural gas for the entire Lekki axis and as such it has been difficult to attract heavy duty industries that are dependent on natural gas for their operation. Also, the Lekki free zone transitional independent power plant is currently been fuelled with liquefied petroleum gas which is more expensive in running cost.

Recommendation: Support for the supply of natural gas by the gas companies to the LFZ should be encourage by the government to make operations at the zone function. They should be a discussion between the management of the LFZ, the government and the Nigerian National Petroleum Corporation (NNPC) and other stakeholders in the oil and gas sector to solve the problem of lack of gas to the zone. The government should play more active role in this position.

The LFZ has been facing other challenges that needs to be addressed accordingly. These include creating a more clear and robust business case and financial model for the project, greater clarity on planning and financing of the project, strengthening of the legal, regulatory and institutional framework for FTZ development and management, the capacity by the Government (both at the state and federal level) to support and help coordinate various private investments in the FTZs in the country, especially that of the LFZ, including the development of the Lekki port, the propose Lagos International airport at Lekki, and help deliver high quality support services to the zone. The effective management of environmental and social impacts and establishing stronger linkages between the zone investment and the local economy. The Nigerian FTZ project has been in place since 1992, and over 24 year period since then it has not delivered the expected results the citizen are clamoring for in terms of investment, employment and diversification of economy activity. There are a number of areas both at national level and at the level of the LFZ where the project and its execution can be improved to increase development outcomes. These are as follows:

i) Clarifying the partnership agreement based on market and demand analysis with the benefit

Issue: The LFZ is a concept of both public private partnership (PPP) between the Lagos State Government and a private Chinese consortium supported by the Chinese Government. The state of the project as of today is at 20% completion, as the project is still at a developing stage, but there is no clarity in terms of its actual goals, performance indicators and concrete time plan. Risk mitigation measures are not evident and in the absence of up-front robust market and demand analysis, unrealistic initial expectation have been scaled back, plans altered and benefits of the project is not totally cleared to all parties (i.e. which includes the
citizens of the state). With the revised master plan, there is now an opportunity to develop a new business plan based on PPP model that incorporated good practice principles of such PPP transaction.

Recommendation: The Capacity of the Lagos State Government and the Chinese consortium to develop and execute a practical and market oriented FTZ development agreement based on a PPP model needs to be revisited and strengthened. The benefit of the LFZ project should be for all parties including the citizens and the general economy of the nation as well. It will be recall that in the past and even up till date most project similar to this magnitude carried out by the government of Nigeria (both at the state and federal level) has mostly been to the benefit of few Nigerian individuals and particularly the foreign partners or investors and nothing to show for, in terms of benefits for the country. Therefore, it should be a lesson learned by the government of Nigeria to make sure any agreements, bilateral trade or business investment partnerships must be made transparent to the nation and also to make sure the country benefit from it on a long-run as failure for these will show to the people as another elephant project to enrich themselves (the government officials).

With the revised master plan, there could be an opportunity to revisit the existing agreements to introduce mutually acceptable performance indicators that could also be used in a standard form across all FTZ development including that of the Lekki free zone. This will enable also more robust FTZ-related PPPs in the future, and ensure that future FTZ developers will be able to participate on a “level playing field” basis.

ii) Survey on Companies to learn more about how they experience life for upstarts at the FTZs

Issue: Firms, especially the upstart ones at the LFZ has not fully been supportive on some areas that could have helped the zone management and the government in knowing some critical areas that needs addressing. Some firms in the LFZ, mostly the local ones are not use to FTZs and they need to learn and understand the benefits and challenges they and their customers might face in the future at the zone.

Recommendation: The FTZ management, such as that of the LFZ management, the NEPZA and the Government needs to constantly inform and recommend for instant the use of regular survey approach to be carried out among firms at the zone, most especially the upstart firms that are new to FTZ, in order to help them understand their challenges and how it can be solved, with the help of the authorities and agencies in charge. The government cannot know or solve all the problems they might be facing but they could help by alerting them on situations they might encounter.

Also, the firms at the zones can help give suggestion or solution through the use of the survey to the government and the zone management. Finally, the firms operating at the LFZ (and other zone in general) must also be ready to help individuals, organizations or researchers that wants to know or get some information from them about the zone their experience and problems, as they might be the ones that will help solve the situation at the end of the day.
iii) Political Economy

Issue: Political economy is also one of the critical challenges that is affecting the progress of not only the LFZ but the entire economic zones in the country in general. If the government officials are not willing to put their political and selfishness aside for improve and development of the nation, their impact will lead to a negative on the LFZ and other economic zones in the country.

Recommendation: The need to revisit the policies and framework in the implementation of economic zones such as the LFZ, in order to make sure that outdated rules and reforms that does not support the progress of the FTZ are changed.

Secondly, the problem of lack of infrastructure in other sector are having an effect on the LFZ and other economic zone in the country. The case of the power sector that was privatized by the Government few years back was not transparent, as it was political motivated by some politicians with their friends and relatives in collaboration with the Bureau for Public Enterprise (BPE) in which some of the companies that brought the sold PHCN are political office holders and not the genuine private firms that have the resources (both the financial and technical know-how knowledge) to change the situation of the power sector for the better. The effect is part of what the LFZ are facing, which is poor supply of electricity to the zone for the manufacturing and other sector firms operating at the LFZ and as well as at other FTZs in the country. These is due to the fact that the privatization of the power sector was not in the hands of the experts in the sector (people that knows how to run and manage the sector effectively). To solve this problem, they should be a revisit to the sale of the power sector by the government, and if there are findings of malpractice by certain individuals or group, they should be made to face the law and punished for putting the nation and the economic zones in these situation, which will also serve as a lesson for others coming on board.

Finally, is the problem in the delay in passing of the 2016 budget into law, this had brought down the pace of building the LFZ, as works are been stopped due to lack of funds to finance the project. Which was due to paddling of the budget by the Legislators, the proposed budget was supposed to be sign in January but was drag between the executives and the Legislators till May this year. The effect has crippled economic activities in the country for months. This ideas and behavior by the political class in the country has to change if they is going to be a way forward and changes in the economy. The government should make sure the county comes first and they should not be any delay in the passing of the future budget and paddling of the budget either. The government should not make the neo-classic statement on the effect of the economy by the government be right, as it stated the non-supportive of the government’s approach towards economy development.

v) Government Failures
Issue: The failure by the government in developing the economy has affected the LFZ and other sectors of the economy. Their response to situations such as market failures is not encouraging. Market failures is generally what legitimize government’s intervention, and that is the reason we have a government. Another issue is the failure by the government to prioritized the diversification of the economy, by investing and give attention in other areas like available use of the economic zones such as the LFZ as a vehicle to develop and boost the manufacturing, trade and use of local content and other mineral resources and manpower that are bound in the country.

Recommendation:

When an industry in the private sector is not performing efficiently or effectively, there is said to be market failure. The recommendation by economists and others typically is then for government actions to combat such failure, to help reduce the situation or effect.

Government response to market failures in the power sector needs to be critically look into. The role played in the privatization of the sector needs a review and scrapped of the wrong companies that brought shares in the sector needs to look into or have their license revoked for malpractice. They should also make sure the monopoly that still exist in the power sector is removed and the government should also privatize or sell the Transmission Company of Nigeria (TCN) to a private and reputable company in the sector, this will ease the control directly or indirectly the government still have in the sector over to the competitive companies managing it, and save the wastage of tax payers money spending all these decades on the power sector, in return, it will help strengthen the businesses operation at the LFZ and other economic zones and sectors in the country.

Another areas of Government failure is the inability to implement and fulfill, over the years policies that would help improve the current situation of the country’s economy through diversification. They have been talks over the years on ways to diversify the economy from a mono-economy dependent to Multi-economy. The use of Free Zone can serve as a Model for the Government to implement various plans on project and infrastructural development in the country. It can serves as an avenue to judiciously use most of the other raw materials and mineral resources available all over the country. The Government through the use of the Free Zone Model can help put to use these resources through its use for manufacturing, for various components (e.g. electricity components for instance) and other commodities that are useful for the growth of the economy. The zone will also help create jobs, infrastructural development, innovation and technology, etc. and reduce other linkages affecting the development and government failures in certain parts of the economy.
6. Conclusion

The Government of Nigeria has recently started recognizing the important role infrastructures and industrial development can play to the growth and development of the country’s economy. The recent global economic situation, which has led to the decline in demand of Oil and Gas, which has been the major source of income for the government and the reckless spending that has also led to corruption in all sectors of the economy has made the Government to think and start introducing policies and frameworks that will kick-start the survival and development of the nation’s economy.

One of the major areas that needs priority and focus must be on the power sector in the country. Nigeria’s power sector has been ineffective, which has also lead to the crippling of the economy and well-being of its citizens. With the new Government now in place and promises been made to revitalized the power sector; the need for various uncompleted power projects around the country to be completed in time and added to the existing ones, and ways to monitor them that they work effectively and managed are put in place.

On the issue of the electricity market in the country, the failure has to do with the Government controlling and setting up price market that is not favorable to the players in the electricity market. The need for Government of Nigeria to reduce the power they have over the electricity market tariffs will be a welcome development for the sector and for them to try to open up the market for more investors to increase competition, quality and performance will develop the sector. Also, the Government are urged to bring all the parties involved, the LCDs, GENCOS, TCN, Oil and Gas companies, NERC together and resolve the problem going on among them and also inform them to shelve the selfish interest at all cost syndrome, and work for the greater good of the country.

Nigeria is a country with huge economy, and abundant resources with different diverse people that can all benefit from the advantage of her resources, with everyone having a role to play to achieve this goal. They have been failures in several areas in the economy of the country for decades, mostly due to mismanagement, policy implementation, and corruption in the government which has led to underdevelopment of the country. These failures is not only by the Government as the people also contributed to it as well. Government has a role to play likewise the citizens, the need for the people of Nigeria to start practicing what they preach, as a way of contributing to the development of the country one way or another is now not tomorrow. This is because a failed Government also translate to failed people. It is time for the people to start questioning their leaders in roles they play in Government, hold them
accountable for what they are doing and policies they carried out. Let them know when they are wrong and a demand for change by all means must be actualized through one voice of the people on one common goal.
7. References


Pike, Andy, Andrés Rodríguez-Pose, and John Tomaney. 2007. "What kind of local and regional development and for whom?" Regional studies no. 41 (9):1253-1269.


ELECTRONIC SOURCES

http://cefolassaocoed.net/index.php?option=com_content&view=article&id=83&Itemid=88&limitstart=4


https://www.eiseverywhere.com/file_uploads/4c89fc4ccf7b9b01305474f571ba12b3_LFZ_InvestmentGuide.pdf


Nigeria’s electricity crisis is leadership failure. Vanguard News, May 26, 2015:
http://www.vanguardngr.com/2015/05/nigerias-electricity-crisis-is-a-failure-in-leadership/

The Guardian Nigeria: Nigeria’s electricity generation drops by 1,707.98MW. December 18, 2015:


http://www.vanguardngr.com/2013/03/the-challenges-of-the-nigerian-electric-power-sector-reform-2/


Appendix

Appendix 1
Semi-Structured guided questions, used when interviewing the Marketing Manager at Lekki Free Zone on (December 2015 and February 2016).
System Adopted: Voice Call and mail data collection

Questions on FTZ and Power generation:

**FTZ and Economic Zone:**
What is the difference between Lekki Free Zone and other Economic Zone in Nigeria?
What are the challenges faced by the company?
What is the level stage of completion of the zone?
How many companies are already operating in the Zone?
How is the logistic situation and area of the project?

**Power Supply:**
What is the situation of electricity in the zone?
How is the zone tackling the challenges on the provision of electricity in the zone?
What is the source of electricity at the zone?

**Government:**
What are Government’s involvement in the Lekki Free Zone project?
Ha the policy implementation on FTZs in the country impacted on the zone?
What did the zone management think about the economy reflection on the Zone and other FTZs in the country?
How can the LFZ contribute to the development of the economy in Lagos State and the country in General?

Appendix 2
The procedure that was used in selecting the companies was through a randomly sample method. Companies that were focus on are the ones in the LFZ and the ones outside the zone situated in Victoria Island, which is an industrial and residential area in Lagos state. The survey is on Electricity Supply for Business/Companies customers.
The sampling frame used in getting the contact details of the companies at the Lekki Free Zone were given by the Lekki Free Zone Management (LFZM), in which, 23 Companies operating at the zone was given (including the ones under-construction). While the companies selected outside the zone, located at Victoria Island industrial district were retrieved from an online Nigeria yellow page source. These companies where contacted by e-mails and through calls, as follow-up mails and calls were made as well.

**Questionnaire to Companies**

Questionnaires on electricity supply for companies, the country and the price/tariff of electricity.

1. What is your opinion on the electricity situation at (a) The Lekki Free Zone; (b) in Lagos State and (c) the country in general?
2. What is the name of the electricity provider for your company, are you satisfied with the service they render? Why are you satisfied or why are you not satisfied?
3. What do you think about the rates that were charged by the power company, compared to other industrial zones in the country? Are the rates higher or lower?
4. Do companies have the option to choose between the main power provider in the state which is the Eko Distributing Company and other IPPs (Independent Power Providers)?
5. How reliable is the electricity provided for the zone? (From a scale of 1-5)
   - Very poor reliability (2)
   - Poor (3)
   - Quite neutral (Not good not bad) (4)
   - Very good reliability (5)
6. Do you have your own Private Power Production (i.e. a generator)? If yes, how often do you use it?
7. Do you agree that Government should control or intervene in the electricity market and regulate price?
   - Yes or No? Please give your reasons……
8. Would you be willing to pay an increment in tariff if the power company is then able to improve its service?
9. How can the power providers in the country improve on the generation and distribution of electricity to the consumers?