
SUSTAINABLE ENERGY DEVELOPMENT IN A DEVELOPING ECONOMY: THE NIGERIAN EXPERIENCE

By

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Abstract

This research work delves into critical analysis of sustainable energy development in a developing economy, using Nigerian experience as a case study. Nigeria is a country that is blessed with abundance resources: both human and natural resources that ordinarily would have acted as a catalyst to launch the country to higher pedestal in terms of economy development but bad leadership, negligence of planning or bad planning coupled with corruptions in the governance have make this a Herculean task. The wealth of money derived from oil and gas could have been used to develop sustainable energy in the country, but those factors listed have rendered energy development a pipe dream. A country's economy, either developed or developing, can only sustain its economic growth if energy is accorded a premium place in the scheme of things. No wonder, subsequent governments in Nigeria have continued to struggle with energy development in the country. The aim and objective of the project work is to highlight other available sources of energy that Nigeria can tap into to develop her energy in a sustainable way so as to bring progress to the nation according to United Nation Commission on Environment and Development definition of Sustainable Development: "as meeting the needs of this generation without compromising the needs of future generation". Therefore, Sustainable Energy Development would eventually serve as the engine room for development: wealth creation, poverty reduction, job creations and booming of the economy that would ultimately have the chains effect of increasing the quality of life of the citizens. To support the project work: hypotheses were formulated and tested; useful recommendations were advanced that would lead to overall improvement in energy production and consumption in the country.

Keywords: Sustainable Energy Development

Introduction

The clamour for sustainable energy development for effective transformation of the countries economies is on the high rise now more than ever in the World. Nigeria is a blessed country with a great historical background that would have disproved cynics and unbelievers if only if all the humans and material resources in the country have been harnessed effectively to lift the country out of the present deplorable condition.

Nigeria gained independence from the British colonial master in 1960. Prior independence and shortly after independence, Nigeria economy depends solely on the sales of agricultural products and some few solid minerals. Then cocoa, oil palm products, rubber, ground nuts and cotton formed the cash crops that earned foreign exchange for the country while the food crops produced in the country comprises yam, cassava, plantain, okro, pepper, vegetable e.t.c. Gold, copper and iron ore that are found scattered all over the country but are in small quantities up to 1956 when oil was discovered in commercial quantity at Oloibiri in the then Eastern Region, later Rivers State (and now in Bayelsa State).

Agricultural production at this time required small input of energy for their successive production but the case had changed with the monumental increase in population; this hitherto

scenario has put lot of pressure on the available energy for both domestic and industrial production. Shell- BP (Now Shell Petroleum Development Company), the pioneer oil exploration and Development Company in the country made their first discovery in 1956 and since then many other oil companies have made substantial oil discovery in the Niger Delta Area of Nigeria. Notable among the oil companies include Chevron Nigeria Limited, Elf Nigeria Limited, Mobil Nigeria Limited, Texaco Nigeria Limited and host of other indigenous oil companies.

Statement of Problem

Energy is vital for sustaining life on earth. Energy was, is and will remain the basic foundation, which determines the stability of economic development of any nation. It is needed to increase the quality of life. Supply of energy for both biotic and a-biotic life support systems is only possible by exploiting natural resources. However, careless exploitation of these resources ultimately affect the environment in which such systems thrive. The energy problem is, thus, synonymous with ecological and economic problems.

The present efforts are therefore to find an optimal solution for guaranteeing sustainable alternate energy supply for both domestic and industrial usage. The traditional means of energy

production in Nigeria is through hydro-generated electricity. This conventional method is not adequate any longer due to population boom and their requirement for both domestic usage and industrial production; hence the need to explore another means of energy supplies to complement the traditional means of energy supply.

Standards of living, poverty, unemployment, lack of infrastructure and folding up of industries in the country have been traced to lack of steady energy supply in the country. A situation where some industries run-on diesel-powered generators that are not working at optimal capacity with the implication of transferring high cost of production to the end users (consumers) is not sustainable. For survival, many homes still cook using fire-woods, saw dust, burnt oil etc. since electricity or home cooking gas is unaffordable while vast quantity of this cooking gasses (converted associated gas) is flare-off in the country. Cutting of trees to serve as cooking materials or the use of sawdust for cooking purpose together with flaring of gasses causes both environmental degradation and pollution to the populace with the antecedent of diseases and loss of habitat for living things on earth.

Objectives of the Study

This research work is intended to show the nexus between sustainable energy development and the economy of the country. In achieving sustainable energy need for the Nigerian economy, the following sets of research objective are suggested.

- (i) to identify practical alternative energy sources for Nigeria.
- (ii) to determine the economic benefits of sustainable energy to the Nigerian economy.
- (iii) to highlight environmental benefits of sustainable energy development to the country.

Research Questions

The researcher's research questions in the study focus on the following:

The hypotheses setting in this case are to apply to developing economy in the World. Nigeria experience is used as it relate to sustainable energy development in the country.

Hypothesis 1:

Ho: Energy does not have a significant role to play in the Nigerian economic and environmental development.

H1: Energy has a significant role to play in the Nigerian economic and environmental development.

Hypothesis 2:

Ho: Economic and environmental (growth) development in the country does not depend on the energy injected into various sectors.

H1: Economic and environmental (growth) development in the country depends on the energy injected into various sectors.

Hypothesis 3:

Ho: Energy production and supply failure by the institution is not rectify by the Government policies on energy development in the country.

H1: Energy production and supply failure by the institution has been rectify by the Government policies on energy development in the country.

Scope of the Study

The project topic focuses on the Nigeria experience as it relates to sustainable energy development for economy growth vis-à-vis socio-environmental sustenance; hence, the scope of the project spans the history of Nigeria as a country and most especially the advent of oil in the history of the country. Few policies of the subsequent governments will be considered and most especially the impact of Energy Commission of Nigeria (ECN), National Electrical Power Authority (NEPA) and other agencies saddled with energy/power generation in the country.

Limitations of the Study

Every positive effort and success in life never comes easy, so also is this project work. Several constraints were encountered; chiefly among them is the difficulty in gathering data from the primary, secondary and tertiary sources. Other constraints include finance and time, which were never enough to extensively cover and effectively gathered information required for the project of this scope.

LITERATURE REVIEW

2.0 History of Energy Development in Nigeria

It is a given or statement of fact that sustainable energy development is a prerequisite for economic growth. Energy was, is and will remain the foundation which determines the stability of economic development of any nation. Conventional energy resources are not only limited on earth but also their use affects the environment. The energy problem is, thus, synonymous with ecological and economic problems. Nigeria Population stands at 120 million by 2006 Census Exercise. Few of this population that reside in urban cities and towns in the country have limited access to energy or power while the majority rural population have little or no access to electricity. While the desirability of sustainable energy is a good one but the goodwill of transforming this lofty idea into a reality still remains a pipe dream in the country, thanks to bad leadership coupled with flagrant corruptions in the country.

Nigeria Policy on Energy Development

Nigerian government has long time realized that energy is an essential ingredient for both socio-economic development and economic growth. The overall objective of the energy development is to provide energy services which are the desired and useful products, processes or indeed services that result from the use of energy, such as for lighting, provision of air-conditioned indoor climate, refrigerated storage, transportation, and appropriate temperatures for cooking.

Energy Commission of Nigeria (ECN)

The Energy Commission of Nigeria (ECN) was established by Act No. 62 of 1979, as amended by Act No.32 of 1988 and Act No. 19 of 1989, with the statutory mandate for the strategic planning and co-ordination of National Policies in the field of Energy in all its ramifications. By this mandate, the Energy Commission of Nigeria is the apex government organ empowered to carry out overall energy sector planning & policy implementation, promote the diversification of the energy resources through the development and optimal utilization of all, including the introduction of new and alternative energy resources like Solar, Wind, Biomass and Nuclear Energy.

National Electric Power Authority (NEPA)

It was established in 1972 because of merger between Niger Dam Authority (NDA) and Electricity Commission of Nigeria (ECN). The responsibility was to produce and distribute the hydroelectricity generated from both the hydro and thermal stations across the country. The combine total installed capacity of these plants equals 5876 MW, but the combined output of the plants hardly overreaches 3000MW; and this has led to major energy crises in the country till date.

Power Holding Company of Nigeria (PHCN)

The advent of the private investors in the energy sector made government to change the name of NEPA to PHCN in 2005 with the intention of government gradual disinvestment of her interest in the sector to private participants while her renew major role will be policy formulation and regulation. The benefits to be accrued by private participation ranges from energy supply and demand efficiency, appropriate energy costing coupled with environmental management. Sadly enough, the expected private participation and the antecedent benefits are yet to materialize and what we have is change of name with the same modus operandi like the old NEPA.

2.2.3 Nigeria Atomic Energy Commission (NAEC)

The Nigeria Atomic Energy Commission (NAEC) was established through the enactment of

Act 46 of 1976 as a specialized agency for the promotion and development of nuclear technology. It has the mandate to develop the framework and technical pathway to explore, exploit and harness atomic energy for peaceful application in all its ramifications for the socio-economic development of Nigeria.

. This further confirms the fact that presently, renewable-energy use in the country is split essentially between hydroelectricity and traditional fuel wood (Akinbami, 2001).

The household sector has consistently accounted for over half of Nigeria's total domestic energy consumption. In 1989 its share was about 65%. This alone is enough to highlight the importance of the sector in the Nigerian energy system. However, an analysis of the final energy composition of this consumption is even more revealing. According to Oladosu and Adegbulugbe (1994), the energy consuming activities in the sector are cooking, lighting and operation of electrical appliances (non-substitutable electricity).

2.4 Malaysia- Example of Sustainable Energy in the Third World Countries

The country is situated in Southeast Asia. It attained independence from United Kingdom in 1957 with country capital in Kuala Lumpur. The 2000 national census placed the country's population as 25 million and the total land area is 329,847 km. The total Gross Domestic Product (nominal) by 2007 estimate is \$186,718 billion while per capital (nominal) is \$6,956. The Southeast Asian nation experienced an economic boom and underwent rapid development during the late-20th century. With a GDP per capita standing at USD14, 400, it has, from time to time, been considered a newly industrialized country. Because Malaysia is one of three countries that control the Strait of Malacca, international trade plays a large role in its economy.

Natural Resources

Malaysia is well-endowed with natural resources in areas such as agriculture, forestry, and minerals. In terms of agriculture, Malaysia is one of the top exporters of natural rubber and palm oil, which together with sawn logs and sawn timber, cocoa, pepper, pineapple, and tobacco dominate the growth of the sector. Palm oil is also a major generator of foreign exchange.

To further enrich forest resources, fast-growing timber species such as *meranti tembaga*, *merawan* and *sesenduk* are also being planted. At the same time, the cultivation of high-value trees like teak and other trees for pulp and paper are also encouraged. Rubber, once the mainstay of the Malaysian economy, has been largely replaced by oil palm as Malaysia's leading agricultural export. Tin and petroleum are the two main mineral

resources that are of major significance in the Malaysian economy.

Sustainable Energy Development in the Country

According to the report from National Energy Balance, Malaysia (2003), the energy fuel production is over 80 million tons of oil equivalent with exports of the order of 28 million tons. This is accounted for by the share of the total primary energy supply (excluding trade in electricity) in the break down as: oil, 48.9%; gas, 41.4%; combustibles (including biomass and waste), 4.8%; coal, 4.1%; hydro, 0.9%. The production or supply of energy is complemented by the demand in the following sectors of the country economy: industrial consumers, 53%; commercial consumers, 28%; domestic consumers, 18%; and others, 1%.

Furthermore, NEB, Malaysia (2003) stated that prior these policies, the Malaysian Investment Act, 1986 specifically mentioned alternative energy to be pursued by the country, the act specifically mentioned development and production of fuel cells, polymer batteries, PV components and solar cells.

RESULT DISCUSSION, PROJECT MANAGEMENT AND RELEVANCE

Research Design

A percentage and descriptive research were employed in carrying out this study. Akuazulio (1990), descriptive research is that which specify the nature of a phenomenon for a full understanding and for making a wide range of policy decisions.

Sources of Data

Harper (1972) suggested that the sources of data used by any researcher for information purposes could either be primary or secondary. By Primary Data, this could be the data collected firsthand by the researcher while Secondary Data is the method by which information source is gathered by other agencies for their own purpose, which a researcher finds useful for the purpose of his research work.

A famous research practitioner, Hawkins (1876) admitted that 'secondary data are more important in research work and can only be supplemented by the primary if they have been exhausted and there is need for more information'.

(i) Primary Data

The form of primary data used was questionnaires, which were distributed to members of populace, workers and NEPA staff at Warri, Ughelli and Benin. The two major forms of questionnaires used by the researchers are: (i) open ended questions (ii) closed ended questions.

(ii) Secondary Data

Secondary data collection involves reading previous and related publications on the role of

energy and development in both developing economy and advanced economy. This accounts for a significant percentage of the data collected for the study.

Some sources of collecting second-hand data for this study include:

- (i) Textbooks
- (ii) Journals
- (iv) Newspapers

3.2 Population/ Sample

It is expedient for a researcher to understand reasons for collecting data and also from which source the data is collected. The population of the research makes it necessary for a researcher to draw out his sample size from the large population for efficiency's sake. In all, a total of 145 questionnaires were distributed, 140 were completed and returned. The returned questionnaires are volunteers from NEPA staff, industrial workers, students in Warri, Ughelli and Benin.

3.3 Sampling Technique

The sampling technique to be used by the researcher is simple random sampling. This was achieved by assigning numbers first to element 1-10; therefore, the number (2) was randomly selected. Hence, every second number was randomly selected from the total population, which finally resulted to 140 (one-forty) as the sampling size.

3.4 Research Instrument

The major instrument used in this study was structured questionnaires designed by the researcher to elicit information from the respondents. The respondents must answer Yes or No and in some other cases use their initiative.

3.5 Validity and Reliability of Instrument

The researcher chooses primary and secondary data, which provide reliable information essential to this study, and facilitates the analysis presentation. The researcher also uses constructive validity, which is based on hypothesis testing to validate the research instrument.

The research hypothesis stated would be tested to determine their acceptance or rejection using Chi-Square. The use of Chi-Square is based on the fact that analysis will be made using observed and expected variables.

The reliability of the research instrument is the degree to which a measuring instrument produces a similar outcome when it is repeated. In reality, scores on measuring instrument contain both a variable true component and a variable error component.

Measure of the components can be expressed as:

$$x_i = t_i + e_i$$

Where:

x_i = actual score obtained by person I

t_i = true score obtained by person I
 e_i = an error components for person I

The reliability of the measuring instrument can be expressed as the ratio of the true score variances to actual score variance.

$$\frac{\sigma^2_t}{\sigma^2_x} = \frac{\sigma^2_x - \sigma^2_e}{\sigma^2_x}$$

σ^2_x = variance of observed scores
 σ^2_t = variance of true scores
 σ^2_e = variance of errors

3.6 Analytical Tools

After collection and screening of data, they were organized and analyzed. The researcher used simple percentages in analyzing the data. The researcher, in order to avoid inconveniences and ambiguity in data analysis has decided to use the simple percentage. Apart from the simple percentage technique used, a descriptive analysis was also employed to narrate and relate all the data. The formula the researcher used in the finding the percentage of respondents is:

$$\frac{\text{Frequency}}{\text{Respondents}} \times 100$$

The researcher used the Chi-Square (X^2) test to enable him to establish if there is a relationship between any two variables in the population. For example, economic development and sustainable energy development in the country.

Formula for Chi- Square

The computation of the Chi-Square is based on the formula:

$$X^2 = \sum \left[\frac{(f_o - f_e)^2}{f_e} \right]$$

Where

f_o = obtained frequency

f_e = expected frequency

X^2 = measure of departure of obtained frequencies from the frequencies expected by chance.

The level of significance is $5\% = 0.05$. This is the probability of rejecting the null hypothesis (H_0) when in fact it should be accepted. It means that there will be a 5% chance in a hundred that is true null hypothesis would be rejected. H_1 is said to be significant if the H_0 is rejected at 0.05 level.

Decision Rule

If $X^2 > X^2_{0.05}$ Accept H_1 and Reject H_0

If $X^2 < X^2_{0.05}$ Accept H_0 and Reject H_1

Result Presentation and analysis.

The institution chosen is one and this is the Energy Commission of Nigeria (ECN) which is the institution saddle with development and regulation of energy matters and policies in the country. Other offshoots of ECN include NEPA turned PHCN, NAEC and 140 respondents were considered.

Question One

What has been the impact of energy (electricity) on both the economic and environmental development of a developing country like Nigeria?

Table 4.1: Impact of energy (electricity) on both economic and environmental development.

Option	Frequency	Percentages
Positive	98	70
Negative	42	30
Total	140	100

From the above table, it is clear that the positive response of energy on both the economic and environmental development is 70% and negative response 30%. There is a positive response when there is a rise and all things being equal.

Question Two

Is the energy (electricity) supply sufficient to bring any economic or environmental development?

Table 4.2: Response to energy (electricity) supply.

Option	Frequency	Percentages
Yes	28	20
No	112	80
Total	140	100

The table shows that the energy (electricity) supply is not sufficient to bring both economic and environmental development. This is because the frequency of the option 'Yes' is just 20% while 'No' option is 80%.

Question Three

Is the shortfall of energy (electricity) supply as a result of institution (ECN) failure being corrected with the government energy policies over the years?

Table 4.3: Rectification of energy (electricity) supply failure by government energy policies

Option	Frequency	Percentages
Yes	105	75
No	35	25
Total	140	100

It is clear from this table that the failure of the institution to supply energy (electricity) to the people is being rectified to a greater extent by government energy policies. The percentage of positive and negative options is 75% and 25% respectively.

Question Four

Which Sectors of the economy takes the lion share of the energy produce?

Table 4.4: Sectors and energy consumption

Option	Frequency	Percentages
Household	70	50
Industries	28	20
Commercial	21	15
Transport	14	10
Agriculture	7	5
Others		
Total	140	100

The above table shows that household takes the greatest percentages of energy which is 50% and the other half of the total energy been shared among the others. This further confirms the use of energy by households.

Question Five

Has the energy use by the household resulted in increase of energy importation?

Table 4.5: Effect of household energy use on energy importation

Option	Frequency	Percentages
Yes	105	75
No	35	25
Total	140	100

The effect of household energy use has increased energy importation by 75%.

Question six

What is the contribution of energy sectors to the Gross Domestic Product (GDP) of a country as a result of its development and production?

Table 4.6: Energy Sector's Contribution to GDP.

Option	Frequency	Percentages
Yes	98	70
No	42	30
Total	140	100

This table shows that energy contributed 70% to the GDP of the country.

Table 4.7: Research Questions and Responses

S/N	FACTORS	CUSTOMER	%
1	Impact of energy (electricity) on both economic and environmental development	98	70
2	Sufficiency of energy (electricity) supply to both economic and environmental development	28	20
3	Rectification of energy (electricity) supply failure by government policies	105	75
4	Others	0	0

Test of Research Hypothesis**Test of Hypothesis 1 (Using Chi-Square, X^2)**

Ho: Energy does not have a significant role to play in the Nigerian economic and environmental development.

H1: Energy does have a significant role to play in the Nigerian economic and environmental development.

Degree of Freedom/ Significant Level

$$V = (k - 1) (r - 1)$$

Where k = column

r = row

$$v = (3-1) (2-1) = 2$$

$$X^2_{0.05} = 5.99$$

Decision Rule

REJECT Ho: If ' X^2 ' calculated is greater than or equal to X^2 critical.

ACCEPT Ho: If ' X^2 ' calculated is less than X^2 critical.

Hence, by applying the formula:

$$X^2 = \sum \frac{[(fo - fe)^2]}{fe}$$

Where:

fo = obtained frequency

fe = expected frequency.

x^2 = measure of departure of obtained frequencies expected by chance,

Applying the above formula by substitution, the research arrives at the result below:

$$\begin{aligned} X^2 &= \frac{[(98 - 140)^2]}{140} \\ &= \frac{(-42)^2}{140} \\ &= \frac{1764}{140} \\ &= 12.6 \end{aligned}$$

Thus, since $12.6 > 5.99$, we reject the Ho which states that, energy does not have a significant role to play in the economic and environmental development in a developing country like Nigeria and accept the H1. This confirms the responses from the questionnaire about the impact of energy on both economic and environmental development in Nigeria.

Test of Hypothesis 2

Ho: Economic and environmental (growth) development in the country does not depend on the energy injected into various sectors.

Hi: Economic and environmental (growth) development in the country depends on the energy injected into various sectors.

Decision Rule

REJECT Ho: If ' X^2 ' calculated is greater than or equal to X^2 critical.

ACCEPT Ho: If ' X^2 ' calculated is less than X^2 critical.

Hence, by applying the formula:

$$X^2 = \sum \frac{[(fo - fe)^2]}{fe}$$

Where:

fo = obtained frequency

fe = expected frequency.

x^2 = measure of departure of obtained frequencies expected by chance,

Applying the above formula by substitution, the research arrives at the result below:

$$\begin{aligned} X^2 &= \frac{[(28 - 140)^2]}{140} = \frac{(-112)^2}{140} \\ &= \frac{12544}{140} = 89.6 \end{aligned}$$

Thus, since $89.6 > 5.99$, we reject the Ho which states that, economic and environmental (growth) development in the country does not depend on the energy injected into various sectors and accept the H1. This also confirms the responses from the questionnaire about the sufficiency of energy on development in the country.

Test of Hypothesis 3

Ho: Energy production and supply failure by the institution is not rectify by the government policies in energy development in the country.

Hi: Energy production and supply failure by the institution is been rectify by the government policies in energy development in the country.

Decision Rule

REJECT Ho: If ' X^2 ' calculated is greater than or equal to X^2 critical.

ACCEPT Ho: If ' X ' calculated is less than X^2 critical.

Hence, by applying the formula:

$$X^2 = \sum \frac{[(fo - fe)^2]}{fe}$$

Where:

fo = obtained frequency

fe = expected frequency.

x^2 = measure of departure of obtained frequencies expected by chance,

Applying the above formula by substitution, the research arrives at the result below:

$$\begin{aligned} X^2 &= \frac{[(105 - 140)^2]}{140} = \frac{(-35)^2}{140} \\ &= \frac{1225}{140} = 8.75 \end{aligned}$$

Thus, since $8.75 > 5.99$, we reject the Ho which states that, energy production and supply failure by the institution is not been rectify by the government policies on energy development in the country and accept the H1. This also confirms the responses from the questionnaire.

To round the hypothesis testing up, the fact that some hypotheses of any research study are accepted may not totally mean that they are true and

the fact that they are rejected does not imply that the hypothesis is incorrect. It only means that so far as the available evidence, through the data collected, appears to be reliable and valid. The conclusion drawn therefore is assumed to be correct. A point to note also is that the acceptance or rejection of a hypothesis is based on samples taken from the identified population.

Research Findings

The findings made by the researcher from this study are summarized as follows:

1. That energy, at most sustainable energy is a necessity for a developing like Nigeria to bring both desired economic and environmental growth.
2. That the traditional energy production and supply in the country is not adequate to bring about meaningful development in the country's sector.
3. That ECN sustainable energy reform should be quickly adopted and implemented in the country to make energy available to the sprawling rural villages in order to protect the forest trees and by extension protect the environment.
4. That government should strictly monitor and make responsible agencies saddled with energy production and supply accountable for the funds allocated to them to bring about efficiency and sustainable energy production.
5. That energy forms the bedrock of meaningful industrialization growth in a developing country like Nigeria; Malaysia have demonstrated this and so other developing countries must take a cue from them for effective and better economic and environmental transformation.
6. That the establishment of ECN by Federal Government is a welcome development to the energy sector through which all forms of energy development in the country can be regulated and monitored to bring about desired economic and environmental development in the country.

5.3 Conclusion

This study has clearly highlighted the important role of energy (sustainable) towards both economic and environmental development in a developing country like Nigeria. Mention was made of other country like Malaysia that shared similar history like Nigeria and how the country overcome energy production by tailoring their country energy reforms towards sustainable energy production and supply and hence the resultant effect of both economic and environmental growth witnessed in the country.

For a developing country like Nigeria to have a good economy, there must be a solid industrial base, this can only be achieved when there is a growth in energy sector since the amount of energy (sustainable) injected into the country's

sectors have a positive effect of multiple growth in both economic and environmental development in a country, hence, Nigerian government must sustain and even upped the funding of the energy sector to bring about desired development in the country.

5.4 Recommendations

Since there is a positive relationship between both economic and environmental development and the level or quantity of energy made available to the different sectors in the country; the situation now with the traditional energy production is not adequate, hence the need to adopt energy production mix by supplementing what is in existence with cheap and readily available sustainable energy sources in the country. The following recommendation needs to be considered:

1. Nigeria must fully implement the economic reform program called the National Economic Empowerment Development Strategy (NEEDS). The purpose of the reforms is to raise the country's standard of living through a variety of reforms, including macroeconomic stability, deregulation, liberalization, privatization, transparency, and accountability. NEEDS addresses basic deficiencies such as lack of freshwater for household use and irrigation, unreliable power supplies, supplement power supply through sustainable energy production, decaying infrastructure, impediments to private enterprise, and corruption. The government hopes that NEEDS will create 7 million new jobs, diversify the economy, boost non-energy exports, increase industrial capacity utilization, and improve agricultural productivity.
2. Government to engage in a better and more aggressive enlightenment campaign among the populace on energy management and efficiency.
3. Government to encourage institutions/ organizations to invest in the yet 'untapped' natural resources of the country through the creation of enabling environment.
4. Government and private institutions should promote sustainable energy production by investing in information technology to become the main engine of both economic and environmental growth.
5. Government to set up ethical policies and standards of honesty, fairness, equity and diligence in the business transaction and contract execution.
6. Government to diversify Nigerian economy into manufacturing, power, agriculture, education, oil and gas, transport, and housing. And for these expectations to be met, domestic efforts need to be complemented by investments from abroad.

7. Government should through policies and its implementation address some of the constraints to private business in Nigeria including poor infrastructure such as electricity power supply, public water, roads, railways, ports, airports, etc.. Others are corrupt customs system and dangerous security situation.

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