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Adaptation of Marketing Mix of Finnish Biomass Power Suppliers for Nigerian Market

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Thesis Abstract

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Availability and reliability of power supplies have always been concerned issues in Nigeria. With estimated population of 150 million people 2010, Nigeria is the most populous nation in Africa and belongs to the group of countries with the lowest energy consumption per capita in the continent. The loss of profit that is forced upon the industry due to power cuts and frequent interruptions of power supply is enormous. Alternative sources of energy have an significant role to play in providing much needed power in the context of growing global concern about sustainable energy supplies and protecting the atmosphere from the adverse effects of fossil fuel utilization.

The goal of the thesis is finding out the adapting means of competition of Finnish Biomass product manufacturers entering Nigerian markets.

The study was conducted as a quantitative desk research. The information is gathered from secondary data, which are mainly science and technology journal.

In course of my review, Biomass has great potential in Nigeria and the Finnish Biomass manufacturers can come by considering improving on the low supply of power sector in the nation, they could take advantage of the villages, through adoption and the use of these alternative power resources for growth in the country. The Finnish have the ability and the technical know-how to turn around the situation.

Keywords: Sustainable energy, biomass potential, power supply, technical know-how

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Abbreviations

CDM	Clean Development Mechanism
EFCC	Economic and Financial Crimes Commission
ECN	Energy Commission of Nigeria
FAOSTAT	Food and Agricultural Organization Statistics
FDI	Foreign Direct Investment
FID	Firm Investment Decisions
GDP	Gross Domestic Product
GHG	Greenhouse Gas
IPPA	Investment Promotion and Protection Agreements
MAN	Manufacturers Association of Nigerian
MDG	Millennium Development Goals
MNC	Multi National Cooperation
NASSI	Nigerian Association of Small Scale Industries
NEEDS	National Economic Empowerment and development Strategy
NCERD	National Centre for Energy Research and Development
NNPC	Nigerian National Petroleum Commission
PHCN	Power Holding Company of Nigeria

PJ	Petajoule
PV	Photovoltaic
SERC	Sokoto Energy Research Centre
SSA	Sub-Sahara Africa
TEKES	The Finnish Funding Agency for Technology and Innovation
UNDP	United Nations Development company
USTDA	US Trade and Development Agency

1 INTRODUCTION

According to Abubakar S. Sambo (2005) Energy is the stronghold of Nigeria's economic growth and development. It shows a significant role in the nation's global diplomacy and it serves as a tradable product for earning the national income, which is used to sustain government expansion programmes. It as well serves as an input into the manufacture of goods and services in the nation's industry, transport, agriculture, health and education sectors, as well as a tool for politics, security and international relations.

According E.N.C.Okafor and C.K.A. Joe-Uzuegbu (2010), The result of ozone layer reduction and its consequences on the lives of people and atmosphere today are generating a great worry to all the world leaders, scientists, engineers, environmentalists, industrialists, development specialists, academics, and those whom, in one way or another are paying attention in power and environment issues which have impact on global warming arising from green-house result. Industrial growth and poverty improvement which is a worldwide worry have prompted the United Nations to put Millennium Development Goals (MDG), which will be fostered in part by ensuring that electric power accessibility is considerably increased.

However, several energy resources are obtainable in Nigeria in abundant sizes. The non-renewable resources include petroleum, natural gas, coal, tar sands and uranium; while Renewable are solar radiation, biomass, hydropower and wind. There has been a supply-demand gap, as a result of the inadequate development and incompetent management of the power sector. The provider of electricity, the most utilized power resource in the nation has been unpredictable. While the installation of the first thermal power station in 1920, the development in electricity generation has not been sufficient to contain the increasing demand. Less than 40% of the 150 million Nigerians are supplied electricity from the national grid, with numerous private companies, multi-national companies, households and

institutions have to make their own arrangements for electricity supply, mainly through diesel and gasoline-powered electric generators.

The insufficient supply of electricity has constantly led to load shedding, with unfavorable effects on household, commercial and industrial activities. The Electric Power Reform Act, signed into law in March 2005, forms the basis for the hopefulness that continuing private investment and management strategies would give the momentum to turn around the electricity sector, with better generation and stable energy supply delivery, with renewable energy-based electricity generation technologies playing a major function. Get hint from other developing nations like India, China, Indonesia, Thailand, and Kenya indicate that there are group of potential in the acceptance of these technologies. These potentials have been inspired by purposeful government policies to give confidence to the private sector, the second and third tiers of government, local communities and to install and manage biomass-energy-based electricity generation plants. To impact the imminent danger on our environment, there has been series of investment and research in the area of Alternative energy products and systems. This involves research in renewable electric power generation, water heating, food cultivation, processing and preservation, irrigation, access to clean water, water desalination and pumping, chicken brooding, etc.

1.1 Purpose of the thesis

The goal of the thesis is finding out the adapting means of competition of Finnish Biomass product manufacturers entering Nigerian markets.

First, renewable energy sources (solar, wind and biomass) are briefly discussed. Second, the main issues in Nigerian energy sector are dealt with. After that, the renewable energy in Nigeria is discussed in more detail. In chapter four, the adaptation of 4P’s of Finnish biomass power suppliers to Nigerian markets is analyzed.

1.2 Solar power

According to Sambo, Doyle and Folayan (1988) solar energy is one of the most promising of the renewable sources of energy in view of its apparent limitless potential. The Sun radiates its energy at the rate of about 3.8 x 1023 kW per second. Most of this power is transmitted radially as electromagnetic radiation which comes to about 1.5Kw/m2 at the boundary of the earth's surface can receive as much as 1Kw of solar energy, averaging to about 0.5 over all hours of sunshine. Research relevant to the ease of use of the solar energy supply in the country has fully indicated its feasibility for practical use. Various applications of solar Photovoltaic in the country include Solar Photovoltaic electrification particularly in rural areas.

These applications have a nationwide distribution. Solar Thermal system applications in Nigeria are Solar Dryers, Solar Chick Brooders, and Solar Water Heaters. There are quite a good number of solar thermal energy projects in Nigeria. The solar systems were financed by various bodies including the Energy Commission of Nigeria, Sokoto Energy Research Centre, and The National Centre for Energy Research and Development, Nsukka, some state governments such as Sokoto State Government, Jigawa State Government, Ondo State Government, international organizations such as United Nations Development Programme, Japan International Cooperation Agency, United States Agency for International Development and the United States Department of Energy.

Power Holding Company of Nigeria through the World Bank-assisted National Energy Development Project is also investing part of the proceeds of this credit to establish a solar Photovoltaic in a rural community in Cross River State which is very far from the national grid to address virtually all of the things a community needs energy for. Under the same project, Power Holding Company of Nigeria in collaboration with Energy Commission of Nigeria and Fadama II Project (a World Bank assisted project in Agriculture Sector) .This is with the aim of using solar Photovoltaic technologies to solve the energy problems of these agricultural and

rural communities and thereby enhance their productivity, economic empowerment, and consequently standard of living. (F. B.Dayo. 2008).

According to naijatechguide solar panels consists of an array of solar cells, usually covered in glass. Solar panels provide power for charging your batteries and powering your appliances.

Solar panels are expensive per watt when compared to a petrol generator, but uses free energy from the sun. For example, an 80 watt solar panel costs about N38, 500 in Nigeria. Solar panels may also come in different power capacities.

Solar panels can last for up to 30 years.

One or more solar panels will be required in a solar power system. A two bedroom flat, for example will require to 10 solar panels.

Prices of some solar products in Nigeria:

-80W solar panels: N38, 500 converted €186, 29

-62W solar panels: N62, 200 converted €300, 00

-140W solar panels: N67, 000 converted €324, 19

-160W solar panels: N76, 000 converted €367, 74

-Grundfos Sqflex solar pumps: N230, 000 converted €1,112.90 (Nigeria Technology Guide. [Ref. 20 December 2011].)

1.3 Wind power

Wind is a normal occurrence related to the movement of air masses caused mainly by the differential solar heating of the earth’s surface. Regular variations in the energy received from the sun affect the strong point and direction of the wind. Utilization of wind energy is presently very minimal in the country. The only known

and still functional wind pump in the country is the Sayya Gidan Gada wind electricity project in Sokoto State. It has a capacity of 5.0 kWp and was built at a cost of about #5 million (US$40,000) by the Energy Commission of Nigeria, (ECN), the Government Agency responsible for the development and implementation of energy policy issues in the country.

A recent Study Report, Energy Commission of Nigeria (2007) indicated that Sokoto and Jigawa States are currently making efforts to install wind pumps for small scale irrigation and electricity generation. The Renewable Energy Master Plan (REMP) projection for wind power in the country is 1 MW in short term, 20 and 40 MW in medium and long term respectively. The wind energy mapping of the country has been done and Government has mandated that 10 MW of wind power farm be built in each of the six geopolitical regions in the country medium term.

Where Nigeria Can Install Wind Plants

According to Nuhu Wya, Nigeria's Minister of State, Power, Nigeria's wind resources are huge no doubt. With a coast line of 853Km and desert areas prone to wind running into thousands of kilometer, the extreme North and South stand good chances. Lagos with its Atlantic City being constructed on the shoreline will tremendously make the New City an eco friendly city by utilizing wind power. A couple of humongous states in the North West such as Katsina, Kebbi, Sokoto and Zamfara can invest in wind and harvest the year round rich wind resource of their area so can Bornu, Yobe, Bauchi and possibly Taraba/Adamawa benefit from a common plant if well planned.

Examples of wind Farms located in deserts

According to Nuhu Wya, experience shows that wind power can be generated from deserts and from the sea environments. That makes the two extremes of Nigeria good conditions for Windfarms that can provide not only alternative energies but safer and more manageable power plants without minimal damage to the ecosystem. (Nigerian Infrastructure News. [Ref. 10 January 2012].)

1.4 Biomass Power

Biomass energy refers to the energy of biological system such as wood and waste. Biomass energy is an indirect form of solar energy because it arises due to photosynthesis. The biomass resources of the nation can be identified as wood biomass, forage grasses and shrubs, residues and wastes (forestry, agricultural Municipal and industrial) as well as aquatic biomass.

Wood, apart from being a main source of power in the form of fuelwood is also used for business purposes in different forms as plywood, sawnwood, paper products and electric poles. For power purposes, the country is using 80 million cubic meters (43.4 x109 kg) of fuelwood annually for cooking and other household uses. For crop residues and wastes, estimates of 61 million tonnes of dry biomass that are produced yearly leave residues whose power content approximate to 5.3 x 1011 MJ. (A S. Sambo. 1991).

The National Centre for Energy Research and Development, and Nsukka under the supervision of the Energy Commission of Nigeria. As part of the biomass energy program of SERC, 200 Units of improved woodstove were disseminated in Danjawa, Sokoto State while 8 units were disseminated in kuje Prison, Abuja. (Energy Commission of Nigeria. 2007).

Use of Biofuels in efficient Stoves and Lamps

According to Clean Investment in Nigeria, good potentials also exist in the introduction of pure plant oil (PPO) from Jatropha as a residential sector fuel in Nigeria. Recent interest in Jatropha as an energy crop in Africa is focused on the extraction of pure plant oil from the plant and transesterification of the oil to produce bio-diesel for use in the transport sector. Part of the pure plant oil can be utilized in special stove designs as cooking fuels in the residential sector. Jatropha which grows very well in Nigeria is not a food crop as neither its seeds nor it fruit is edible. The plant is commonly used as a fence around homesteads, gardens and fields because it is not browsed by animal. Jatropha can be grown in almost all

locations in Nigeria, all year round in even arid soil; it will not take up valuable cropland for it to be in abundant supplies. Example of a technique introduced plant pure oil from Jatropha as a fuel in residential end-use energy application in Nigeria, especially in rural and peril-urban households. (Nigerian Infrastructure News. [Ref. 10 January 2012].)

1.5 About Nigeria

Nigeria is Africa's foremost business destination. Its currency is the Naira. N is approximately N150USD.The country operates a market economy dominated by crude oil exports with the revenue earnings from the sector accounting for 90% of FOREX earnings and 65% of budgetary revenues. Other exports are cocoa, palm oil, groundnuts, cotton, timber and rubber.

Nigeria's imports are in the region of $45.5 billion USD (2008).Import commodities include machinery, chemicals, transport, and equipment, manufactured goods and live animals. While exports account for $76.8 billion (2008).

In recent times, focus is being directed at non oil exports and agriculture, which presently accounts for 41% of GDP, to diversify the economic base. Opportunities exist for the exploitation and export of natural gas, bitumen, limestone, coal, tin, sands, clays, asbestos, graphite, and iron ore.

The Government has been pursuing economic reforms marked by the privatization and deregulation which seek to transfer state ownership of institutions to the private sector and so engender efficiency and the productive sectors of the economy. These are well articulated in the NEEDS programme. The reforms have led to an explosive growth in the telecoms sector after years of stagnation. The Global System for Mobile communication has transformed the economic terrain creating employment and oiling the operations of businesses in Nigeria. The country is traversed by a network of primary and secondary roads, and has 4 international airports and 6 seaports (Lagos, Calabar, Onne, Port Harcourt,

Sapele, and Warri). It also boasts 147 Television, 100 radios, 35 cable, 5 direct to home, 4 direct broadcast satellite stations on air and 25 National newspapers. The internet code of Nigeria is .ng.

Nigeria, officially the Federal Republic of Nigeria, is a country in West Africa and the most populous country on the African Continent with population estimation of 150 million inhabitants. Nigeria shares land borders with the Republic of Benin in the West, Chad and Cameroon in the east, Niger in the north, and borders the Gulf of Guinea in the South. Since 1991, its capital has been centrally located in the city of Abuja; previously, the Nigerian government was headquartered in Lagos more than 16 million inhabitants lived in the city. (Why Invest in Nigeria. [Ref. 10 October 2011].)

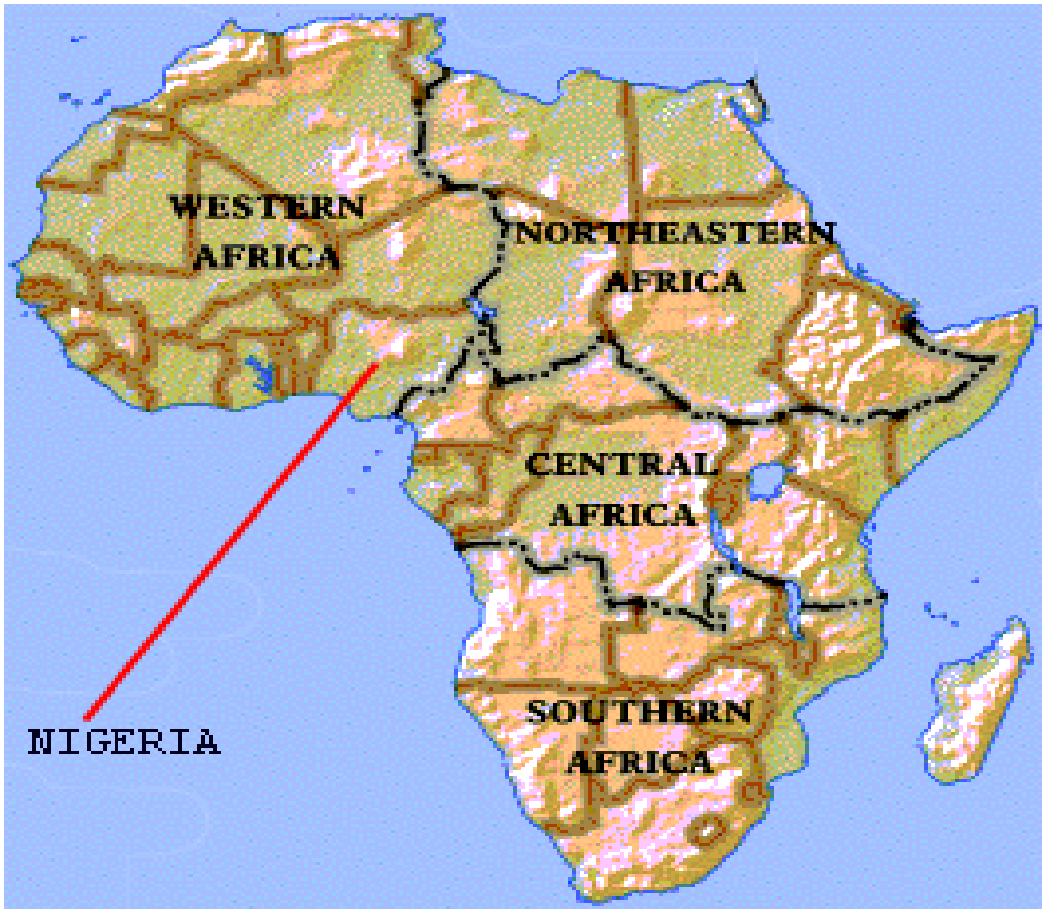

Figure 1. Nigeria is located in West Africa region

2 MAIN ISSUES OF NIGERIAN ENERGY SECTOR

The nation major energy issues can be conveniently categorized as inefficiency and untrustworthy energy supply system, environmental concerns, energy financing, inadequate technological capabilities in the energy sector and weak institutional framework (World Council, 1993).

2.1 Energy Consumption Patterns

Table 1 below give a brief summary of Nigeria's energy resource endowments. It contains recent estimates of other alternative potentials apart from hydropower.

Table 1. Nigeria's Energy Reserves/Potentials (2005)/ECN 2009).

Resource Type	Reserves	Reserves (Billion Tonnes of Oil Equivalent)
Crude Oil	36.0 billion barrels	4.896
Natural Gas	166 Trillion Standard cubic feet	4.465
Coal & Lignite	2.7 billion tonnes	1.882
Tar Sands	31 billion barrel of oil equivalent	4.216
Sub-Total Fossil		15.459
Hydropower, Large Scale	11,250 MW	
Hydropower, Small Scale	3,500 MW	
Fuelwood	13,071,464 Hectares (3)	
Animal Waste	61 million tonnes/year	
Crop Residue	8.3 million tonnes/year	
Solar Radiation	3.5-7.0 kWh/m2-day	
Wind	2-4m/s (annual average)	

ECN: Energy Commission of Nigeria

Nigeria is richly blessed with primary energy resources. The nation is endowed with the world's tenth largest reserves of crude oil currently estimated to be about 36 billion barrels (about 4.896 billion tonne of oil equivalent (toe)) in 2006). The country has also been described as more of a natural gas island than oil with an estimated endowment in 2006 put at about 166 trillion standard cubic feet (5,210 billion cubic meters). This includes associated and non-associated reserves, placing Nigeria among the top ten countries with the largest gas reserves in the world. Other important primary energy resource endowment in Nigeria include: Tar sands- 31 billion barrels oil equivalent (4.216 billion toe); Coal and Lignite- estimated to be 2.7 billion tonnes (1.882 billion toe); Large scale Hydropower Potentials- 11,250 MW; Small scale Hydropower Potentials, provisionally estimated to be – 3500 MW. Table 1 above provides a brief summary of these endowments in Nigeria.

Table 2. Final Energy Demand in Economic Sectors in Nigeria.

Sector Energy Consumption (PJ)								
Years	Agric.	Industry	Transport	Commercial	Residential (Household)	Total	% Annual Growth	% Renewable
1990	7.13	240.48	287.34	6.99	735.70			64.19
1991	7.18	248.67	260.07	6.48	717.30	1,239.70	-3.0	68.23
1992	7.56	247.30	354.41	6.40	770.19	1,385.86	11.8	62.96
1993	7.60	258.96	342.35	6.96	790.92	1,406.79	1.5	63.99
1994	5.54	259.98	246.32	4.63	817.55	1,334,02	-5.2	69.60
1995	5.38	261.75	278.76	7.00	810.18	1,363.07	2.2	70.24
1996	5.71	277.79	241.36	8.01	849.98	1,382.85	1.5	71.42
1997	7.17	311.97	272.58	7.74	918.19	1,517.65	9.7	70.69
1998	6.09	355.75	272.34	8.16	1,002.01	1,644.35	8.3	70.87
1999	6.57	494.64	260.98	7.97	1,074.93	1,845.09	12.2	68.61
2000	8.65	466.94	357.21	7.19	1,163,10	2,003.18	8.6	68.64
2001	7.58	609.64	404.55	8.91	1,274.81	2,305.49	15.1	64.78
2002	8.04	683.79	414.95	8.54	1,373.13	2,488.44	7.9	65.20
2003	6.34	702.88	402.67	9.87	1,462.67	2,584.43	3.9	68.19
2004	3.28	771.88	350.39	9.70	1,571.23	2,706.49	4.7	70.73
2005	5.05	868.16	486.34	10.35	1,758.40	3,128.30	15.1	66.47

Data on consumption of alternative energy from FAOSTAT). The alternative portion is mostly biomass (over 90 %) especially fuelwood and charcoal. Source F.B. Dayo et al. 2004 and 2007

Table 3. Useful Energy Demand of Economic Sectors in Nigeria.

Sector Energy Consumption (PJ)							
Years	Agric.	Industry	Transport	Commercial	Residential (Household)	Total	% Annual Growth
1990	5.70	122.86	258.39	6.29	234..70	627.95	
1991	5.74	127.33	233.85	5.76	210.92	583.60	-7.1
1992	6.05	124.14	318.80	5.76	240.62	695.37	19.2
1993	6.08	131.37	307.91	6.26	245.85	697.47	0.3
1994	4.43	129.81	221.51	4.17	254.68	614.60	-11.9
1995	4.30	127.98	250.72	6.30	237.83	627.13	2.0
1996	4.57	139.42	217.10	7.21	256.30	624.63	-0.4
1997	5.74	160.98	245.25	6.97	274.58	693.52	11.0
1998	4.87	188.42	244.97	7.34	301.52	747.13	7.7
1999	5.26	297.29	234.79	7.17	317.47	861.97	15.4
2000	6.92	264.49	321.49	6.47	340.08	939.45	9.0
2001	6.06	361.83	367.08	8.02	378.29	1,118.28	19.0
2002	6.43	424.62	373.44	7.69	402.06	1,214.24	8.6
2003	5.07	424.64	362.09	8.88	414.92	1,215,61	0.1
2004	2.62	470.07	315.20	8.73	437.34	1,233,96	1.5
2005	4.04	533.09	437.24	9.32	513.76	1,497.46	21.4

Source: F.B Dayo et al. 2004 and 2007

A sector approach is used here in the discussion of the trend in energy demand in Nigeria during the period 1990 – 2005. The sectors of the Nigerian economy considered in this report include: agriculture; industry; transport; commercial; and residential. The useful energy was derived from the final energy in a recent energy demand and supply optimization study, after making assumptions on end use energy efficiencies in these sectors (Felix B. Dayo et al. 2004). Both the final and useful energy demand database utilized in the earlier study was extended to the year 2005 for the purpose of the present study. Felix have used available data from Food and Agricultural Organisation (FAOSTAT, 2005) on fuelwood utilization in the residential and industrial sector as well charcoal utilization in the household sector to update energy balances during the period 1990-2005.

Table 4. Electricity tariffs in Nigeria (PHCN, 2009).

Category	Amount ($/kwh)
Residential with single phase meter	0.026
Residential with three phase meter	0.042
Commercial houses with single phase meter	0.052
Commercial with three phase meter	0.055
Average	0.044

2.2 Energy Issues in Agricultural Sector

According to F.B. Dayo (2007), energy use in agricultural production in Nigeria as shown in Table two is relatively low in spite of the fact that about 70% of Nigerian workforce is employed in this sector. In 2008, a little improvement compared to

17.3% in 2002, the agricultural sector contributed about 41% to the nation's GDP compared to 53% by Industry. Energy use in the agricultural sector has being low because the production system in the sector is based on subsistence agriculture characterized by high labor intensity, little or no irrigation and near zero mechanization. The trend of useful energy consumption in the Agricultural sector is estimated in recent study has been presented in Table 3.Potential opportunities for renewable energy investment focused at the agricultural sector will include: use of solar energy for irrigation water pumping, utilization of agricultural residues for electricity generation; and generation of biogas from wastes generated from livestock and animal husbandry sub-sector.

2.3 Energy Issues in Household Sector

During the period 1990-2005, residential energy demand maintained a major share of total energy demand when fuelwood and other biomass fuels are included in the energy consumption statistics. The sector accounted for more than half of the total final energy consumed in the country during the period 1990-2005.The fact that technologies to utilize biomass and other renewable energy sources more efficiently are now available in the global market is an indication that the historical energy supply and consumption patterns in Nigeria can be shifted towards a cleaner path.

2.4 Energy Issues in Industrial Sector

Demand for final energy consumption in the industrial sector maintained a level close to that of the transport sector during the period 1990-2005. Final energy consumption in the industrial sector of the Nigerian economy during the year 1990 amounted to about 240.48 PJ. This figure of sector energy consumption included fuelwood utilization in cottage industries, examples are, bakeries, block making etc. The final energy demand in the sector grew at an average annual rate of

about 1.7% during the period 1990-1995. While F.B.Dayo (2007) said the annual growth rate of energy demand in the sector during the period 2000-2005 averaged over 13%.In all most all manufacturing industrial enterprises in Nigeria where power and thermal energy (steam) is required, the common supply mode usually involve standalone onsite thermal and power generating facilities and connection to the grid for power supplies whenever the grid is up and running.

2.5 Energy Issues in Transport Sector

The transport sector accounted for about one third of the country's energy demand in almost all the years in focus. Petroleum products, petroleum motor spirit, diesel, fuel oil and dual purpose kerosene are the main fuels consumed in the sector. The sector is responsible for the highest portion of petroleum fuels consumed in the country in all the years of focus. It is also the sector responsible for the highest consumption of fossil fuel in the country in all the historical years. Example about 67% of all the fossil fuels was consumed in the country (excluding those consumed for electricity generation) in that year. The Table 5 below shows the corresponding figures for the sector during the years 2000 and 2005 on a final energy and fossil fuel basis. (F.B. Dayo. 2007)

Table 5. Final Energy and Fossil Fuel Consumption in the Transport Sector.

Years	Final Energy in Transport Sector (PJ)	% of Total Final Energy	% of Fossil Fuel (Excluding Fossil fuel consumed for power generation)	% Petroleum Products
1990	287.34	35.03	66.96	100
1995	278.76	20.45	75.63	100
2000	357.21	17.18	59.84	100
2005	486.34	15.55	48.18	100

Source F.B. Dayo 2004, 2007

2.6 Energy Issues in Service Sector

In rural area, human energy is used for water lifting from wells while in the large villages and many towns, diesel powered pumping systems are relied upon to raise water from boreholes. Hospitals and health centers in rural area rely on together Renewable Energy-generated electricity and diesel generator for lighting, sterilizing of appliances as well as for storage of drugs and vaccines. The state of affairs in the health centers is vastly the same in boarding schools, barracks and prison house.

2.7 Inefficient Energy Utilization

The Power utilization in the country is far from being well-organized. Apart from the straight loss due to power wasted, using energy incompetently has three main implications in Nigeria. These are:

The investment in some energy supply infrastructure is far in excess of what the energy demand is.

The environmental problems associated with energy utilization are more aggravated due to large energy consumption.

Excessive energy consumption adds to costs of goods produced especially in energy intensive industries like cement, steel works and refineries.

2.8 Inefficient and Unreliable Energy Supply System

In electric power supply efficiencies of existing thermal plants are low. They are as low as 12 per cent whereas efficiencies of up to 40 per cent are possible with current technologies. In addition considerable electricity is lost during transmission and distribution. These losses are sometimes more than 30 per cent of the total electricity generated. Separately from these inefficiencies the reliability and availability of existing installed electric generation system is low. There is the severe difficulty of power unreliability over the years such that most industrial establishments and upper income households install very costly generating sets amounting to over half of the total installed grid capacity. This constitutes huge economic losses to the nation economy. (A.S.Sambo/ISESCO. 2005).

The major factors contributing to the above unreliability and inefficiency in the power sector are:

There are frequent breakdown of generating plants and equipment due to inadequate repairs and maintenance; lack of skilled manpower and inadequacy of basic industries to service the power sector.

In the petroleum sector, production, marketing and distribution system are often inadequate, inefficient and expensive. On the manufacture side, refinery capacity use is generally low mainly due to operation and repairs problems.

3 RENEWABLE ENERGY IN NIGERIA

Etiosa Uyigue (2007) Renewable energies include wind, ocean wave, and tides, solar, biomass, rivers, geothermal (heat of the earth).However, the spotlight is based on solar, wind and biomass. He also gave the explanation why they are called ‘’Renewable’’ since they are often replenished by natural processes and are therefore in continual supply. They also can operate without polluting the atmosphere. Technologies have been developed to harness these energies. This alternative source of energy are constantly being replenished from natural sources, they have good security of supply unlike fossil fuels, which are negotiated on the international market and subject to international competition sometimes may even resulting in wars and shortages. They have significant merits which could be stated below:

The rate of use does not influence the availability of renewable energy in the future, thus they are infinite. The resources are normally well distributed all over the world, although wide spatial and temporal variations occur. Thus all regions of the world have reasonable access to one or more forms of renewable energy supply. They can be cheaply and continuously harvested and therefore sustainable source of energy

According to Etiosa Uyigue (2007) The nuclear and fossil fuels plants which belong to big companies, governments, or state owned enterprises, alternative source of energy can be set up in small units and therefore suitable for community management and ownership. Hence, value from renewable energy projects can be kept in the community**.** In Nigeria, this has particular relevance since the electricity grid does not extend to too many rural areas and it is prohibitively costly to extend to countryside. This gives exceptional prospect to construct power plants closer to where they are really needed. Consequently much needed income, expertise transfer and manufacturing opportunities for little businesses would be injected into rural communities. Promoting alternative source of Energy will give Nigeria less greenhouse gas emission and also prevent global warming, increase market

opportunities in Nigeria, employment opportunities and also closing the wide energy supply and demand gap.

According to A. S. Sambo (2005) the country Energy Policy on Renewable Energy provides for the development and harnessing of the Renewable resources of the nation and the use of same to support decentralized energy supply. The development and support of Renewable technologies in the country today is the responsibility of the Energy Commission of Nigeria. He went further that it expected that the Commission will use Renewable Energy to pursue environmental sustainability agenda. Although the constraints have being insufficient financial support has affected the few planned projects such as Renewable trainings, information dissemination, pilot and demonstration projects that the Energy Commission of Nigeria embarked upon in the past few years.

In terms of its potentials, capacity and development reveals an large quantity of resources that can be harnessed to make the nation one of the most industrialized countries in the continent, the Finnish companies can take this advantage to invest or do joint project with companies or government. The future is bright for investors why, the political climate in Nigeria is growing very fast and government are bringing different policies to encourage foreign investment. (A.S.Sambo/ISESCO.2005).

3.1 Renewable Energy in Nigeria Current and Future

Renewable Energy Potential in Nigeria has high potential to harness power from renewable sources. The nation falls within the tropics of Cancer and Capricorn where the abundance of sunlight is inevitable. This energy whose reservoir is the sun is one of the energy resources whose availability is infinite if it is developed. Furthermore, unlike the conventional energy resources, solar energy development is not as capital intensive. Thus, it is fundamental to offer the strategy of diversifying power resource development outside the usual energy resources which are in high demand should directly be channeled towards the development

of other non-conventional, less capital intensive and non-hazardous power resources in the country. Efforts need to be geared towards research and development of solar electricity conversion by both direct and indirect methods.

Wind power is secondary form of solar energy. Experts reported that about 2.5 percent of solar energy captured by the atmosphere is being transformed into wind. With wind energy available at an annual average speed of 2.0 m/s near the coast to 4.0 m/s at the northern borders, country possess huge potential to expand and utilize energy from the wind for electricity generation. Suitable regions for this technology exploitation are the southern and northern part of Nigeria.

The potential for biomass development is high. Nigeria has all the vegetation regions of West Africa except that of the desert. Agriculture is the leading economic activity, which contributes 41percent of Nigeria GDP and employs the highest labor in Nigeria. Roughly 75 percent (74 million hectares) of Nigeria's total land (98 million hectares) is arable and about 40 percent of this is cultivated, leaving the remaining 60% of arable land idle. If the country farmland is cultivable, it would have medium for good productivity if correctly managed. Policy, institutional and technological approach is predictable to harness biomass potential in the country.

3.1.1 Market Obstacles to enter Nigerian renewable energy markets

Lack of awareness of the potential and Importance of energy efficiency, lack of skilled manpower to carry out energy audit studies, lack of awareness of potential alternatives such as renewable energy technologies, There are limited policy frameworks on development of renewable energy resources, Attitudinal change of policy makers and end users of energy, lack of energy efficiency agency and low government financial support and not availability of fiscal incentives.

3.1.2 Government and Public Policies to Promote Utilization of Renewable Energy

There is need for the nation to explore alternative source of energy particularly to reach out to the populace that do not have right of entry to electricity and other current power services. The need to preserve the current energy generated in Nigeria using energy efficiency products and practices is necessary for sustainable development. (Etiosa Uyigue. 2007).

Create awareness on renewable energy and energy efficiency, promote energy efficiency products and practices at the side of end users and energy generation, and develop appropriate drivers for the implementation of energy efficiency policy. There is no accredited academic program in any Nigerian University and Polytechnics that can provide training and produce experts in the field of Solar, Wind and Biomass energy technology. Hence government wants specific policy that relate to development of skilled knowledge in this power resource. This can be achieved by establishing training and research centers in selected Universities and polytechnics across the country. Serious attention has to be given to construction of roads for convenience to the rural villages and cities. (M.S.Adaramolaa and O.M.Oyewolab. 2011).

According to Ibitoye and Adenikinju (2007) and Gbadebo and Okonkwo (2009), There is a need for policy on repairs of electricity infrastructures that would make it mandatory for government agencies that are involve in electricity generation and distribution to carry out regular maintenance on these infrastructures. This can be done by establishing an electricity infrastructure commission with authority to frequently inspect electricity facilities (including solar, wind and biomass energy infrastructures) across the country to make sure that maintenance procedures are followed strictly.

There is different ways government tried to attract investors both local and international companies to come to the country, the following investment incentives under section 6.0 of the policy (NNPC. 2007).

- Funding of research and establishment of biofuels agency to limit investment costs and access to any government subsidy by the companies.

- Tax Holiday (Pioneer Status): All registered businesses engaged in activities related to biofuels production and/ or the production of Agricultural feedstock for the purpose of biofuels production and co-generation within the country shall be accorded pioneer status within the provisions of the Individual Development (Income Tax Relief) Act.

- Withholding tax on interest, dividends e.t.c.: Biofuels companies shall be exempted from taxation, withholding tax and capital gains tax imposed under Sections 78, 79, and 81 of the companies Income Tax Act in respect of the interest on foreign loans, dividends and services rendered from outside Nigeria to biofuels companies by foreigners.

- Waiver on Customs and Import Duties: Biofuels companies shall be exempted from the payment of custom duties, taxes and all other charges of similar nature.

- Waiver on Value-added Tax: Companies that are involved in the production of biofuels or feedstock and/ or the generation of electricity from biomass shall be exempted from payment of value-added taxes on all products and services consumed. (Journal of Sustainable Development. [Ref. 18 January 2012].)

The following activities and milestones have being carried out some are still on under the Nigerian Biomass Programme:

Table 6. Short Term Planned Activities and Milestones for Biomass Resource (2005-2007).

Activities	Description of Activities	Year
Sites Identification	-Indentify all potential project sites in the country and available	2005–2007
Technology Assessment and Reviews	-Assess review necessary levels of utilization of biomass resource. Developed countries should be approached to promote the transfer of energy technology and training to lift the nation to higher standards of living to benefit the entire nation.	2006–2007

Table 7. Medium Term Planned Activities and Milestones for Biomass (2008-2015).

Domestic Biomass Energy Conversion Strategies	-The direct combustion of biomass to produce heat is the simplest route of utilizing biomass material. However, this method misses advantages of the conversion process, such as moisture reduction, increase of thermal value and ease of handling. As a result, direct combustion of unconverted biomass is relatively inefficient. There is therefore the need to develop appropriate biomass conversion systems for domestic application. These strategies include, anaerobic digestion, chipping, chopping, grinding, briquetting and drying	2008–2015

Table 8. Long Term Planned Activities and Biomass (2016-2025).

Activities	Description of Activities	Year
Feed Biomass Power into National Grid.	-Power generated from Biomass can be supplied to the National grid. The long-term aim is to increase the nation's overall electric power generation by 35% from biomass and reduce the reliance on conventional sources for electricity generation.	2016–2025
Establishment of Decentralized Biomass Energy Plants	-Government should encourage through incentives, the establishment of decentralized biomass power plants for use in the industries. The initial phase of development plants that can generate as much as 2,500MW of electricity by the year 2025.	

3.1.3 Policy measures

Solar Energy

The thrust of the policy here should be the incorporation of solar energy devices into as many sphere of the economy.

Continuous active support of research and development activities to cater for site specificity of designs for all parts of the country support of demonstration and pilot projects to guarantee that the general public become aware of the potentials of solar energy technologies which will as well assist in creation of markets for solar energy systems. The Provision of financial incentives, encourage the use of solar energy systems, particularly in villages where the greatest potential exist and the introduction of regulatory measures to encourage and protect local capabilities (A.S.Sambo/ISESCO. 2005).

Wind Energy

The policy and strategies for solar energy are also applicable here. In addition, the policy should emphasize the exploitation of wind energy for rural water supply and also for electricity generation. This mean that extra strategies are:

aggressive drive to optimize the components of wind water pumping and electricity generation and to de-emphasize diesel powered water pumps wherever the wind speed will allow wind water pumping.

Biomass

The adoption of efficient wood-burning stoves, the active introduction of biogas digesters to cater for the cooking energy needs of especially large households and institutions like boarding schools, hospitals, barracks , prisons houses and the

development of renewable technologies to supplement wood both as domestic energy source and also as a building/furniture material.

3.1.4 Creating Environment to Attract Investment

An investment requirement for conventional power sector is big and it is clear that government will not be able to exclusively fund the sector as has been the case in the past. That is why private sector participation is necessary. Hence, there will be need to attract foreign investors in the sector. The needed attractions include: serious development in the financial performance and existence of favorable investment environment. Notice of private sector investment will call for; evaluate existing energy pricing to allow for good return on investment; easing the difficulties in the procurement of foreign exchange; promoting power conversation and efficiency measures in all sectors of the economy; Maximizing the operating performance of obtainable energy supply infrastructure. (A.S.Sambo/ISESCO. 2005).

3.1.5 Renewable Energy Technologies Ready for Local Adoption

A big number of renewable power devices have been developed by Nigerian researchers in different parts of Nigeria. A.S.Sambo/ISESCO (2005) these devices are ready for incorporation into the economy.

Solar Cookers

These are box-type arrangements where most local dishes can be cooked within one hour under average sunshine conditions.

Solar Water Heaters

The heaters which are based on flat-plate collectors with appropriate storage units can produce water at temperatures of up to 80 0C will find applications in hospitals, hotels, industry and private residences and capable of significant reduction of electricity.

Water Pumping

Many employees have demonstrated the use of photovoltaic solar modules for pumping water from wells and boreholes particularly in countryside for proving the water necessity for entire communities, also good for irrigation purposes.

Storage of Vaccines and Drugs

Photovoltaic power components have also been revealed to sufficiently provide the electricity for refrigerators and deep freezers in which vaccines and drugs can carefully stored without losing their potencies.

Production of Biogas

With biogas digesters, which are typically constructed from sheet metal and fed with slurries of animal dung they can produce biogas and after 2-3 days. This can be relied upon for the manufacture of gas for domestic cooking. It can also be used for powering internal combustion engines for electricity generation in rural areas.

Wind Electricity Generation

In the country, for quite some time, only laboratory trials have been made in the area of using wind for electricity generation. Lately though, an increasing number of wind water pumping sets and wind electricity conversion systems have been installed.

3.1.6 Technology Development

The contribution of particular training and development of sound technological education in the educational system and to ensure that the obtainable pools of human resources is given the opportunities to “learn – by – doing”. A further requirement is to increase research and development. Knowledge transfer, technology transfer from Finland and adapting them for use in Nigeria is a welcome development. Strategies for increase technology development as follows:

Provision of technological support services needed for the successful training of personnel; subsidizing the price of technological education; Mobilizing home expertise and involving them in the planning, designing and construction of power projects so they can “ learn- by –doing”; Provision of sufficient finance for energy research, development and demonstration activities; Sponsored trip to abroad to learn more from developed countries like Finland, Germany, Sweden and others; Have good collaboration with foreign investors for purpose of technology transfer.

According to The Nigerian National Petroleum Commission (NNPC) they launched a Renewable Energy Division in 2005, as a result of which the organization developed a biofuels programme which should see the country saving between US$ 100 million and US$ 130 million on energy every year. The Renewable Energy Division is also in charge of coordinating Nigeria’s activities under the Clean Development Mechanism of the Kyoto Protocol.

Nigeria’s focus on increasing its sustainable energy profile is aided by external partners: in June 2010, the World Bank agreed to allocate US$ 200 million to the development of renewable energy projects in Nigeria. The US Trade and Development Agency (USTDA) gave Nigeria US$ 323,000 in June 2010 to help draw up a framework for using renewable energy in electricity generation. (Corporate Nigeria. 2010/2011).

Integrated Approach to Sustainable Energy Development

The schedule for solving these common problems include the integration of environmental consideration into energy development plan, create environment to attract investment and technology development. Because of the tough energy-environment linkage it is important to integrate the policies affecting the two sectors for sustainable development. This can be done by incorporating environmental considerations throughout the planning and implementation stages of big conventional power projects. The requirements include improving forestry management by strengthening the institution charged with monitoring forestry resources. Incorporating environmental impact assessment and for all major energy projects. Internalizing the external cost in pricing energy products, designing and enforcing guidelines for monitoring the environment. (A.S.Sambo/ISESCO. 2005).

Renewable Energy Systems for Rural Development

The energy needs in the rural and semi-urban areas of the nation can be categorizes as follows:

Domestic Needs: Cooking, housing light, domestic water pumping and distribution, television and powering, water heating and Refrigeration.

Agricultural Production: Water pumping and distribution for irrigation, operation of various agricultural equipment or implements, processing and storage of agricultural products and drying.

Community Needs: Hospitals, clinics, schools, barracks, prison houses etc.

4 ADAPTATION OF 4P'S OF FINNISH BIOMASS POWER SUPPLIERS TO NIGERIAN MARKETS

4.1 Adaptation of 4P'S Of Finnish Biomass Power Suppliers To Nigerian Markets

Marketing opportunity exist in Biomass feedstock products. However, what means of marketing strategy will be used to distribute, promote and price the products? The decision to manufacture as well as the control of the allocation of necessary resources must found who will buy the product. Actual and potential customers of a product define a market. With the aim to obtain business objective a product must be promoted and distributed to consumers and potential buyers. This required lot of marketing to have a positive impact.

An estimated 60 million Nigerians now own power generating power sets for their electricity, while the same number of people spend a staggering #1.56 trillion ($13.35m) to fuel them yearly. I was in Nigeria between September 12th and November 2nd 2011, I witnessed this problem too, and the country is really suffering from this low power supply with generating set polluting the environment during the day by industries and at night by households. (Energy Commission of Nigeria. [Ref. 7 November 2011].)

Manufacturers operating in the Nigeria business environment have disclosed that more than #1.8 billion is being spent weekly.

According to Nigerian Tribune Newspaper (2009), the manufacturers who operate under different trade associations like the manufacturers Association of Nigeria (MAN) and Nigeria Association of Small Scale Industries (NASSI), they said the major problem facing them was the lack of power. (Energy Commission of Nigeria. [Ref. 7 November 2011].)

The low purchasing power of the rural and some urban populace must also be considered with pricing strategy because they constitute the larger part of the population of the country. The government is also embarking upon different projects in solar, wind, biomass in order to discourage them from using fuelwood as an alternative for cooking. The Liquid bio fuels made from biomass holds a vital hope for rural development because of its potential to create works. More so, increasing energy security and well being of the rural people is a concern.

According to Felix B. Dayo (2007) generation of power using the carbon neutral biomass as fuel was described as a clean energy potential .The biomass fuels considered in the presentation were: agricultural residues generated in the crop cultivation process and forest residues generated in the lumber industry as well as in the processing of wood. He went further in evaluating the potentials of using these different types of residues as fuels for generation in a recent study. The result is summarized in table 9 below.

Table 9. Energy Generation Potentials of Biomass in Nigeria.

Biomass Type	Biomass Available (thousand tonnes)	Power Generation Potential (MW)	% of Country Installed Capacity	Estimated cost (Million US$)	Estimated Emission Reduction (tCO2e/annum)	Estimated Earnings from Sales of CERs (Million US$/annum)
Agricultural Residues	35,687	4,113	69.8	5,758	20,959,400	209.59
Forest Residues	14,054	1,824	31.0	2,553	9,142,100	91.42
Wood Residues	3,249	703	11.9	984	3,522,400	35.22
Total	52,990	6,640	112.7	9,295	33,623,900	336.24

Source: Felix. B.Dayo. “Opportunities for CDM Projects in Anglophone SSA countries”, World Bank 2007

Table 10. Projected marketed possibility.

S/N	Trend	Market Demand Per Year (litres)
1	Gasoline (E-10 Blend)-current -2020	1.2billion 2 billion
2	Paraffin(Replacement With Ethanol Based cooking Gel Fuel)	3.75 billion
3	Raw material for Portable Ethanol	90 million
	Total Market Size	5.04 billion
4	Current market possibility(B-20), Biodiesel	480 million
5	Estimated bio-diesel demand by 2020	900 million

Source: Azih 2007 Authors' modified

According to Journal of Sustainable Development 2011, with regards to biofuels market, records indicate that these commodities have not been use previously for any commercial fuel application. The projected demands were therefore deduced from the recent and future gasoline and diesel production in the country. For the anticipated E-10 ethanol blend in gasoline, about 1.3 billion Litres of ethanol are required annually. This has been deduced to reach 2.0 billion Litres by 2020 and beyond. The demand for biodiesel is projected based on 20 per cent blend (B20) in line with international biodiesels specifications. 900 million Litres would be required by 2020 compared to the estimated current requirement of 480 million Litres. The market is anticipated to reach 100 per cent establishment by the year 2020. (Journal of Sustainable Development. [Ref. 18 January 2012].)

4.1.1 Biomass energy case in Nigeria: Agricultural Residues to Energy

According to Felix B.Dayo, table 9 shows the robustness of the potential of biomass fuelled generation in Nigeria. About 6,640 MW power capacity fuelled by biomass residues can be implemented in Nigeria. This clean energy potential will require slightly over US$9 billion putting in place. Apart from profits from sales of energy, about US$ 336 million per year can be generated from the sales of the carbon emission reduction when the projects are carried out under Clean Development Mechanism process.

Barriers that can limit the implementation of Agricultural Residues to Energy as CDM projects:

Poor Access to and recoverability of Agricultural Residues

The residues manufactured during the organization of cultivated plots and harvesting of agricultural products in many Nigerian farms are typically located in areas that may not be easily reachable for gathering. Access to these raw materials is hard as a result of the poor and in some cases non-existing

transportation infrastructure common in many parts of the country. This will to a certain extent inhibit the recoverability of the agricultural residue.

Residue Pre-Use Transformation Technology Requirements

Usually, residues normally collected from agricultural operations cannot be used in the form collected as a fuel for energy generation. There may be a need to pre-dry it before use, size reduction may be needed or there may be a need to briquette the residues to increase its energy density before being used as a fuel. These are transformation needs that may require technology skills not usually available in many developing countries and may constitute a barrier to the use of agricultural residue as a fuel for energy generation.

Cost of Biomass to Energy Production Compared to Energy Generation Using Fossil Fuels

According to Felix B. Dayo (2007) he compared fossil fuel fired generation systems, biomass fuelled systems tend to have higher initial capital cost requiring higher investment which may constrain firm investment decisions(FID) in a capital constraint environment such as the one usually found in Nigeria. This may constitute a barrier to adoption of biomass energy investments in the nation. Apart from the slightly higher cost of the biomass-energy conversion technologies, most of the other cost components which are specific to biomass systems examples extra cost for pre-fired biomass handling and processing can be considered as incremental cost that must be covered by special financing mechanism if the biomass energy system is to be competitive relative to other alternatives.

Non-Existing or Weak Power Purchase Agreement

Electricity generation from these biomass projects is likely to be in excess of electricity requirements of the non-power utility enterprises where the projects are located. Because the agreements for buy back of power from such generators of excess power by operators of existing power grids usually are not in place, selling excess generation to the grid is usually problematic and inability to evacuate

power generated has been known to deter investment in such facilities in many developing countries.

Negative Impact on Agriculture When Residues are collected

Another consideration when evaluating recoverability of agricultural residue generated is the importance of the residues to agricultural production. In many agricultural operations, agricultural residues do provide certain functions which may have implications for agricultural productivity and if collected as a fuel for energy generation may impair such functions. The important point here is that not all the residue generated should in principle be recovered as they are needed on the field as a part of sound agricultural practices. The primary consideration in agriculture is maintaining the productivity of the soil where crops are grown and to also promote sustainable development preached by CDM. Felix. B Dayo (2007)

The following Barriers that can limit the potential implantation of forest and wood processing industry residues to energy as CDM projects in Nigeria:

Access to and Recoverability of forest and Wood Processing Industry Residues

According to Felix .B. Dayo (2007), access to residues generated in the forests during the harvesting of the round wood and perhaps to a lesser extent for residues from wood processing industries can be a problem in Nigeria due to the very bad transportation infrastructure prevalent in many parts of the country. The situation are however likely to be less of a bottleneck compared to the situation with agricultural residues. This because in longing operations, access roads are usually created for the lumber trucks to facilitate the timely evacuation of the logged round wood. Woody debris left on the ground has been known to deter erosion and its decomposition; helps maintain soil fertility and tilt.

Pre-Use Transportation Requirements

Residues are normally available for collection after forest logging operations are usually with high moisture content usually requiring drying before it can be used as a fuel in energy generation facilities. These are also through true for residues

produced in the processing of these woods apart from wet, can also be available in sizes that requires some amount of size reduction before it can be optimally used as fuel. The levels of transformation needs may constitute a barrier to the use of these residues as fuel for energy generation.

Cost of Biomass to Energy Production Compared to Energy Generation Using Fossil Fuels

According to Doole & Lowe, (1999); Benito & Welch, (1994) one of the most important decisions organization's faces when internationalizing is deciding on entrance pattern. This is for the reason that any commitments they make will affect every part of their business for several years. Every mode of entry carries a degree of commitments, risk and resources. According to Root (1994), entry modes can be classified into export entry modes, contractual entry modes and investment entry modes.

First exporting is a relatively easy mode of internationalization and requires limited investment in terms of time and cost. In export entry modes, the firm's final products are manufactured outside the foreign market. The disadvantages are the transportation cost of goods, trade barriers, including tariffs and possible lack of position with overseas sales agents. Many of these troubles can be solved using contractual entry modes or investment entry modes. However exports entry mode has low control, low risk and high flexibility. (Hollensen. 2004, 28).

Second, contractual entry modes are also non-equity associations between a firm and an entity in a foreign target country to form a beneficial business arrangement for both parties to reach the goals set. Hollensen (2004, 308). Contractual entry modes can be divided into four major types; Licensing, Franchising, Technology transfers, Subcontracting and Project operations. The difference between contractual entry modes and export is that it is a medium for technology transfer or transfer of individual skills as well as shared level of control and risk. (Hollensen. 2004, 284).

Third, investment or equity entry mode can be divided into mostly joint ventures and foreign direct investment (Acquisitions & Greenfield Investments). Joint venture is a form of entry mode in which two or more firms' carryout a certain a business contract while remaining independent but set up a jointly owned newly created company. Johnson & Scholes (1997, 310). Joint Ventures require limited resources and market knowledge because the foreign partner has this knowledge.

Foreign Direct investment (FDI) as an entry mode enables the company to control its overseas operation and to profit from location based advantages including knowledge and capabilities. This is however a high risk entry mode, with high commitment, requiring substantial financial investments. It is time intense and complex, and flexibility is very limited because of sunk costs. (Oguji Nnamdi. 2010)

4.2 International Marketing- Adaptation to International Markets

According to Cateora (2006), International marketing can be defined as how company's business activities are planned, priced, promoted and directed to the customers outside national borders in order to gain profit. It differs from domestic marketing in simply one clear way; the business is conducted in more than one country.

Company controls means of competition. Setting those means is influenced by two levels of uncontrollable elements: domestic environment uncontrollable elements and foreign environment uncontrollable elements.

4.2.1 Uncontrollable Element in Foreign Environment (Nigeria)

Addition to having to deal with all the uncontrollable factors of the domestic markets one needs to manage with the same variables in the foreign markets simultaneously. Depending greatly on the economical development of the country

and the differences on the culture the culture shock might be intense. Before entering into a foreign culture, one should attain as much as information as possible but still will be difficult to be prepared for problems it may face.

4.2.2 Economic Forces

According to E.N.C. Okafor, C.K.A Joe Uzuegbu (2010) joined with low income per capita stigma of most African nations; it is practical that economic and financial barriers may be another main issue to contend with the growth of Renewable Energy in Nigeria. These challenges occur from lack of access to capital; lack of means of life support; lack of information by appropriate financial institutions; lack of investment; scale of energy systems; unsuitable subsidies by government or other agencies and size of organizations.

Fear of the workability of latest technologies as a result of lack of access to educational, many financial institutions are not normally willing to invest in the businesses relating to Renewable Energy. The consequence of this is that both the potential installer and the end consumer are hungry of the funds for either early procurement or improve of exiting systems.

Investments in latest technologies are very costly. The price for Renewable Energy systems in Africa might carry on to be high because of huge financial input and low profit margin in the course of producing the parts caused by low patronage and high cost of research and development.

Economic Impacts

According to McGill University the first step in any project always concerns the evaluation of the costs and the expected revenues. Bioenergy projects always need to produce energy in a cost-effective way compared to other conventional methods of energy production. In some cases, bio energy can be undertaken

despite the fact that other options seem, on a short term, to be more profitable, because of declining feedstocks or because of higher social or environmental benefits that will lead to increased governmental contributions.

Bioenergy projects affect the communities in which they are implanted in various ways. This can go from improved water quality to the creation of new jobs in economically depressed region.

Some uses of bioenergy require a feedstock based on dedicated field production (such as energy crops) or residues from agricultural production. Some agricultural fields are marginal for food production and bioenergy production could improve these marginal lands. However, in some cases, the production of energy crops may have a detrimental effect on food security.

According McGill University, a good example on the social impacts of bioenergy concerns corn ethanol and rising oil prices. Since corn is an energy-intensive crop and requires the use of fossil fuels, and increase in the cost of the barrel of oil also increases the production costs related to corn production. At the same time, this increase in oil prices increases the profits a farmer can make from the production of corn ethanol. Under competitive market conditions, the increase in oil prices limits the supplies of crop feedstocks and favors the transformation of corn supplies to corn ethanol. These consequences limit the supply of corn for animal and human consumption and can affect the global prices of corn, making it a less affordable product. (McGill University. 2011).

4.2.3 Competitive Factors

Competitors already exist in Biomass production in Nigeria. Affordable Energy Solutions Ltd, AngleLight Consulting, AngleLight Resources Ltd, J-Far Global Solutions, Green Seal Industrial and Commercial Company, Emmanuel Resources, ISON Nigeria Limited, Kudo Kings Ltd, Omet Solar Technology and

Sonnekraft Technologies Ltd, they specialize in providing Biomass products such as, biorefinery, composting systems, alternative home and building construction materials, recycling, waste treatment systems, waste to energy systems, biomass product supply construction, contractor services, maintenance and repair services, education and training services. The Biomass market in Nigeria has few players in the industry. The cost involved in running this programme is expensive. Nigeria needs more local and foreign investors to invest in agricultural equipments for good cultivation of the land in order to increase production. The Finnish companies can set up factories, buy land or cooperate with the local farmers and come with experts to train people how manage this technology. (Biomass Energy Businesses in Nigeria. [Ref. 8 February 2012].)

4.2.4 Level of Technology

According to level of technology, Nigeria is rated 94 out of 134. Lack of technical competence remained and may continue to be a major challenge towards the development of Biomass energy systems in Nigeria. The technical failures of Biomass systems can be traced to lack of understanding of local energy requirement; lack of research and development to adapt technology to local government conditions, resources and requirements; lack of local skill labor to install, operate and maintain the equipment properly; and lack of access to spare parts.

These are the basic technical reasons behind the failure of most pilot programmes on the development of Biomass systems in Nigeria.

It is on record that most of the pilot programmes are carried out in rural communities. These communities are quite remote that most initial installers will not be willing to get back there to render maintenance services. Even when they do, the professional charges are beyond the capabilities of the beneficiary rural dwellers.

The concept, design, application and the use of Biomass devices are conceived without any local input, and there is little or no effort to the systems to various usage requirements. The result is that anytime it becomes difficult to get assistance in terms of component or intellectual property, as may be required to maintain or update the Biomass energy systems, the energy system will simply face redundancy and finally abandonment by the user. (E.N.C. Okafor, C.K.A Joe Uzuegbu. 2010).

4.2.5 Structure of Distribution

Private service providers include middlemen, traders and transporters, suppliers of processing equipment, suppliers of packaging materials and, to a limited degree, financial service providers. Public and development cooperation support is also provided on behalf of research and extension agencies, most of which focus on primary production and small-scale processing.

The distribuution channel of biomass

Producer of Biomass (On farm/rural processing to chips) - Processors of Biomass (Ethanol Production) – Buyers (end product consumer)

The so called ” dry cassava value chain” processes cassava into flour and starch and further into industrial products such as feedstuff, flour, starch and glucose. Additional transformation allows for production of ethanol (Biomass) which lately is picking up, only limited by the low prices for fuel. But with the increase of fuel from N65 to N97 (January, 2012) could boost the production of enthanol and other biomass products. (Working Paper 2010. [Ref. 18 January 2012].)

4.2.6 Geography and Infrastructure

Nigeria is divided into six Geo-Political zones; North Central, North West, North East, South West, South South, South East. According to Matthew Uchechukwu Okorie (2010), Biomass feedstock is in abundance in Nigeria (South East) and (North Central). More so, a key determinant for biomass supply is an infrastructure that ensures economically viable feedstock logistics and handling from farm to bio-refineries. Other determining factors include cost of inputs, demand for other uses, local resources (water), and enabling infrastructure (e.g., storage and transportation facilities, for feedstocks and liquid fuels).

4.2.7 Political/Legal Factor

According E.N.C. Okafor, C.K.A. Joe Uzuegbu (2010) massive use of alternative energy systems in Nigeria has huge future if only the right political and legislative framework can be set in place. Since the skill is far-off, there is requiring placing proper legislation, to stop rotating the nation into a dumping land by the industrially advanced countries. Good legislation may see the nation imposing zero taxes to renewable products, since with zero taxes and huge subsidy, the poorest of the poor are the main focus and there will be less importation of sub-standard products. Political approach towards foreign players in the industry as follows:

- Withholding tax on interest, dividends e.t.c.: Biofuels companies shall be exempted from taxation, withholding tax and capital gains tax imposed under Sections 78, 79, and 81 of the companies Income Tax Act in respect of the interest on foreign loans, dividends and services rendered from outside Nigeria to biofuels companies by foreigners.

- Waiver on Customs and Import Duties: Biofuels companies shall be exempted from the payment of custom duties, taxes and all other charges of similar nature.

4.2.8 Cultural Adaptation

Social acceptance of the Technology is very significant as its lack can be main challenge. If the home community does not accept the technology, there will be no requiring of the services. Most Renewable energy installations failed because the beneficiaries are not conceded during the decision making to deploy the energy systems to them. Involving the end users may generate more attention as they tend to profit more, having been given the option to express their very want and good thoughtful of the project. Cultural reasons for this, is that the ethnic tradition and culture of Nigeria must be honored, there must be recognition of the royal fathers, state and local government chairman's, a visit to them will go along way for the business success in that areas. The people can get feedback from their leaders. (E.N.C Okafor, C.K.A Joe Uzuegbu. 2010).

National Business Biomass and Business Field

Biomass energy business has a main impact on every aspect of our socio-economic life. It plays a very important role in the economic, political development of Nigeria. Poor supply of energy restricts socio-economic activities, limits economic development and unfavorably affects the quality of life. Improvements in standards of living are manifested in increased food production, increased industrial output, the provision of efficient transportation, adequate shelter, healthcare and other human services. These will require improved energy use. Therefore, the prospect energy requirements will continue to grow with increase in standards of living, industrialization and a host of other socio-economic factors.

According to Worldbusinessculture.com, industry culture, local Nigerian firms will, though, have an approach and flavor all of their own. All native Nigerian companies will display extremely hierarchical tendencies as befits a country rich in ethnic tradition and culture. Thus the superior expects and receives admiration from those under them in the structure. As age is extremely valued in Nigerian culture, managers are frequently of the older generation"age brings wisdom".

Hofstede's (1983) definitions of masculinity; masculinity stands for a society in which social gender roles are clearly distinct. Men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Nigerian falls under this definition. Managers are expected to be decisive, emphasis is on equity, competition and performance and conflicts are resolved by fighting them out.

According to World Business Culture people at a middle-management level will like to give the feeling that they have great control in the organization, they rarely do. Decisions are always made right at the apex, so try not to be too much time trying to force decisions out of more subordinate employees. If possible, go right to the top.

As a relationship-oriented culture, it is significant to be seen to be trying hard to develop good contact at all levels within the organization. Nigerians prefer to develop personal relationship prior to conducting business. Therefore, if this is the first time you are meeting with a Nigerian company, you should expect to devote a decent period of time to getting to know people on a personal level. Any attempt to bypass this protocol will hamper the Finnish business success.

Team members should present a united front at meetings. Any disagreement between members will be interpreted as meaning that you are not relaying the entire story and that they should proceed cautiously.

Try to avoid using hyperbole or making exaggerated claims when presenting a business case as Nigerians are naturally suspicious of a deal that sounds too good to be true. If you plant to work from an agenda, it is a good idea to send it in advance of the meeting. Nigerians will generally follow the agenda point by point and may want to consult with key stakeholders who will not be present prior to the meeting.

While punctuality can be very inconsistent, it is most likely best if you show up on time. Be cautious to permit enough time to negotiate the traffic. (WorldBusinessCulture. [Ref. 14 November 2011].)

Challenges in Nigeria for Finnish Companies

If Finnish is entertaining local business populace, he should make sure he does it with style in a very good restaurant. The level of generosity directly correlates to the seriousness of your needs to do trade together.

Nigerians prefer facial expressions that imply empathy and believe an indifferent facial expression indicates that a person is ignorant.

Communication commences with polite inquires into the welfare of the person and his family, the use gestures when communicating. The Nigerians may smile to mask their true feelings, especially when disappointed or confused. Many employ indirect eye contact to demonstrate their respect for the other person. It is common to gaze at the forehead or shoulders of someone they do not know well. Very direct eye contact may be interpreted as being intrusive unless there is a longstanding personal relationship.

The Finnish should avoid using left hand at meals in Nigeria, both for eating and for passing thing around the table. As a relationship-oriented culture, it is important for the Finnish companies to be seen developing good contact at all levels within the organizations and also attending social functions organize in Nigeria.

While many common problems remain when trying to develop business in Nigeria, lots of steps have been taken to tackle institutional and corporate corruption" things appear to be moving in the exact direction". With introduction of Economic and Financial Crimes Commission (EFCC) is a Nigerian law enforcement agency that investigates financial crimes such as advance fee fraud and money laundering.

Under the previous Economic and Financial Crimes Commission chairman Nuhu Ribadu, the agency has addressed financial corruption by prosecuting and convicting a number of high-profile corrupt individuals, ranging from Nigeria's former chief law enforcement officer to several bank chief executives. (Economic and Financial Crimes Commission. [Ref. 19 January 2012].

4.3 Uncontrollable Forces in Domestic Environment (Finland)

The roots of Finnish culture lie deep in the customs and beliefs of the ancient Finns. They worshipped the many gods and spirits of personified nature and its various elements. Nature and religious were one. Finland's historical links with countries from east and west have resulted in a combination of these cultures. Finnish values are a mixture of the Lutheran religion, the protestant working values of west (mainly Sweden and Germany) and patience , silence and concern losing face from the east .The influence of Sweden is more significant and in many ways wider than that of Russia. Religious, economic and technological traditions are close to Scandinavia, the United Kingdom and Northern European countries like Germany.

Working culture and value differences, the same models, value systems and hierarchy can be found in business life, management styles, in school and families. Probably the most well known study on cultural difference, and the most commonly used framework for analysis cultures, is proposed by Geert Hofstede (1983).

Finland belongs to countries with a short power distance. In Finland everybody shares the same basic rights and advantages. Society takes care of disadvantage people and families; all people residing in Finland are entitled to basic social security and compulsory education between the ages of seven and sixteen. Democracy and equality are highly valued with little differences between social

classes. He said this can be notice in modesty in homes, behavior very calm, they think before they make speeches, dressing and company facilities.

The hierarchical distance in private companies is minimal. Personnel in the company generally have access to all levels in the organization and example; they are encouraged to openly express their views even though they may be in disagreement with their bosses.

Compared to other European countries Finland has rather feminine values, but is the most masculine of the Nordic countries and Nigeria where. This can be seen in education.

Finnish are highly time-oriented. The time concept in Finland is linear, for any activity the end must be seen and reached. It is very important to be efficient, goal-conscious and keep to schedules.

Finland has very strong technical orientation because managerial positions in industrial companies are dominated by engineers. This can be seen in a very precise and systematic approach to organization. High value is put on efficiency and effectiveness. Punctuality is also very important.

According to Sari Laaksonen and Jonna-Amanda Widemark (2004), the Finns values characteristic such as trust-worthiness, reliability, honesty, individualism,”sisu” (persistence), quietness, calmness, prudence, patriotism, punctuality, modesty and equality. They are energetic, essentially inventive, and creative and they have the zeal to take risk in order to discover things. This will help the Nigerian energy business with Finland to grow very fast if both countries can understand each basics cultural and environmental factors.

Comparison of Finnish and Nigeria Culture

Cultural description will be based on four cultural dimensions of Geert Hofstede survey which are comparable to both countries and it could be accessed through his website.

Power Distance: Finland has a low power distance and scored 33. Power is decentralized and managers count on the experience of their team members. Employees expect to be consulted. Communication is direct and participative while Nigeria is a very high power distance culture. Nigeria scored 80 which mean that people accept a hierarchical order in which everybody has a place and which needs no further justification. Hierarchy in an organization is seen as reflecting inherent inequality, centralization is popular, subordinates expect to be told what to do and the ideal boss is a benevolent autocrat.

Individualism: Finland is an individualist culture while Nigeria is a collectivistic culture. From the survey Finland scored 63. This means there is a high preference for a loosely-knit social framework in which individuals are expected to take care of themselves and their families only. More so, the employer/employee relationship is a contract based on mutual advantage, hiring and promotion decisions are supposed to be on merit only, management is the management of individuals. While Nigeria scored 30, this is manifest in a close long term commitment to the member 'group', be that a family, extended family, or extended relationships. Nigeria culture fosters strong relationships where everyone takes responsibility for fellow members of their group. Also employer/employee relationships are perceived in moral terms (like a family link), hiring and promotion decisions take account of the employee's in-group, and management is the management of groups.

Masculinity /Femininity: Finland is a feminine culture. From the survey Finland scored 26. The implication to business is that the Finnish culture focuses on "working in order to live" managers strive for consensus, people value equality,

solidarity and quality in their working lives. Conflicts are resolved by compromise and negotiation. An effective manager is a supportive one, and decisions making is achieved through involvement. While Nigeria is masculinity culture and scored 60, in Nigeria business life people " live in order to work", manager are expected to be decisive and assertive, emphasis is on equity, competition and performance and conflicts are resolved by fighting them out.

Uncertainty Avoidance: Finland and Nigeria has high uncertainty avoidance. From the survey Finland scored 59 while Nigeria scored 55. This means that both countries are afraid of change and try to reject any policy that will lead to change and uncertainties. They both prefer structure; security is an important element in individual motivation and old way of doing things. (Geert Hofstede. [Ref. 20 January 2012].)

Time Oriented: Time is very important to Finns and punctuality is a virtue, it means same as the "Clock Time" to Finns. According to Ann Marie Sabath (1999, 97) Finns have respect and value for time and expect you to reciprocate.

In Africa, time is seen to be flexible and people come first before time. When a person is being too conscious of time, he is viewed with suspicion and distrust. Considering the fact that this is very important in business and life in general, people who are very conscious of time record little success in Africa owing to the suspicious and distrust on them. Africans like to spend and control time and do not see it as a limited commodity. (Robert T. Moran et al. 2007, 615-616.)

However, Nigerians are usually 30 minutes late from the scheduled time either Meeting or appointment, though things are changing.

4.3.1 Competitive Factor

The Finnish Domestic Rivalry in Biomass energy business, Biomass produced more than 10 per cent, a world record. The companies have creative mindset in technology, adoption of highly efficient, co-operation between companies' couple with good funding from the Finnish Funding Agency for Technology and Innovation and other government agencies. This has kept the business going and their services are needed in all part of Europe, Asia and America.

According to The Finnish Funding Agency for Technology and Innovation, most of the global manufacturers of forest machines are of Finnish origin. Continuous development work and operational experience from users have built up the Finnish biomass energy experience during the last 30 years. Companies like Mesto Power, Foster Wheeler and Andritz produce over 50 per cent of the world's fluidized bed boilers for biomass. Most of their research and development, design and manufacturing activities are carried out in Finland. The Wärtsilä Corporation, renowned for its diesel engines, has a sizeable bioenergy division.

Forest machine manufacturers, such as Finnish-owned Ponsse and John Deere's Finnish-based forestry business, see a lot of business potential in biomass-based fuel production. On road and off-road transport uses conventional equipment whenever feasible, but there has been major investment in developing special equipment such as accumulating felling heads for small tree operations, mobile and stationary equipment for communicating biomass, bundlers for bailing forest residues and machines for extraction and crushing of stumps.

In product development, machine manufacturers have closely collaborated with contractors, operators and researchers. This has contributed to the rapid increase of the use of forest fuels in Finland.

In Finland a network model is applied in the fuel procurement chain of a district heating plant or a combined heat and power plant. The network includes

representatives from pulp, paper and sawmills that need round wood, from wood fuel suppliers that are active in the fuel market, from independent entrepreneurs that are responsible for harvesting, chipping and transportation of wood, and from private forest owners. There are about 30 notable companies working on wood fuel and biomass procurement and about 24 companies on fuel processing, production and refining in Finland.

This companies are doing well in the energy business, they can match any business in the world; ABB, The Switch, Vacon, HTT- Group, UPC Ltd, MGH System Oy, Mervento, Greenstream Network Plc, Vaisala Oyj, Suntrica Oy, Westenergy Oy Ab. Metso Power, Alholmens Kraft, Wisapower , Andritz, Jyväskylän Voimas, Foster Wheeler, FingoEco, Lahti Energia, Lomellina Energia, Wärtsilä Biopower, Biokraft etc.

4.3.2 Economic Factors

According to preliminary data from Statistics Finland for 2008, the volume of Finland's GDP grew by 0.9% to €186 billion, which is €35,041 per capita. This makes Finland's average GDP growth rate for the past ten years 3.16%. Growth rates in 2007 and 2006 were 4.2% and respectively.

However, economic climate can affect on the decision for the company to move it business abroad. In countries where the economic situation is still weak the government might have huge impact in terms of finance and facilities.

4.3.3 Political/Legal Factor

Finland's National Innovation Strategy brought demand and user-driven approaches to core of the nation's innovation policy. The Proposed renewable energy target for Finland is 38 per cent of final energy consumption. Government

support are high with good execution of projects through TEKES, the corruption has no impact in the country decision process because the leadership has the transparency and accountability. This can also mean for example special trade treaty or possible restrictions that work as a foreign policy. Also you can enjoy some tax holiday for some years as a starter.

4.4 4Ps and Service (controllable elements)

The concept of 4Ps which was established by Jerome McCarthy in the 1960s has been used to decide the place of the manufactured goods in the markets. It creates the major arrangement for the marketing of the product and consists of all the factors that are considered basic in marketing. Naturally when working in the international field each market requires its own.

Czinkota and Ronkainen 1997 claim that business to business environment, defining the 4Ps is essential considering the complexity of the markets. In order to be successful the manufactured goods needs to be well located and targeted.

According to Czinkota and Ronkainen (1997) the four factors that compose the marketing mix are;

Product

Product concepts consist of the core project, either service or goods which are characterized as tangible factors including packaging. Intangible characteristics include branding and warranty condition. In the industrial markets when buying the product it usually includes the service as well. By satisfying a need, a product brings a value to the target customers. In order to gain competitive advantage, a company should produce and sale products that create more value to the customer than competitors (Kotler et al., 2002).

The use of briquettes, for example, have been investigated as a low-technology, cost-efficient fuel that could be used in developing countries in order to improve the efficient of cooking fuel and improve indoor air quality.

More so, other feedstock that is viable and environmental friendly, municipal waste, crop residues, sawdust; cassava, Sweet corn, Coconut and sugar cane, cereals are associated with Bio-ethanol, while Sesame, Palm oil, Palm kernel, Ground nut, Soybean and Cotton seed can generate Biodiesels.

Social acceptance of the Technology is very significant as its lack can be main challenge. If the home community does not accept the technology, there will be no requiring of the services. Most Renewable energy installations failed because the beneficiaries are not conceded during the decision making to deploy the energy systems to them. Involving the end users may generate more attention as they tend to profit more, having been given the option to express their very want and good thoughtful of the project. (E.N.C Okafor, C.K.A Joe Uzuegbu. 2010).

An example of how products need to be adopted, as a relationship-oriented culture, it is significant to be seen to be trying hard to develop good contact at all levels within community leaders and the people. A visit to the state, local government chairman’s, Emir, Obong and Obi, the people respect their leaders and listen to them.

More so, for Finnish companies to get a steady control over the Nigeria market, their production must speak for them positively both social and environment impact.

Price

Price of the product is determined between the manufacturing costs and the strength of the demand. Price is also influenced by middlemen considering the special discounts given and the promotion made. It is good to remember that from the marketing mix price is the only variable generating revenue.

According to Matthew Uchechukwu Okorie (2010) Nigeria government has expressed intention to deregulate her petroleum industry. When this is done it means that petroleum refining and marketing will no longer be under the monopoly of the country's Petroleum Corporation, NNPC. If government adopts competitive market structure for biomass energy products, the implication is that there will be no control over price and no restriction of entry into the market. Currently petroleum product pricing is controlled, but with deregulation price control and subsidy will give way to forces of demand and supply to determine prices. How will this impact on biomass energy market share?

It is expected that deregulation of the petroleum industry will bring about increase in prices of petroleum products. As subsidy is removed product prices will adjust to reflect market price. If the market price of petroleum products is high relative to bio fuels it will encourage investment in biomass production. This would boost biomass energy market share as bio fuels could be sold as a substitute or blended with petroleum products.

Currently, the Nigerian National Petroleum Corporation (NNPC) is investing heavily in the biomass energy exploitation by initiating a joint-venture setting up ethanol plants in several parts of the country in a public-private partnership arrangement that ensures it uptakes all bio fuel production for hybridization activities. Under this partnership arrangement would bio fuel pricing be market driven.

The low purchasing power of the rural and some urban populace must also be considered with pricing strategy because they constitute the larger part of the population of the country. The Finnish companies' impact in the Nigeria economy depends on the price they will fix after considering the uncontrollable element.

Place

Place factor, which is usually referred as the distribution policy, consists of two components; the channel management and logistics management. Channel management covers the concept of setting up and operating an organization and managing the various types of middlemen such as agents, retailers, wholesalers and facilitators. Logistics management concentrates on providing the product at appropriate times and places for the customer. This is the most long- term decision of the marketing mix and is therefore difficult to change in the short term.

Nigeria (North Central and South East) while the North Central and the South East is the food basket of the country, they stands a good chance of benefiting from biomass production as nations around the world are looking at biofuels to help mitigate pollution and global warming. More so, biomass has the potential to create world class industries and provide employment for Nigerians.

The amounts of sustainably harvestable residues for a specific location will vary depending upon climate, soil texture, and the production practices used. Corn produced with conventional tillage requires that more residues be left in the field than corn produced in no-tillage systems. Likewise, corn grown in rotation with soybeans requires more remaining residue than continuous corn because soybeans produce less residue than corn. Crops grown in higher rainfall area, under irrigation produce more biomass than crops grown in areas with less precipitation or without irrigation (Gershwin et al., 2007; Wilhelm et al., 2007).

The distribution channel of biomass in North Central and South East:

Producer of Biomass (On farm/rural processing to chips) - Processors of Biomass (Ethanol Production) – Buyers (end product consumer)

The two regions mentioned above are very good location for Finnish companies to build their factory. They can achieve their goal through either the application of best management practices.

These regions are nearness to raw materials, there is huge land space, the soils are good to cultivate to grow crops, and the manpower is available. The logistics can be done properly well to reach the customers with the best practices to solve the electricity problems and the atmosphere to be conducive for the nation.

Promotion

Promotion element is the most visible of the marketing mix and its purpose is to persuade customers. It includes advertising, sales promotion, personal selling and publicity.

The impact of biomass is an instrument for international cooperation and development in Nigeria. The Finnish Companies must be ready to promote biomass at regional and community level by developing sustaining tools and creating facts and responsiveness about the technology significant, bringing experts to educate the populace, try to organize training for all, have pilot projects that will involve the farmers and local companies, large-scale biomass production could also provide benefits in the form of employment, skills development and secondary industry. There is a need to visit to the state and local government too.

According to Matthew Uchechukwu Okorie (2010) huge capital investments and Foreign Direct Investments will be attracted into rural-sited feedstock chain stretching from agricultural through agro-industrial and petroleum-based

enterprises. It will also lead to increased infusion of modern technology in these sectors. Increased demand for alternative energy light goods such as home appliances and equipment's (stoves, lamps, etc.) will increase the rate of light goods industrialization in the rural economy. In addition, Nigeria (South East and North Central) will attract the benefits of the Clean Development Mechanism under the Kyoto Protocol meant to mitigate the effects of climate change, reduce poverty and increase rural development.

The inefficient management of the petroleum resources created socio-economic challenges which the country is grappling with. This should not be the case with biomass energy resources. Promoting investment climate that ensures energy security without compromising food security should be pursued.

Try to call up programmes when necessary to show them slides and information concerning your technology know-how. Also try to sponsors educational programmes in polytechnics and Universities.

The results gathered from Customer Satisfaction analysis, it became clear that four factors of marketing mix, product, price place and products were the main concern of the customers. Considering the geographical distance between Finland and Nigeria, discovering the most efficient and effective way of distribution channel in order to be able to compete with the existing competitors on the markets as well as to prevent the total costs of the product not to be too high is essential. The price of the raw materials and manufacturing costs are difficult to change but the opportunity to reduce the cost lies in a well defined distribution channel.

Company Case in Finland

According to Westenergy Oy Ab, looking it at Finnish business point of view is constructing a Waste to Energy plant which will utilize source separated combustible waste as a fuel. The plant is built using best available techniques and consideration to the environment and the inhabitants will be taken during the operation.

Westenergy Oy, Ab is owned by five municipal waste management companies in the area (Stormossen Oy Ab, Lakeuden Etappi Oy, Vestia Oy, Botniarosk Oy Ab and Millespakka Oy). The shareholders operate in an area consisting of more than fifty municipalities. There are more than 400 000 people living in the area.

The plant will produce district heat and electricity in a safe and efficient manner, replacing a part of coal and oil ad primary district heat fuels. The plant is a long term solution, taking into account possible tighter emission limits and efficiency demands of the future as well as the waste disposal bans in 2016 and 2020.

The cooperation partner Vaasan Sähkö Oy will convert the produced steam into electricity and district heat. Westenergy will produce more than a third of the annual district heating energy need of Vaasan Sähkö.

The Power Plant will use 150 000 t/a of source separated combustible waste. The efficiency ratio of the plant will be approx. 85% fuel capacity 61 MWth, electricity capacity 15 MWe gross, district heating capacity 40 MW and 8000 operation hours annually. (Westenergy. [Ref. 6 December 2011].)

5 CONCLUSIONS

The goal of the thesis is finding out the adapting means of competition of Finnish Biomass product manufacturers entering Nigerian markets. In course of my review, the Nigeria has the ability for profitable operation, feedstock supply, sustainability and has large preserve of expected resources for biomass energy production.

The Electric Power Reform Act, signed into law in March 2005, forms the basis for the hopefulness that continuing private investment and management strategies would give the momentum to turn around the electricity sector, with better generation and stable energy supply delivery, with biomass energy-based electricity generation technologies playing a major function. Get hint from other developing nations like India, China, Indonesia, Thailand, and Kenya indicate that there are group of potential in the acceptance of these technologies. These potentials have been inspired by purposeful government policies to give confidence to the private sector, the second and third tiers of government, local communities and to install and manage biomass-energy-based electricity generation plants.

The main advantage of biomass energy solutions includes less stress in maintenance and simplicity of the technologies.

More so, the country electricity demand is on the high side, the supply has not meet the needs and the constant to meet the require which left People of Nigerian with no alternative than to be using their owned fossil fuel power generating systems and the use of it is expensive and not in nature accepted.

The potential of Alternative energy resources in the nation is put at 1.5 times that of fossil energy resources. Biomass has great potential in Nigeria and if the Finnish company Westenergy Oy Ab and other Biomass manufacturers can come by considering improving on the low supply of power sector in the nation, they could take advantage of the villages, through adoption and the use of these

alternative power resources for growth in the country. The Finnish have the ability and the technical know-how to turn around the situation.

The implementation of high-efficiency, sophisticated technology has been shown to be the most dependable way of increasing the use of bioenergy in Finland.

There is good co-operation between companies, research organizations, universities and public authorities. This has given a solid base for successful research, development, demonstration and commercialization of new processes.

However, a series of technology development programmes for bioenergy was launched in 1980’s (32 years). The programmes of Tekes, the Finnish Funding Agency for Technology and Innovation, have focused on areas such as combustion, production of biomass based fuels and environmental impact. Tekes programmes forums for the exchange of information and networking between companies and research groups. They provide opportunities to carry out ambitious Research and Development projects and develop business expertise and international co-operation. These programmes have been essential part of Finnish innovation system. This experiences mentioned above are welcome in Nigeria and this could be another source of profit for them.

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