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SINESS PLAN reduce-recycle-reuse

March 2020

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# Acronyms/Abbreviations

Acronym	s/Abbreviations	
AWC	Akanran Waste Converters	
BPE	Bureau of Public Enterprises	
Disco	Distribution Company	
DTT	Disruptive Transportation Technology	
ECN	Electricity Corporation of Nigeria	
EOI	Expression of Interest	
EPC	Engineering Procurement & Construction	
EPSR	Electric Power Sector Reform	
ERP	Enterprise Resource Planning	
Fintech	Financial Technology	
FGN	Federal Government of Nigeria	
GCA	Grid Connection Agreement	
GDP	Gross Domestic Product	
Gencos	Generation Company	
GHG	Green House Gas	
GTA	Gas Transportation Agreement	
HTP	High Temperature Pyrolysis	
IOC	International Oil Company	
IPP	Independent Power Producer	
LGA	Local Government Area	
MO	Market Operator	
MOF	Ministry of Finance	
MW	Mega Watt(s)	
MYTO	Multi Year Tariff Order	
NBET	Nigeria Bulk Electricity Trading Company	
NDA	Nigeria Dam Authority	
NERC	Nigeria Electricity Regulatory Commission	
NEPA	National Electric Power Authority	

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NEPP	Nigeria Electricity Power Policy	
NERC	Nigeria Electricity Regulatory Commission	
NESC	Nigerian Electricity Supply Company	
NGC	Nigerian Gas Company	
NIPP	National Integrated Power Project	
O&M	Operations and Maintenance	
OCGT	Open-Cycle Gas Turbine	
PHCN	Power Holding Company of Nigeria	
PPA	Power Purchase Agreement	
PSP	Private Sector Participants	
RDF	Refuse Derived Fuel	
SO	System Operator	
SRF	Solid Recovered Fuel	
SSA	Share Sale Agreement	
STG	Steam Turbine Generator	
TCN	Transmission Company of Nigeria	
TEM	Transitional Electricity Market	
TSP	Transmission Service Provider	
USD	United States Dollar	
WCT	Waste Conversion Technology	
WM	Waste Managers	

# 1. Executive Summary

In this section:

- The Business
- Financial Overview

- Funding Requirement
- Business Objective and Vision

# **The Business**

Waste Conversion Projects(WCP) is an enterprise resource planning (ERP) solution provider in the solid waste management (SWM) sector. WCP proffers solution to issues concerning the effective collection and efficient disposal of waste in the Nigerian State. We provide financial technology(fintech) solution to enforce the collection of waste service charge, manage waste collection from cradle to grave with our disruptive transportation technology(DTT), and undertake waste conversion technology(WCT) to cure environmental pollution from open waste dumpsites. WCP supports the plight of waste management agencies to create standards in order to measure the performance of Private Sector Participants(PSP) and Waste Managers(WM).

WCP's interest in renewable energy is predicated on the global Sustainable Development Goals(SDG) – 7, which is based on the provision of affordable and clean energy. The attributes achievable from clean energy projects are derivable from the use of sustainable raw materials engaged through the efficient harvesting of resources with low environmental impacts and carbon footprints. To consolidate our position as one of the leading promoters of creative engineering initiatives, WCP directs its activities towards ground breaking innovations while adapting to changes in economic and social policies within an evolving environment.

With a view to engage Municipal Solid Waste(MSW) for renewable energy, WCP notes the challenges presented by poor SWM in Nigeria. The challenges leave a major gap in the Nigerian economy as it has a direct impact on health, transportation and telecommunication sectors. The opportunity to develop a viable SWM sector creates a circular economy with the potential to provide employment for +200,000 people. With a traction of the SWM sector, the Nigerian economy will benefit from a requisite demand for 4,600units of trucks, 38,000units of tricycles, 8400units of containers which shall immediately be required. The Nigerian SWM sector is a \$1.4billion industry which has the potential to grow to \$5billion in 10years.

The 2020 to 2030 business plan detailed herein lays out our goals and tasks to grow organically and, over time, control a sizable market share as we build a successful brand in this highly opinionated sector. With our head-office at 3 Kudeti Avenue, Onireke, Ibadan, Nigeria; WCP balances cutting edge technology, safety, and a positive environment for its development. WCP's program is provided with a high level of quality service, detailed attention to customer needs and a robust determination to create a positive development of the SWM sector.

# **Funding Requirement**

In order to achieve its 10-year plan, the business is now seeking to raise \$154.677million (#55.683billion) via a combination of equity and debt finance. With debt repayment from FY3 thru FY7, the business demonstrates a strong trading and impressive growth forecasts through 2030. The financial projections for WCP is broken down into its segmented business cases; a) WCP Capital – the fintech subsidiary of WCP forecasts a balance sheet of \$159.865million in FY10 while b) Akanran Waste Converters(AWC) – a waste conversion subsidiary of WCP forecast a balance sheet of \$211.016million in FY10. WCP Capital provides the business case for the implementation of our disruptive financial and transportation technology(Trojan) in the enforcement of the waste collection charges and management of waste collection from cradle to grave, while AWC presents the business case for the development of W2E and W2C plants at Akanran, Ibadan – a technology which shall be replicated in 36 States of Nigeria and the FCT.

#### **Financial Overview**

For the business growth, we have produced a five-year forecast for the two(2) business cases. The highlights of which are shown in the financial summary below:

	FY 1	FY 2	FY 3	FY 4	FY 5
Revenues	\$7,143,119	\$14,286,238	\$23,036,558	\$30,715,411	\$39,287,154
Direct Expenses	\$4,429,891	\$5,804,247	\$7,038,470	\$8,272,692	\$9,506,915
Gross Profit	\$2,713,228	\$8,481,991	\$15,998,089	\$22,442,719	\$29,780,239
Gross Profit (%)	38.0%	59.4%	69.4%	73.1%	75.8%
Other Expenses	\$2,390,000	\$5,613,041	\$8,967,639	\$11,004,573	\$13,252,955
EBITDA	\$323,228	\$2,868,950	\$7,030,449	\$11,438,146	\$16,527,284
Depreciation	\$999,000	\$1,832,000	\$2,345,600	\$2,345,600	\$2,345,600
Amortization	\$0	\$0	\$0	\$0	\$0
Preliminary Expense Written off	\$0	\$0	\$0	\$0	\$0
Interest Expense	\$235,600	\$620,500	\$748,800	\$599,200	\$449,400
Income Tax Expense	\$0	\$0	\$1,010,700	\$2,548,000	\$4,119,700
Net Income	(\$911,372)	\$416,450	\$2,925,349	\$5,945,346	\$9,612,584

#### WCP Capital Summary

# **AWC Summary**

	EV 1	EV 2	EV 3	EV 4	EV 5
Revenues	\$2.025.000	\$10.800.000	\$40.950.171	\$46.188.651	\$52.343.865
Direct Expenses	\$432,540	\$1,555,449	\$13,090,076	\$14,070,325	\$14,910,930
Gross Profit	\$1,592,460	\$9,244,551	\$27,860,096	\$32,118,327	\$37,432,935
Gross Profit (%)	78.6%	85.6%	68.0%	69.5%	71.5%
Other Expenses	\$634,600	\$1,304,994	\$9,281,162	\$10,382,632	\$11,653,640
EBITDA	\$957,860	\$7,939,556	\$18,578,933	\$21,735,695	\$25,779,295
Depreciation	\$2,065,500	\$10,939,400	\$13,541,600	\$13,541,600	\$13,541,600
Amortization	\$0	\$0	\$0	\$0	\$0
Preliminary Expense Written off	\$0	\$0	\$0	\$0	\$0
Interest Expense	\$736,000	\$4,639,300	\$5,940,400	\$4,752,300	\$3,564,200
Income Tax Expense	\$0	\$0	\$0	\$0	\$518,800
Net Income	(\$1,843,640)	(\$7,639,144)	(\$903,067)	\$3,441,795	\$8,154,695

# **Business Objectives and Vision**

WCP has an objective to significantly develop the SWM sector by providing a one-stop solution for effective waste collection and efficient waste disposal in Nigeria and sub-Saharan Africa.

Our vision is to create a leading ERP solution provider for the SWM sector with a corporate social responsibility(CSR) to build local capacity in engineering and information technology by improving access of indigenes to qualitative education.

#### **Keys to Success**

In order to achieve a dependable position in the SWM space, WCP shall concentrate on the following tasks:

- Solicit and secure contracts for the implementation of our disruptive fintech and transportation technology in the six(6) geopolitical zones over the next three(3) years
- Undertake and complete the development of six(6) W2E and W2C projects over the next five(5) years.
- Source and anchor corporate finance (debt and equity) of \$157.953million(\\$556.863billion) within the next 12 months in order to setup WCP Capital and AWC, and provide essential working capital needed for the operation of the companies.

# 2. General Company Description

In this section:

- Company History
- Company Location and Facilities
- Business Goals and Objectives

#### **Company History**

• Company Ownership

• Mission Statement

WCP is a Special Purpose vehicle(SPV) introduced by Fiat International Ltd to implement an ERP solution for the SWM sector of Nigeria. Fiat is active in agriculture, housing, health, transportation, water and environmental sectors of the Nigerian and sub-Saharan African markets. With a history which dates back +30 years, the company has extensive experience in the provision of engineering, procurement and construction services for infrastructure and building development.



Prior to the formation of WCP, Fiat engages in private and public sector initiatives as well as engineering consulting and construction services. Fiat has extensive experience undertaking engineering, procurement and construction projects for public sector works. WCP is Fiat's response to an identified problem in the SWM space, as waste continues to adorn the landscape of the Nigerian State and constitutes a nuisance - as it takes up prime real estate. Waste in its element presents challenges to the generators; as such waste burning becomes the order of the day, and environmental pollution prevails. Given the uncanny resolve of a purpose-driven development, an opportunity to *reduce - recycle - reuse* waste provides an advantage in the quest for sustainable development. The attributes of scalability, reliability and dependability associated with the growth potentials becomes the desired goal to achieve in the sector.

We have the requisite technical and managerial skills to perform in all fields of our practice and we continue to build capacity to excel in the sectors we engage. Our development approach is focused on engaging engineering related strategies as we adapt technologies to local conditions in order to produce creative as well as innovative development options for growth. As you would expect, we have an excellent background of working with public agencies; therefore, providing a strong basis for future relationships in the public-sector market while we build our presence in the private sector.

WCP strategy and goals to take a position in the Nigerian SWM sector is gaining recognition as State Governments in South West, Nigeria show keen interest to engage our expertise in the deployment of W2E technologies. The prior short-listing of our expertise in 2010 by the Ekiti State Government (EKSG) is being revitalized for engagement as we recently re-opened discussions with the government for proper implementation of our updated plan. Also, our renewed discussion with the Ondo State Government (ODSG) is being approached cautiously in order to properly wrap our minds around an enriched deployment of our robust technologies in Akure metropolis as we note the existing cumbersome technology of waste to wealth presently being employed in the



metropolis. Our continued interaction with the Oyo State Government (OYSG) in the deployment of our technologies has resulted in the identification of a site to deploy our W2E solution. We are in negotiations to enter into agreement for the utilization of 2200tpd of waste in the production of 42,000tpa of organic fertilizer and 20MW of power. The waste tariff fund(WTF) proposed by WCP Capital is recognized as a comprehensive solution to the challenges presented by waste collection in the Nigerian State.

# **Company Ownership**

WCP is being registered as a Limited Liability Company in Nigeria. With head-office at Ibadan, WCP's shares were initially subscribed to in Nigeria by:

- Fiat International Limited (53%)
- Mallam Yayale Ahmed (10%)
- Prof. Olufemi Vaughan (5%)
- Mallam Umaru Ibrahim (5%)
- Mr Greg Malpas (5%)
- Alhaji Mohammed Edewor (2%)
- Investor Company (20%) Held in Trust

# **Company Location and Facilities**

WCP's head-quarter is located in a high brow, quality enclave at Onireke - a serene Government Reservation Area of Ibadan, Oyo State, Nigeria. With project offices proposed across the six(6) geopolitical zones of Nigeria, an in-house internet server and 24-hour answering service would create an intranet to link the offices while also providing access through which all clients or business communications can be dealt with in an expedient and fluid manner.

# **Mission Statement**

"To engage superior waste collection and utilization technologies in the SWM sector of Nigerian and the Sub-Saharan regions."

# Vision

"To create a preferred company of choice in the SWM sector of Nigeria and Africa"



# **Business Goals and Forecast**

As part of our business plan, we have prepared a full five-year forecast, the highlights are:



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# **3. Products and Services**

In this section:

• Service Offered

• Products

WCP operates strategic waste collection in inner city zones and outer city limits as we enforce waste service charges, manage waste collection matrix, and convert waste to energy (electricity and compost). More recently, opportunities emerged for WCP to deploy proven robust financial, transportation, W2E and W2C technologies for the problems in SWM in Nigeria. As such, our plan to deploy our strategy nationwide.

# **Services Offered**

Our products and services are built around corporate structures – *WCP Capital* presents our disruptive financial and transportation technology for a national engagement, while we deploy state-based W2E and W2C technology in each locality based on the quantum of waste generated in each district. In this respect, we present *Akanran Waste Converters(AWC)* as our premier W2E and W2C deployment at Akanran - Ibadan, Nigeria.

Given the situation and as enforcement of waste service charge remains a challenge for the Nigerian State, *WCP Capital* shall deploy its disruptive fintech to undertake the collection and enforcement of waste service charge and transportation technology to effectively manage waste collection from cradle to grave for each State Government in Nigeria. In the same vein, the disposal of waste in open dumpsite continues to create environmental pollution within its vicinity and districts as refuse burning or refuse induced fire continues to pollute the air with the fumes of greenhouse gases (GHG) and as such depletion of the ozone layer. As clearly confirmed from environmental impact studies in the sector, leachate continues to pollute ground water reservoirs - a situation that gradually causes environmental hazards in the localities. Going from the above, *AWC* proposes a waste utilization approach which immediately mitigates the disposal of waste as the conversion of waste to energy and compost (organic fertilizer) provides an end-to-end solution in the SWM sector.

WCP, subsequently, creates an agglomeration company which is in synergy with major industry experts to deliver enterprise resource planning (ERP) solution to the SWM sector. WCP brings waste generators and waste collectors together as partners in the resolution of the SWM problems in Nigeria. The challenges of the SWM sector seems quite daunting - as funds required to effectively undertake waste collections overwhelms the Nigerian State Governments. In addition, the tasks required to create Class "A" or "B" sanitary landfill easily escapes the administrators and sympathisers in the Nigerian SWM sector as the resultant impact of engaging open dumpsite is not apparent yet. In this respect, the governments have simply narrowed themselves to the provision of open dumpsites which are also not managed efficiently. As such, dumpsites all across the nation are at different levels of catastrophe.

#### COMMERCIAL WASTE COLLECTION

WCP shall collect MSW regularly from households of waste generators. WCP shall create a waste collection strategy in which MSW is collected from inner-city, high density zones where high calorific organic waste is generated and is consolidated at transfer stations strategically located in the local governments. WCP shall transport the waste aggregated at transfer stations to its IWMF using designated hook-lift trucks periodically. Whether it's a one-time bulk trash removal bin from construction sites, or regular commercial trash services from abattoirs, market, farms, and agricultural processing business, WCP shall provide a range of containers and service schedules to match the waste generators needs and budget.

- Our pick up schedules and frequencies are designed for the intended operations by our local experts.
- Our collection fleet includes trucks outfitted with route management technology and cameras, optical sensors and weight Doppler that make them ideal for accessing property safely and efficiency.
- Our extensive inventory of containers and pickup arrangement solves challenges associated with confined pick up areas. We provide on-the-ground advice and satellite based solutions to help in the selection of size and type of equipment that works for the specific building envelope, waste streams and custodial staff.

#### WASTE CONVERSION AND RECYCLING

The demand is growing world-wide for businesses to work toward sustainable practices by diverting organic waste away from landfills. As such, hotels, resorts, catering companies, schools, hospitals, nursing homes and senior living facilities, among others are facing the challenge. Commercial Recycling at WCP helps to make the business an even better steward of the community, our children, and the planet by reducing our need for raw materials and dependence on fossil fuels. We offer either single stream recycling of all recyclable items (plastic, paper, glass, metal) and/or cardboard-only recycling. We invest in powerful processing technologies utilizing pyrolysis to recycle tyres and plastics into reusable syngas and fuel oil, and material recovery facilities to get the highest rates of waste diversion efficiently and cost effectively.

In this regards, WCP has a special program for the conversion of organic waste to compost (W2C), which include recycling the waste into compost and other products. And in addition, the conversion of waste to electricity (W2E). The technology proposed for engagement of the W2C is a patented rapid thermophilic digestor technology while the W2E is the incineration technology.

# **Products**

WCP rents, sells and services compactors for business. If your waste stream is high-volume but low density – like that of a grocery store or hotel – a compactor may help your business significantly reduce the frequency of your commercial waste collection (and the cost of

service). In fact, depending on the materials, four to five times as much waste can be handled with a compactor system from WCP. WCP compactors will handle;

- Wet Refuse; food waste, plant waste, residential waste, organic waste and other damp or moist types of waste.
- Dry Refuse; paper goods, cardboard boxes, wood and glass.
- Bulky Refuse; pallets, crates, appliances, furniture and other large or unwieldy items.

In respect of the foregoing, WCP shall offer a wide range of equipment types and models to fit the waste management needs and budget in the different districts and LGAs. As such, WCP shall provide;

- Skip Bins
- Skip Containers
- Waste Tricycles
- Hook-Lift Trucks
- Mobile Compactor Trucks
- Mobile Portable Compactors
- Trash Compactors
- Bin Compactors
- Compacting Dumpsters







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# 4. Market Analysis

In this section:

- Nigerian Solid Waste Management Sector
- Nigerian Agricultural Sector
- Relevant Market Size

- Nigerian Power Sector
- Market Growth

Nigeria is an emerging market which is growing as a result of developments in manufacturing, financial services, communications technology and entertainment sectors. It is ranked as the 21<sup>st</sup> largest economy in the world in terms of nominal GDP, and the 20<sup>th</sup> largest in terms of purchasing power parity. It is the largest economy in Africa and has a major shortfall of power generation capacity which arguably is the most critical of Nigeria's infrastructure challenges. Nigeria being the most populous country in Africa has a population of over 180 million citizens and has its Capital in Abuja. The country's official language is English. As one of the largest economy in Africa, there are numerous notable investment opportunities, as Nigeria is vastly rich in mineral resources. The mineral resources include: Oil, Gold, Bitumen, Coal, Lignite, Coal, Iron Ore, Uranium and many more.

Nigeria's Gross Domestic Product (GDP) was worth \$492,07 billion dollars in 2016. The GDP value of Nigeria represents 0.79 percent of the world economy. The Nigerian market has developed focusing on increasing indigenous participation in the oil and gas industry. This is evident through the Nigerian government initiative of increasing Local Content and ensuring that indigenous companies have a greater part in developing oil and gas assets, agricultural produce, mining assets and many more, the Nigerian economy is on a growth trajectory.

# **Economic Outlook**

After the rebasing of the Nigerian economy in 2014, the service sector contributed 64.9 trillion Naira (USD 213 billion), racking up 65% of Gross Domestic Product(GDP) in 2016. Also. the agricultural sector contributed 21 .5 trillion Naira (USD 70 billion) to nominal GDP at end of 2016, which translated into 21% of GDP. While both oil and the non-oil sector contributed 5.5 trillion Naira (USD 17 billion) and 9.75 trillion Naira (USD 30.8 billion) respectively; therefore, making up 5% and 9.75% of nominal GDP. The nominal GDP increased by 7.45 trillion Naira (USD 23.6 billion), reflective of an 8% increase, while the service sector increased by 6.14 trillion Naira, which is a 10.4% growth with a contribution of 84% of total growth to nominal GDP. The agricultural sector also increased by I.89 trillion Naira, which is a 9.6% increase in the agricultural sector and 25.3% of total nominal growth of GDP. While both oil and non-oil (manufacturing) witnessed losses of 500 billion and 60 billion Naira, Nigeria's economy, based on an increase in oil output as well as the accelerated implementation of public and social investment, grew by about 1% in 2017 and 2.5% in 2018. The recent negative growth rate of the Nigerian economy has resulted in a renewed focus on economic diversification, promoting growth in the private sector, and driving job growth and ensuring ease of doing business in Nigeria.

# Nigerian Solid Waste Management Sector

Numerous studies of MSW have emerged that the SWM sector is the greatest challenge facing environmental protection agencies in Nigeria and sub-Saharan Africa. The SWM sector is characterized by inefficient collection methods, insufficient coverage of the collection system and improper disposal. The waste density in Nigeria ranges from 280 to 370 kg/m<sup>3</sup> and the waste generation rates ranges from 0.44 to 0.66 kg/capita/day. The common constraints faced by environmental agencies include lack of institutional arrangement, insufficient financial resources, absence of bylaws and standards, inflexible work schedules, insufficient information on quantity and composition of waste, and inappropriate technology<sup>1</sup>.

Also interesting to note is that SWM is one of the greatest challenges facing state and local government agencies in Nigeria. The volume of solid waste being generated continues to increase at a faster rate than the ability of the agencies to improve on the financial and technical resources needed to contain this growth. The SWM sector in Nigeria is characterized by inefficient collection methods, insufficient coverage of the collection system and improper disposal of solid waste. The quantity of solid waste generated in urban areas in industrialized countries is higher than in developing countries; still municipal solid waste management remains inadequate in the latter. Solid waste in developing countries differs from developed countries. Most developing countries, Nigeria, inclusive have solid waste management problems different from those found in industrialized countries in areas of composition, density, political, and economic framework, waste amount, access to waste for collection, awareness and attitude. The wastes are heavier, wetter and more corrosive in developing cities than developed cities.

In developing countries, local authorities spend 77-95% of their revenue on collection and the balance on disposal (Ogwueleka, 2003), but can only collect almost 50-70% of municipal solid waste (MSW). In the past, the focus has been on the technical aspects of different means of collection and disposal (World Bank, 1992), but recently, attention has been on enhancing institutional arrangement to service delivery, with a special emphasis on privatization (Cointreau, 1994). Nigeria is presently experimenting with the privatization of this sector. The Federal Government has instituted the National Integrated Municipal Solid Waste Management Intervention Programme in seven cities of Nigeria. The seven cities are Maiduguri, Kano, Kaduna, Onitsha, Uyo, Ota, and Lagos. Lagos state government established municipal solid waste management policy to encompass private sector participation in waste collection and transfer to designated landfill sites<sup>2</sup>.

Ezeah & Roberts (2013) observed that the state of solid waste management in Nigeria has been a major concern to stakeholders. Ogwueleka (2009) reported that inefficient collection

<sup>&</sup>lt;sup>1</sup> T. Ch. Ogwueleka, Municipal Solid Waste Characteristics and Management in Nigeria, Iranian Journal of Environmental Health Science & Engineering · July 2009

<sup>&</sup>lt;sup>2</sup> Ditto as above.

and unsafe disposal are some of the characteristics of waste management in the country. Ogu (2000) highlighted that about 80-90% of wastes generated in some low level income communities in Africa are not collected for safe disposal. Omuta (1987) reported that the major players involved with waste management in Nigeria are the public and the private sector. His view is that, the public sector is driven by the government agencies and the ministry of environments in the various states. He added that some of these governments agencies could be federal, states or local government bodies. On the other hand, Omuta observed that private sector involvement in waste management is driven by private companies. He added that these companies either partners with government agencies or provide waste management services to companies, commercial premises or members of the public for a fee. He noted another form of private initiatives in solid waste management; these are the informal waste collectors which collect waste for a fee. This introduction of private companies in waste management became necessary as a result of the degradation of the environment from inefficient waste management practices (Ogu, 2000)<sup>3</sup>.

Ogbonna et al. (2007) reported that in response to the enormous challenges posed by municipal solid waste management, the Government is taking steps to address these problems by engaging local contractors to evacuate waste. Ogu (2000) added that such steps were necessary in order to bring private sector investment into waste management and to enhance service delivery. Ogbonna et al. (2007) observed that cities are divided into sections for the local contractors. However, inefficiency still thrives due to the lack of coordination on the part of the Government and the lack of expertise on waste management issues by the environmental agencies. The reasons behind inefficient waste management practice in Nigeria have been well researched. For example, Agunwamba (1998) reported that there is a general lackadaisical attitude on the part of the government towards waste management. In addition, Adeyemi et al. (2001) observed that in Nigeria the management of municipal solid waste revolves mainly around open burning, open dumps, landfilling, reuse/recycling and waste conversion. Arukwe (2012) added that the only management practice adopted widely throughout Nigeria involves disposal of waste on open dumps<sup>4</sup>. *Given the clear inefficiencies* observed with several states in the country lacking access to appropriate technology to effectively manage the collection of its waste, and in our drive for sustainable development; WCP initiated the development of agglomeration arrangements with the engagement of disruptive fintech and transportation technology to take position in waste management with a strategy to provide a one-stop solution to SWM in Nigeria. In this respect, Trojan 1 is being developed to undertake the enforcement of waste service charge, the management of waste collection from cradle to grave and the provision of an emergency response support for the SWM sector in the States.

<sup>4</sup> Ditto as above.

<sup>&</sup>lt;sup>3</sup> Ebikapade Amasuomo & Jim Baird; Solid Waste Management Trends in Nigeria, Journal of Management and Sustainability; Vol. 6, No. 4; 2016

# **Nigerian Power Sector**

The history of the Nigerian power sector dates back to the 19th century when the first generating plant was installed with a capacity of 20MW. The first utility company in Nigeria, the Nigerian Electricity Supply Company was established in 1929. Further developments led to the creation of the Electricity Corporation of Nigeria (ECN) in 1950 tasked with the responsibility of coordinating the distribution of electricity in the country. After independence, the Nigerian Dams Authority (NDA) was established with the responsibility of overseeing the construction and management of hydropower stations in the country. The NDA was mainly a power generating entity while the ECN was a distribution entity. In 1973, these two entities were merged which formed the now defunct National Electric Power Authority (NEPA).

#### Nigeria Electricity Demand

Electricity demand in Nigeria far outstrips supply. Nigeria trails far behind countries such as Egypt with around 27,000MW of installed generation capacity and South Africa with an installed generation capacity in excess of 40,000MW. Nigeria's electricity consumption on a per capital basis is among the lowest in the world. More than half of the population have no access to grid supply electricity relying on self-generation.

The power sector in Nigeria is saddled with a major shortfall of generation capacity which arguably is the most critical of Nigeria's infrastructure challenges. In its report of 1Q-2008, the CBN suggests that electricity generation stood at 3850 MW and President Yar'Adua predicted that power shortages would continue until at least 2015. In this respect, the Presidential Committee on Power Sector Reforms estimated that rehabilitating and upgrading the country's crumbling



electricity sector by 2020 would require \$85 billion (N31.45trillion) in investment. A recommendation was made to gradually increase the generation capacity in order for the program to be successful. To this end, specific targets of 6,000 MW was expected in 4Q-2009, 10,000 MW in 4Q-2011 and 20,000 MW in 4Q-2020. As it is, the power sector is still grossly short of its targets even though the sector has been un-bundled. *And given that several states in the country lack access to appropriate technology to manage its waste, and in our drive for sustainable development; WCP has entered into commercial venture arrangements with reputable international developers to take position in waste management with a strategy to generate power from waste. In this respect, 20MWh of green power is being developed at Aba-Eku, Akanran in Ona Ara LGA, Oyo State and with the capability to replicate the power plant nationwide.* 

# Nigerian Agricultural Sector<sup>5</sup>

#### Nigeria's vast farming base providing potentials in fertilizer market

Nigeria with its 923,800 square kilometers of land area, of which 60 million hectares of arable land (including abandoned land) is considered the biggest market in Africa. Currently, Nigeria boasts of 28.2 million hectares of cultivated area, 28.3 million hectares of pasture, 10.9 million hectares of forest and 13 million hectares of water surface. Nigeria is endowed with tidal wetlands, tropical rain forest, savannah, and frontier areas of tropical desert. Nigeria has highlands with an elevation of 1500-1800 meters, which can be grown sub-tropically



with even temperate crops. In a word, Nigeria abounds in diverse land resources. Nigeria agricultural development has a long history and good foundation. Agriculture employment population accounts for 70% of the whole workforce. The average annual increase in agriculture reached to 3-6% in 2011-2015. However, backward agricultural technology restricts its development. Therefore, there is a potential fertilizer market in Nigeria.

#### Nigeria's poor land condition and low fertilizer usage

Nigeria's land is barren. According to the Federal Ministry of Agriculture and Rural Development, and the Bureau of Nigeria Survey; nitrogen deficiency is severe in more than 80% of the land in Nigeria (nitrogen content below 0.1%), more than 75% of the land is in serious phosphorus deficiency (phosphorus content below 10mg / kg), more than 60% of the land is moderate or severe in potassium deficiency (potassium content below 25 mlg / kg). Due to high prices, the annual application amount of fertilizer is only 1 million tons (of total various fertilizer),



only an average of more than 30 kilograms per hectare, which is well below China's farmland fertilizer usage. Therefore, Nigeria has great potentials in chemical and organic fertilizer consumption and usage. In Nigeria, it is 20kg/ha of fertilizer usage on the average, which lags

 $<sup>5\ \</sup>underline{https://fertilizer-machinery.com/solution/Nigeria-Fertilizer-Market-Analysis.html}$ 

behind some countries in Africa, such as South Africa and Egypt. The average fertilizer usage is 100kg/ha. However, the most common usage rate is 200kg/ha. As is known to all, fertilizer usage is related to crop growth. To apply proper fertilizer accelerates their growth and enables higher production. The government should make efforts to increase in grain yield and nutrients for crops and active fertilizer market in Nigeria.

#### Total fertilizer imports value and consumption in Nigeria

Because of low production in Nigeria, most of fertilizer used is imported. Thus, an over dependence on imported fertilizer results in a drain on the foreign reserve. What's worse, it leads to more demands on fertilizer importation and high fertilizer price, as such farmers find fertilizer purchase to be unaffordable. The fertilizer consumption of the fertilizer production percent in Nigeria increased from 10kg/ha in 2006 to 17.8 kg/ha in 2014. Fertilizer consumption, compared to fertilizer production, was 1086.4% in 2010. In 2013, the proportion was 342.6%.

#### Fertilizer Production in Nigeria

There were two big fertilizer production manufacturers - the Federal Super-Phosphate Fertilizer Company (FSFC) which was set up in 1976 and the National Fertilizer Company of Nigeria (NAFCON) which was set up in 1988 for the production of urea. Because of poor management, the two fertilizer companies have stopped production for over 10 years. At first, the designed capacity of the two Nigeria fertilizer plants was 1 million tons per year. However, all attempts to turn them around have failed. Finally, the government sold the two companies to private entrepreneurs, and presently more than 30 fertilizer companies have been established. Except for FSFC and NAFCON, many of the fertilizer companies were established with different production capacity in different states of Nigeria. The main fertilizer type in Nigeria is urea and phosphate compound fertilizer. There are NPK compound fertilizer and blend fertilizer, like triple 15-15-15, 20-10-10, 10-20-10, etc. According to the different kinds of crop needs, the fertilizer types are different.



In the past, production of fertilizer in Nigeria was low, and this lead to high fertilizer importation. First, the seasonal lack of fertilizer supply gave rise to high fertilizer prices, and then farmers had difficulties in purchasing suitable fertilizer. In addition, high fertilizer price is another factor that causes low fertilizer usage. Even

though there are some subsidies for fertilizer, fertilizer prices are still high because of excessive intermediate link and official corruption. To curb the issues of low fertilizer quality, the Federal Ministry of Agriculture and Rural Development issued a new Draft Fertilizer Bill in

2015, aiming to increase fertilizer quality, fertilizer production technology, inspection and management. Therefore, farmers can get access to high-quality fertilizer. In line with the draft bill, Nigeria fertilizer plants, fertilizer market department, fertilizer brands and quality are required to be inspected and authenticated by government.

#### Nigeria's fertilizer policy environment

In 2001, a New Agricultural Policy Thrust was issued in Nigeria, and in 2006, the National Fertilizer Policy for Nigeria was adopted. The bill included fertilizer production policy, domestic marketing policy, international trade policy, quality control policy, environmental policy, etc. The policy aims to reach the objective of "facilitating farmers' timely access to adequate quantity and quality of fertilizers at competitive and affordable prices." It provides some suggestion for fertilizer production manufacturers, farmers and government. The policy provides guidance on governments actions to promote fertilizer industry and agricultural development. In fact, some principles were neglected, especially for fertilizer making machine usage. In a sense, low fertilizer usage on soil in Nigeria is related to insufficient supply but huge demand, farmers' low income and high fertilizer retail prices. What's more, limited fertilizer manufacturers and fertilizer usage has been increased in agriculture because of the fertilizer policy.

#### Fertilizer cost in Nigeria

In Nigeria, fertilizer cost is divided into two components: international cost and domestic cost. Fertilizer pricing in domestic fertilizer market are negotiated by government and fertilizer suppliers and importers. And then fertilizer is sold to 36 states according to negotiated price. Of course, the fertilizer price is a little different based on fertilizer type and size. Therefore, the final fertilizer price that farmers buy fertilizer is set up by government and suppliers. When setting price, the government, on behalf of local farmers and organizations, are in dominant position during negotiation. Farmers have nothing to do during the process. What they hope is to buy fertilizer at reasonable prices and get some benefit from subsidy.

# Organic fertilizer and organic farming in Nigeria.

In Nigeria, organic farming is still lagging behind. On the one hand, it is related to the population and policy. On the other hand, Nigerian farmers hope to increase crop production capacity to meet the demands of the country's food needs. Thus, what they are more interested in is conventional farming. Many farmers fail to practice organic farming because they do not obey exact rules. However, there are some organic fertilizers and compost plus organic farmers. The organic farmers market began in Ibadan, Oyo State, Nigeria in Dec., 2014. The farmers lack the proper education and awareness of the advantages of organic fertilizer farming, but they look forward to acquire the knowledge of organic fertilizer production and usage.

Although farmers' awareness about organic fertilizer and organic farming still needs to change, there is no doubt that the global trend is shifting towards sustainable development. The use of organic fertilizer is a new development direction for agriculture in Nigeria. There are several organizations related to organic farming, such as Organic Farmers Association of Nigeria, Nigerian Organic Agriculture Network (NOAN), Organic Fertilizer Association of Nigeria, etc. Some constraints exist in organic farming in Nigeria, like lack of technical knowledge, lack of research, lack of awareness of organic farming, insufficient supporting fertilizer making machine, etc. Anyway, there are great potentials for organic fertilizer and organic farming market in Nigeria.

#### Nigeria's broad fertilizer development prospects

Like many developing countries in Africa, Nigeria has great fertilizer market potential.

Because there are urgent needs for increasing food and plants production, farmers hold great expectations of cheap but high-quality fertilizer. In addition, low crop production drives fertilizer market development. As for the agriculture policy, the Nigerian government continues to work on agricultural transformation. The government defined its overall goal and objective for ensuring food security, as the realization of self-supply sufficiency in



grains production and export expansion. In addition, the government continues to find a way to strengthen its efforts to support agriculture. In this regards, the Nigerian market is beneficial and supportive of the fertilizer market development. In recent years, the pace of fertilizer plants construction accelerated in Nigeria, as several fertilizer plants accessed investments, and the natural gas industrial park for nitrogen production - Indorama's fertilizer plant started operation, and also the Moroccans opened a fertilizer factory in Nigeria. On the other hand, organic fertilizer production line construction in Nigeria is also noticed to be coming on line. In summary, fertilizer production in Nigeria will continue to develop based on the vast population and food demand. *With a view to engage sustainable development in waste conversion; WCP entered into commercial venture arrangements with a reputable international developer to take position in the production of organic fertilizer using the rapid thermophilic digestor technology single line 50tpd plant to produce 35tpd of high grade compost. In this respect, 140tpd organic fertilizer is being developed at Aba-Eku, Akanran in Ona Ara LGA, Oyo State – the plant can be replicated nationwide.* 

# **Market Growth**

The Nigeria SWM sector is an evolving market as presently only 20-30% of the solid waste is presently under consideration of collection and less than 1% is being recycled, reused and/or converted. The growth of the SWM market is indexed against the population



growth factor. Therefore, it is reasonable to claim that the SWM sector is growing at a growth rate of 2.6% according to the 2019 population figures.

As stated by Trading Economics - in the long-term, the Nigeria GDP Annual Growth Rate is projected to trend around 2.80% in 2020. According to the econometric models of <u>www.tradingeconomics.com</u>, the economy of Nigeria grew 1.94 percent year-on-year in the second quarter of 2019, easing from an upwardly revised 2.10 percent expansion in the prior period. In this respect, WCP is not only pioneering a particular niche of creating employment in the SWM sector, but is capitalizing on the strength of the current low economic growth to provide a mix of power development and agricultural input for the economic development of the Nigerian State.

In the same vein, the demand for infrastructure projects is unprecedented in Nigeria today. The Nigerian economy shrank 0.5% year-on-year in 1Q-2017, following an upward revised 1.7% contraction in the previous period. It is the smallest drop in GDP in five quarters as the oil sector continued to decline but at a slower pace. The GDP Annual Growth Rate in Nigeria averaged 3.95% from 1982 until 2017, reaching an all-time high of 19.17% in 4Q-2004 and a record low of -7.81% in 4Q-1983<sup>6</sup>. The World Bank noted that since 2015, economic growth remains muted. Growth averaged 1.9% in 2018 and remained stable at 2% in the first half of 2019. Domestic demand remains constrained by stagnating private consumption in the context of high inflation (11% in the first half of 2019). On the production side, growth in



2019 was primarily driven by services, particularly telecoms. Agricultural growth remains below potential due to continued insurgency in the Northeast and ongoing farmerherdsmen conflicts. Industrial performance is mixed. Oil GDP

<sup>6</sup> <u>http://tradingeconomics.com/nigeria/gdp-growth-annual</u> Nigeria GDP Annual Growth rate

Prepared by Georges Elens/ Elens Commercial Consultancy

growth is stable, while manufacturing production is expected to slow down in 2019 due to a weaker power sector performance. Food and drink output are expected to increase, likely in response to import restrictions. Construction continues to perform positively, supported by ongoing megaprojects, higher public investment in the first half of the year, and import restrictions.

# **Relevant Market Size**

WCP initiated its disruptive financial and transportation technology model – "Trojan 1" as a solution to the challenges faced in the waste collection sub-sector while introducing the waste utilization models as a solution to effective waste disposal in the SWM market. The advantage of engaging waste utilization models of W2E and W2C supports the *reduce – recycle – reuse* approach of SWM in Nigeria. WCP consequently presents the solutions nationwide – as the waste collection sector has a potential of generating an investment of \$1.745billion (N628.2trillion) immediately with a potential revenue of \$2.639billion (N950.13trillion) revenue per annum.

- In the waste collection segment, WCP estimates a potential \$0.44 billion(N0.158trillion) revenue per annum, and
- In the waste utilization segment, WCP estimates a potential revenue of \$0.879 billion(N0.316trillion) per year.

Presently, WCP's current estimated market share is 0.00% and we plan to build it to 1% by FY5 forecast.

# 5. Marketing Strategy

In this section:

- Marketing & Promotional Plan
- Price Strategy

- Sales Strategy
- SWOT Analysis

# **Marketing and Promotional Plan**

WCP proffers to create a brand that is synonymous with quality and value addition. The delivery of an efficient waste collection program developed on a sustainable approach shall provide the basis for WCP's engagement with its clients. WCP builds a reputation to engage waste conversion facilities with functionalities of unmatched proportion. It starts with our 100% commitment to customer satisfaction and fulfilling customer's demands. Our commitment to quality and efficient service delivery includes safety and prompt response to client needs. Crucially, the aspect of WCP's development which will differentiate us from other waste management companies is our focus on sustainable development, zero or low maintenance costs, preserving the environment and maintaining the most advanced technological innovations for our business. We cater to our clients' desire to create sustainable development, and the need to deliver value at the most optimal cost - an essential factor of our work cycle; WCP provides a dependable system to achieve such objective.

WCP shall undertake the use of key performance indicators (KPI) to manage its service delivery as waste service fee payments; waste collection, transportation, disposal; and waste utilization are monitored for zero down-time. In this respect, WCP shall monitor the following KPIs continuously.

S/No	🗸 Goals 🔤	Performance Indicator Framework (PIF) 🛛 🔽	Framework Data Analysis 🛛 🚽 🚽
			i) Residential waste producers' economic status profile in Zones, LGA and Districts.
			ii) Residents' geographic location of first call logs.
1	Universal Access and Coverage	A. Coverage: % of households and establishments covered by municipal door-to-door SWM services	<li>iii) First call log distribution of residents on the different cell site district-wide.</li>
			iv) Residents geographic location and frequency of
			waste service charge payment.
		A. Collection efficiency: % collection of solid waste	i) Frequency of equipment breakdown for waste
		generated in the city	collectors and PSP.
2	Service Levels and Qualit	B. Segregation: % of waste at disposal/treatment point segregated.	<li>ii) Frequency of equipment breakdown of waste sorting at MRF plant.</li>
		C. Recycling: % of total solid waste recycled or	iii) Frequency of equipment breakdown at waste
		processed	recycling and conversion plant.
3	Financial Viability	A. Cost Recovery: % recovery of O&M costs for SWM through Urban Local Body (ULB) levy, taxes and charges	<ol> <li>Comparison of residential population in districts against waste collection service charge payment.</li> </ol>

Solid Waste Management (SWM): Key Performance Indicator

# **Sales Strategy**

WCP understands the precarious situation of waste collection in the LGA/LCDA and districts nation-wide. The collection of waste in the inner-city districts are saddled with challenges from the collection of waste service charge and transportation of waste as the zones are remotely motor-able. Therefore, WCP's sales strategy is to enter into agreement with government to undertake waste collection in the inner-city districts where PSP and waste collectors refuse to undertake. WCP will deploy its disruptive financial and transportation technology to enforce the collection of waste service charge, from which the Waste Tariff Fund(WTF) is created and waste transit matrix from which waste-hailing(w-hailing) is created to efficiently move waste from the inner-city households to transfer stations located in the LGA/LCDA, and to the IWMF. WCP shall aggregate waste generators in households with waste collectors in order to efficiently collect waste while regulators shall monitor the waste matrix effectively from cradle to grave. It is noteworthy that in each district 65-80% of the State is in districts which are inaccessible. So, WCP's strategy is to make all district accessible and viable with the engagement of its WTF and w-hailing technology -Trojan 1.

In the same vein, WCP shall undertake the acquisition of waste dumpsites at which waste is effectively converted to electricity and compost. At such locations, existing waste are reclaimed as dumpsite remediation are undertaken to transform the in-situ wastes into refuse derived fuel(RDF) for the generation of power through the incineration technology. Depending on the quantum of waste transported to and available at the dumpsite, WCP shall generate 3-20MW power and 140tpd of high grade compost. The strategy of WCP to engage the waste to energy technology in the conversion of waste is predicated on the high power consumption to generation gap in Nigeria. As such, WCP shall enter into agreement with off-takers, in the form of power purchase agreement (PPA), such that establishments and institutions of higher learning within a 15km radius of the power plant are guaranteed power supply.

WCP's compost is a valuable soil amendment that improves many soil properties, such as porosity, structural and thermal stability, water retention, resistance to wind and water erosion, and tillage. The compost also decreases soil crusting, regulates storage and release of nutrients, enhances the development of beneficial microorganisms, builds up plant resistance to parasites and disease, and promotes faster root development. Plants and crops treated properly with compost may produce higher yields and have less weed growth. Chemical fertilizers do not offer this value. Given the foregoing, we note that the production of high grade compost is in high demand for robust agricultural development with particular target for in-country and international sales. For the sales of compost, WCP shall undertake major distribution approach in which supplies shall be made based on a bank guaranteed agreement. To start the compost sales arrangement, WCP shall partner with Active Commodities Marketing Enterprises Ltd. (ACME) to provide sales outlets at potential markets for the brand. Also, WCP shall provide sales outlets through the Federal Ministry of

Agriculture – Federal Fertilizer Scheme, the National Organic Agriculture Practitioners Association of Nigeria, and the Nigerian Organic Agriculture Network (NOAN). Furthermore, WCP shall engage its MRF to undertake waste sorting to plastics, paper, tin/metal and glass for sales to preferred users.



# **Pricing Strategy**

WCP's pricing of the residential waste service charge is at the top of what the market will bear. We are competing in a market with recalcitrant waste generators who ordinarily are reluctant to pay for waste collections but are the largest waste generators. We therefore, must compelled the waste generators to pay the waste service charge as we find a permanent solution to the vagaries of environmental pollution. Our prices are competitive as we present a high quality service, consistent and performance indexed service delivery and management. In which case, we have priced the service charge at N10/resident/day or N300/resident/month. In the same light, we have priced our power tariff at N65/kwh while Nouveau Green Fertilizer - our organic fertilizer brand is priced at \$250/ton an equivalent of N4500/50kg bag.

# **SWOT** Analysis

WCP will take advantage of the opportunities provided by the macro-economic indices of the markets it engages and leverage on its strength. Nevertheless, to shore-up the weaknesses observed within the system, we are in the financial market to source \$151.574million (N143.0billion) for our project finance program. The funds will enable WCP to finance its technology acquisition and keep abreast of its state-of-the-art facilities. To manage the threats identified in the industry, we have engaged a backward integration of the supply chain for waste feedstock as collections from LGA designated transfer station are undertaken by WCP fleet of trucks which would undertake waste collection from inner-city house-holds and commercial enterprises. In addition, we are setting up an Emergency Response and Support System (ERSS) to assists the PSPs and waste managers in delivering waste collected and in distress to our IWMF.

WCP's approach to value added project delivery will propel its market share. So emerging local competitors will see WCP as the company to beat, thereby providing us with a comparative advantage. In advertently, the political instability noted in the region is being

mitigated by inviting political advantageous persons to hold appointments (non-executive directorship) in our company for a four (4) year duration; thereby providing us a clear access and voice in the ruling party and/or government. With such arrangement, we are able to mitigate the issue of political risk and corruption as we continue to position WCP as a sustainable entity engaging international best practices in our service delivery.

Strengths	Weaknesses
<ul> <li>A knowledgeable and friendly staff</li> <li>State-of-the-art disruptive financial and transportation technology infrastructure</li> <li>A clear vision of the market</li> <li>Growing reputation across Nigeria and Sub-Sahara</li> </ul>	<ul> <li>Access to adequate and reliable pool of funds to finance projects</li> <li>A heavy dependence on quickly changing technology</li> <li>Costs associated with keeping state-of-the art facilities to engage in the services we offer</li> </ul>
Opportunities	Threats
<ul> <li>A growing population who need basic and fundamental infrastructure for waste management to eliminate challenges from environmental pollution and health hazards.</li> <li>The growing social bonds fostered by a new technology-based environment.</li> </ul>	<ul> <li>Rapidly increasing costs of waste collection and transportation equipment.</li> <li>Lack of good and dependable workmen to service our labour needs</li> <li>Emerging local competitors</li> <li>Political instability in the region</li> <li>Corruption amongst the competition could hamper the chances of winning outer-city and GRA location contracts.</li> </ul>

To facilitate the anticipated work program, we are forming synergies with Universities and Polytechnics across the country to recruit trainable entry level professionals needed for our operations and facilities while we plan to undertake talent searches world-wide to locate Nigerians, Africans and other expatriate willing to engage and work with us.

# 6. Competitor Analysis

In this section:

- Overview
- Why is WCP Better

# Overview

The SWM space is beclouded by a few micro, small and medium enterprises (MSME) who attempt to place their footprint in the sand of time. Many of whom are involved in recycling in Lagos, Ogun and Oyo States especially. The MSME, it seems, are overwhelmed with the share size of the industry needs and as such create a niche in providing recycling activities in plastics (PET), paper, and metals for which are delivered to processors who pelletize the waste materials. The companies utilize an incentive based outsourcing approach to attract youths and women to pick, collect and deliver soft and hard MSW content to neighbourhood collection centres where they are paid in points with which they can claim gifts from their supply shops, but seldom cash. A school, in Lagos, encourages school children to pay school fees with plastic PET bottles. While maybe about ten(10)) of such companies exists mainly in Lagos, Oyo and Kaduna, we would only list three(3) herein.

**Competitor Profile** 

Other than the companies involved in recycling, one or two plants in Lagos and Asaba have material recovery facilities, for which we shall highlight one of them. The integrated waste management facility at Asaba includes a composting department, a recycling department and a (non-WTE) incineration department. At the plant, trucks carrying waste are weighed as they come into the facility and from the weigh bridge, they move to the relevant reception bay – there are separate ones for household and clinical wastes – to tip their load, and are then weighed again on the way out<sup>7</sup>.

The issues of waste utilization remain a mired in the Nigerian SWM space. The A few companies situated at Ikorodu, Akure, Ado-Ekiti, Osogbo, and Kaduna processes waste to organic fertilizer using the windrow technology. Other than the plant at Ikorodu and probably Akure which attempts to stay in business, the other plants are dysfunctional as they are project initiated by the Federal Government, handed to the State Government and for which the operator do not have an ownership mentality as they treat the plants as personal cash cows which are feed by the docile government largess. The Ikorodu plant (Ogogodiyan Compost) is a private sector initiative supported by the United Nations Framework Convention on Climate Change (UNFCCC) while the Akure plant (Sunshine Integrated Waste Recycling Complex) is an initiative of the Ondo State Government which is under a concession agreement. There exists twenty-six (26) plastic waste recycling plants located in 26 cities across Nigeria, whose contracts the Federal Government awarded in 2009 to eradicate the problem of plastic waste, are at different stages of deterioration and are all in sorry states as they are grossly abused.

<sup>&</sup>lt;sup>7</sup> <u>Benneth Obinna Obasiohia</u> | December 19, 2019, Waste Management Progress in Nigeria's Delta State

# **Competitor Profile**



WestAfricaENRG (WAE) prides its-self as the largest private Landfill Diversion company in West Africa and its mission is to achieve zero waste to landfills in the communities they live and work in, WestAfricaENRG transforming cities and providing innovative

solutions. WestAfricaENRG is dedicated to developing and embedding the sustainability of West African economies. WestAfricaENRG are the owner-operator of Nigeria's first Materials Recovery Facility (MRF) situated in Alimosho, Lagos where they recover the valuable fraction from the Municipal Solid Waste, and put that back directly in to the production economy as feedstock for plastic, metal and paper recycling.

Through the use of patent protected technology, WAE is able to convert the non-recyclable solid waste to electricity for use in critical services, such as government secretariat buildings, hospitals, school and rural electrification. The key focus of WAE is diverting waste from landfills, reducing greenhouse gas emission, and serving the communities within which they operate(see http://www.westafricaenrg.com/en/).



Visionscape Sanitation Solutions is the waste management company of the Visionscape Group, focused on bridging infrastructural gaps across the sector and diversifying opportunities across the

With the utilisation proven attributes, Visionscape waste management value chain. Sanitation Solutions addresses the waste management needs of large cities, specialising in providing turnkey innovative environmental solutions in the areas of waste management, water and wastewater treatment, sanitation, resource recovery, recycling, green energy, and infrastructure development for diverse industries across private and public sectors.

In Africa, waste generation has been on a steady increase over the last decade, coupled with the need for energy. With waste as the perfect catalyst to grow the waste-to-energy industry across the continent, Visionscape Sanitation Solutions confirms its interest to take a bold step towards advancing Africa's waste and energy sectors - offering a unique proposition to capitalise and maximise on the green economy, with sustainable long-term integrated waste management and waste-to-wealth solutions. From the development of engineered landfills to waste-to-energy plants, Visionscape's highly experienced and globally diverse team will provide waste management infrastructural development engineered solutions, to implement resource management systems, and increase the share and opportunities for green energy in the global energy mix.

Long-standing partnerships with our sister and affiliated companies, partners, and vendors allow Visionscape Sanitation Solutions to tap into a global hub of cutting-edge technology and innovation, knowledge transfer, design and project management, enabling the company to integrate tailored innovative solutions and systems across every phase of the waste management and resource recovery value chain(see www.visionscape.group/what-wedo/visionscape-sanitation-solutions/).



**ZL Global Alliance Limited** (ZLGA) prides itself as one of Nigeria's leading providers of integrated environment solutions. ZLGA collects, transports, treat, recycle, recover and dispose of residential, commercial, and industrial waste. Its services are tailored to meet various waste management strategies, and they are passionate about the safe and responsible environment. ZLGA's services are unique and efficient. employs practical methods needed to carry out waste

management operations.

ZLGA states that it sets tasks and responsibilities to effectively focus all relevant clients, and employees on appropriate handling, evacuation, collection, transportation, recovery, disposal, monitoring and reporting of waste. The company, in the course of managing waste has the responsibility of ensuring that all relevant procedures and policies are complied with. ZLGA makes claim to have well trained personnel who are conversant with ISO 14001 requirements. They have the ability to evaluate environmental requirements and advise on the best practice. ZLGA is also versed with the statutory and regulatory requirements in Nigeria and endeavours to do same in other countries they may operate. (see www.zlglobalalliance.com/)



**EarthCare Nigeria Limited** makes claim to be the largest commercial producer of organic fertilizer in West Africa. Using a mix of municipal solid waste as raw materials and applying a unique United States remedial technology which conforms to Clean

Development Mechanism (CDM), Earthcare's plant situated at Ikorodu, Lagos - at full operation - has the capacity to produce 200,000 metric tons of Grade "A" organic fertilizer per annum under the brand name Compost<sup>PLUS</sup>.

EarthCare has successfully developed the most advanced composting technology known in the world today. EarthCare is a turn-key composting company which has a proprietary specialized windrow composter and unique enzyme and microbial infusion blend specifically formulated to work together to accelerate the composting process to provide a superior end product. The technology developed by EarthCare is an environmentally acceptable method of handling virtually any biodegradable material in a waste stream. The method works for any organic source such as farm and animal waste as well as brush, lawn, and leaf clippings. Concerned with the problems facing individual communities and businesses, Earthcare makes certain that each system is specifically designed to meet the needs of their particular waste management problem. The unique system is designed to remove the waste problem without offensive odours. The composting supports all recycling efforts by turning municipal, industrial, and animal waste into usable product reducing the amount of waste being deposited into landfills by approximately 85% (the remaining 15% being composed of Glass, plastic, and metal). EarthCare's organic compost is environmentally safe and meets or exceeds any existing standard required by the EPA as well as all Federal, State, County, or City agencies. It may be used without restriction, including use of food crops. (see www.earthcarecompostplus.com/)



Wecyclers offers convenient household recycling **Necolers** service using a fleet of low-cost cargo bikes. Wecycler is powering social change using the environment by allowing people in low-income

communities to capture value from their waste. Wecycler aims to build a low-cost waste collection infrastructure while raising general awareness on the importance of recycling for environmental sustainability and social welfare gained from reduction in pollution and diseases like malaria.

We cycler offers dedicated recycling services to corporate clients including commercial firms, financial institutions, religious organizations, and educational institutions. Wecycler's team works with organizations to develop a customized and cost-effective recycling plan that meets the organization's needs. At Wecyclers, individuals and households can sign up for a free program and have their homes added to one of the household collection routes. Soon after the individual provide its contact information, they will be contacted by Wecycler's Customer Engagement team with more details.



Rehoboth Waste Management Services (RWMS) is a social venture oriented organisation focused on recycling as means of restoring a friendlier and sustaining environment. Rehoboth is a waste management services provider which was founded in June 2012. RWMS started by introducing plastic waste bags to residential clients and waste bins for industrial clients in Osun state to collect wastes. RWMS started operations with the collection of PET plastics, and had to focus their strength on other recyclables when their efforts to

acquire a baling machine didn't work out. RWMS currently collects white paper, office paper, brown carton, chipboard paper and coloured paper. They collect most of their inputs from industrial partners such as paper printing press, banks, schools and supermarkets and very few from households. Within the time they started operation, they have been able to cover a considerable number of business-active local governments in Osun state such as Gbongan, Osogbo, Ilesha and Ile-Ife.



RecyclePoints makes claim to be Nigeria's foremost waste recycling and social benefit venture that motivate post-consumers to recycle by creating value from their everyday waste.

RecyclePoints have developed a POINT-BASED incentive model with which they collect Pure Water Sachets (PWS), PET Plastic Bottles (PET), Used Beverage Cans (UBC), Glass bottles (GBS), Old Newspapers (ONP) and Brown Corrugated Cartons (BCC) from registered postconsumers and in turn reward them with POINTS, which when accrued can be used to redeem household items and cash. Points are allocated based on a Points Earning Chart where quantity of items are equated to the amount of points earned.

RecyclePoints harvests recyclables directly from post-consumers thus generates very neat materials that have not been co-mingled with dirt. This adds huge value in the recycling

process as it reduces the cost of washing and assures better quality material free from contaminants. The collected recyclables are further processed at a Collection and Sorting HUBs (CoSoHUB) and thereafter sold to manufacturing/recycling plants who use the items as raw materials for the production of a wide range of items, including but not limited to polyester fiber, carpets, hangers, pegs, aluminium ingots, craft papers for making carton. (see <a href="http://www.recyclepoints.com/">http://www.recyclepoints.com/</a>)

# So Why is WCP Better

WCP is developed as an end-to-end waste management service provider offering a top-tobottom waste conversion program in the Nigerian SWM sector. WCP is positioned to outperform competitors as it creates an efficient waste collection service which covers all wards and zones of the LGA. With WCP - no ward is non-viable, as waste is collected city-wide, through all towns and all over the nation. WCP has developed a disruptive innovative technology to effectively collect waste door-to-door and utilize waste efficiently at its W2E plant. WCP creates value and provides a system that is better than the rest, for the following reasons:

- WCP offer a high level of quality collection service in our waste management approach

   no household is left. WCP engages a quality control and assurance policy which presents a structured program that guarantees that the wards and zones are mapped on our integrated household and building footprint map. WCP's quality assurance program is based on a comprehensive HSES approach, which guides all facets of our collection and delivery process.
- WCP engages a holistic point of view in waste collection as collectors are managed from cradle to grave with our disruptive w-hailing transportation technology. We monitor and manage our waste collectors as we have dedicated route assignment and failing which collectors are disrupted if they via outside their zones. Our operators are assessed based on the unique challenges to overcome in order to make a success of the collection approach, and performance targets are established to confirm our achievements.
- WCP's strength is in its ability to disruptively undertake the collection of waste service charge from all waste generators. While waste generators are provided the options to make payments of the waste service charge voluntarily, the waste generators are left with no other choice as the service charge can and will be enforced via a telecoms platform. With an integrated collection and utilization approach, we are able to deliver a sustainable environment at a practical cost. We engage locally endured labour with exposure to international best practice. We continuously train and retrain our staff to provide a comparative advantage in the execution of our tasks.

- WCP operates MRF, W2E and W2C plants with internationally acclaimed quality certification. WCP operates at the cutting edge of engineering development as it implements top of the class technology at all its plants of engagement. The plants deployed by WCP operates from the modular perspective of plug and play. As such, the equipment engaged are easily retrofit and replaced when the need arises. WCP engages technology which provides zero waste at landfill.
- WCP's marketing and advertising costs are kept low due to simple marketing strategies. Our biggest selling point is our end-to-end service provision in the ward and zone we are engaged.
- WCP has developed a structured business solution which will be replicated in several states and on a continuous basis everywhere we prospect for work.
- WCP's competitive advantage is also in its ability to present its development achievements in each sector to the media community, thereby presenting itself as an industry leader.



# 7. **Operational Plan**

In this section:

- Operations
- Policies & Procedures

# **Operations**

WCP is arranged into global and local management teams. The global team is responsible for providing operational structure - it's governed by a board which serves in the holding company. The local team provides operations management for the tasks and activities of the company which consists of two entities – WCP Capital and the Waste Converters Company – they are governed by separate boards. The local management team will handle all day to day operations, and shall be fully supported by a dedicated team of personnel. The key positions of the management team are provided in section 8 Management and Organization. The daily operations shall be undertaken by the operations staff who shall be arranged according to the following structure;

Premises and Equipment

- a) Waste Service Fee Collection and Enforcement;
- b) Waste Collection and Transportation
- c) Waste Utilization and Dumpsite Remediation

The implementation structure of WCP is enabled through the engagement of software application technology which supports the effective implementation of our waste management solution. As such, WCP engages the internet of things(IoT), Radio Frequency Identification (RFID), and other complementary tools and resources to seamlessly implement its operation utilizing a constellation of disruptive technologies. WCP engages the Waste2Green Management System (W2G-MS) to effectively handle the waste service fee collection and enforcement as well as the waste collection and transportation seamlessly, while engaging the pyrolysis/incineration technology for W2E and rapid thermophilic digestor technology for its W2C.



Prepared by Georges Elens/ Elens Commercial Consultancy



WCP Capital is a financial service provider which engages internet banking structures and value added service (VAS) protocol to administer a surcharge on telecommunication subscribers in the Nigerian market space. WCP's operations is organized to manage the waste service fee

collection and waste collection and transportation matrix.

WCP Capital engages the Waste2Green artificial intelligence and cloud based solution for the operations, optimization, monitoring and reporting along all process chains and phases.

# Waste Service Fee Collection and Enforcement

# Throw As You Pay (TAYP)/Pay As You Generate (PAYG) SMART Model

**Throw as you pay** (TAYP) - trash metering, user pricing, variable rate pricing, or user-pay - is a usage-pricing model for disposing of municipal solid waste. Residential users **are** charged a flat rate based on a state-wide service charge, while commercial and industrial users are charged based on the quantum of waste they present for collection to the municipality or local authority. Nevertheless, and in the instance, as presently exist,



where waste generators are reluctant to pay the waste service charge on a designated monthly basis, the **pay as you generate** approach is engage. **Pay as you generate** (PAYG) is a daily enforcement of waste service charge to generators telecommunication subscription account via a Sustainability Management System(SMS)-based wallet service approach. The generators are charged a flat fee per day. The charges generated from the TAYP/PAYG model are block-chain wallet accounts which are agglomerated daily into bank accounts managed through our Internet Banking Service Provider (IBSP) application which is applied via telecommunication service providers' platform from which the Waste Tariff Fund(WTF) is created.

The WTF engages a full-unit pricing as users pay for all the garbage they want collected in advance by paying the flat service fee which attracts the collection of a maximum number of waste bags or containers from designated collection centres. The need for additional waste bags or containers are available for purchase, should the user exceed the permitted amount. For such additional service, a surcharge to the wallet accounts at the collection of extra waste bags are provided for the additional waste collection. The variable-rate pricing is undertaken for commercial and industrial users who can choose to rent a container of varying sizes (some programs offer up to five), with the price corresponding to the amount of waste generated. Although the TAYP/PAYG is based on the traditional approach of engaging a flat-rate system to disposing of municipal solid waste, a modification and variable approach is introduced for instances of additional waste generation as a standard quantum of waste generation is based on a standard capacity threshold. While there is no incentive to reduce waste produced, the approach is based on two guiding principles of environmental policy: the polluter pays

principle and the shared responsibility concept.<sup>8</sup> The rationale for TAYP/PAYG has a compounding influence on the economics, environment and social attributes of the region. In this respect, waste collections costs are distributed more fairly among the population, and in proportion to the amount of waste each user generates.<sup>9</sup> Free riders are no longer able to have their behaviour subsidized, and TAYP/PAYG will promote community sustainability, as lower-income families who tend to produce less waste, thus pay lower waste collection fees.

# Waste Collection and Transportation

# Waste2Green Management System (W2G-MS)



W2G-MS is a powerful waste collection (fees and service) cloud based, artificial intelligence management software serving for more than 40 cities across Europe and South America that addresses all the phases of the urban cleanness processes. W2G-MS is capable of interacting with a wide variety of IoT/sensors and waste collection methodologies so the more efficient

working methods can be implemented and adapted to each city's specific needs.

# The Waste Collection Core



Designed to be used either by Municipalities or Waste Collection Service companies, W2G-MS provides the following

- Operations Planning and Management
- Interaction with Vehicles, Collection Points,

other Equipment & Final Waste Destinations

- Interface with Producers, Citizens & Regulators
- Data-Collection, Monitoring & Analytics
- Patterns Identification & Predictions
- Human Resources Management
- Assets Management
- Tracking, Location, Geo-Fencing
- Intelligent "Routes Planning"
- PAYG/TAYP/SMART Models Ready
- Reporting & KPI's Monitoring



<sup>&</sup>lt;sup>8</sup> Batllevell, Marta and Kenneth Hanf. "The fairness of PAYT systems: Some guidelines for decision-makers." Waste Management 28 (2008): 2793-2800.

<sup>&</sup>lt;sup>9</sup> Kelleher, Maria, et al. "Taking out the Trash: How to Allocate the Costs Fairly." C.D. Howe Institute Commentary 213 (2005): 1-22.

# **End-to-End Operations Control**



The W2G-MS Software is designed to interact with all the operational elements part of the waste collection process. From human resources scheduling (drivers and auxiliary personnel), collection assets and elements (such as collection and cleaning vehicles, containers and bins for different waste



types, plastic bags, etc.), up to the waste deposits, final waste destinations and citizens.

# Simple and effective

Intelligent Planning of Collection Circuits

Operators can plan the collection circuits based on real-time and historical data pattern



behaviour learning. For each collection circuit plan, Operator can work with several variables such as:

- Date/Hour for the collection
- Area
- Types of waste to consider
- Containers to be considered by their filling level %
  Vehicles to use
- Operation Center those vehicles belong to
- Preferred flow
- Waste possible compression rates

W2G-MS will generate the collecting circuit, indicating the Optimal routes, optimal Number of vehicles needed, number of laps and other relevant variables.

# Your Decision, Assisted

# Containers Volume Levels and Predictive Planning

Real time information about the current fill level of select containers in a certain zone.

W2G-MS can plan future collections shifts based on the learnings of historical data.

Example: Plan a shift to collect all the containers that will be above 30% load in the next 12 hours.



Prepared by Georges Elens/ Elens Commercial Consultancy

# Your Assets, Fully Catalogued



Collection Points can be uploaded on the system, including all the details of the installation point (type of containers, model, types of waste, etc.)

Information can be uploaded either manually or automatically via the W2G-MS RFID Handheld Reader.

# **Business Oriented Metrics**



W2G-MS provides the most commonly used performance KPI's for Urban Waste Collection, automatically updated.

Specific custom made KPI's can be created:

- Collected Tons (Global, per Waste type, etc.)
- Level of Incidents
- Cost of Collection per collected Ton or per Nu
- Efficiency KPI's
- Co2 Level Emissions

# 1

# **Connected Vehicles**



- Tracking, Location, Geo-Fencing. - Vehicle Consoles with "Routes-to-Follow", "Work-orders" and other info. - Automatic reading of Collected Containers.

- Cargo Levels Monitoring (volume, weight).

Fuel Levels Monitoring.

- Direct input to the platform on the

most common occurrences

(damaged container, container missing, road-block, etc.).



# **Connected Collection Points**



- Collection Points Geo-Referencing, Geo-Fencing
- Semi-Automated Containers Inventory
- Filling Levels Reading
- Temperature Monitoring
- "Conditioned Access Container Zones" implementation

# **Waste Transfer Station**

At each LGA, we have delineated zones along the wards structure and plan for a dynamic transfer station arrangement for the inner-city areas which allows for the consolidation of waste collection. From the transfer stations, we manage waste transportation to the recovery facility. For the inner city households, waste tricycles collect garbage from door-to-door. The waste collected are quickly delivered to stationary compactors at the transfer stations where hook lift trucks move the baled waste to the recovery facility. WCP follows the rule that "No waste is left at the transfer stations for 24hours". At the outer-city zones, waste compactors undertake door-to-door collection of wastes and move the compacted waste to the recovery facility when the trucks are full.

The door-to-door collection of waste at inner-city zones shall be undertaken during the day from 8:00 to 17:00 while the transportation of waste to the recovery facility will be undertaken from 12:00 to 6;00. The waste collection in outer-city zones shall be undertaken door-to-door during the day from 8:00 to 17:00. No door-to-door waste collection shall be done after 17:00 hours.



#### **Transfer Station Arrangement**

The waste transfer stations (WTS) are integral parts of our waste management architecture as garbage collected by the tricycles are consolidated at the WTS. The waste tricycles off-load



the collected wastes at the second-floor levels where the garbage is pre-sorted and loaded into the compactor which consolidates the waste to be taken by hook-lift trucks to the conversion plants. The WTS is process designed to recover plastic bottles, paper and glass from the waste stream while serving as a collection centre for Pet plastics, HDPE containers and tyres which would be reused in a pyrolysis plant which would produce LPFO to power a 200kva generating set for the station.

The composition of the WTS is all inclusive. The WTS is designed to house the workers' lounge, storage racks and sick bay/health clinic on the ground floor, while it situates the business office of WCP Capital on its first floor. The office which is the operations and control centre for the engagement of our dynamic, disruptive financial and transportation technology, will be exclusive and out-of-bounds to visitors, nevertheless the station would provide a Customer Service Centre through which complaints are regularly attended to. The second floor of the WTS shall be the discharge and pre-sorting location of the station. The access point of the waste tricycles to the floor shall be the spiral ramp which are designed to seamlessly give access to the tricycles to quickly discharge its waste and return to collection of waste all day.



AWC is a W2E company which is developing an Independent Power Plant (IPP) and W2C – a compost (organic fertilizer) plant at Ibadan, Oyo State. AWC will generate 20MW green power and 140tpd of organic fertilizer from MSW. The AWC plant is a purpose-driven development to undertake the utilization of 2200tpd of MSW collected in the Ibadan Municipal Area Oyo State. AWC plans to construct an integrated waste management

facility(IWMF) at Akanran in Ona Ara LGA, Ibadan. The land on which AWC shall construct the IWMF covers about 9.5 hectares and is situated along Olorunsogo – Akanran road in Ona Ara

LGA, Ibadan. The site abuts the road which transverse through four(4) LGA – Egbeda, Oluyole, Ona Ara and Ibadan South East. The road travels through farm settlements to the east and passes through the centre of Ibadan city to the west. The land use around the project site consists mainly of a mixed use of commercial and residential properties. The existing waste dump site and adjourning land are being converted to the location of the Akanran Integrated Waste Management Facility(Akanran-IWMF).





IWC is a W2E company which is developing an Independent Power Plant (IPP) and W2C – a compost (organic fertilizer) plant at Igando, Lagos State. IWC will generate between 20MW green power and 140tpd of organic fertilizer from MSW. The IWC plant is a purposedriven development to undertake the utilization of 2400tpd of MSW collected from the Lagos West District. The land on which IWC shall construct an integrated waste management facility (IWMF) covers

about 7.2 hectares and is situated on a controlled engineering landfill within longitude 3°26E to 3°25E and latitude 6°56N to 6°57N in Igando, Alimosho LGA, of Lagos State. The site is surrounded by residential areas, an abattoir and a small fast shrinking Oba stream which is

located about 2.5km east of the dumpsite. The land use around the project site consists mainly of a mixed use of commercial and residential properties. The existing waste dump site and adjourning land are being converted to the location of the integrated waste management facility. The Igando – Isehri Olofin Road transverses through the site location and continues to the LASU – Iba Road. The Lagos State University(LASU) is 13.4km from the site.





OWC is a W2E company which is developing an Independent Power Plant (IPP) and W2C – a compost (organic fertilizer) plant at Osogbo – Iwo Road, Egbedore LGA, Osun State. OWC will generate between 6MW green power and 140tpd of organic fertilizer from MSW. The OWC plant is a purpose-driven development to undertake the

utilization of 1000tpd of MSW collected from the Osun Central District. The land on

which OWC shall construct an integrated waste management facility (IWMF) covers about 9.94 hectares at the Onibueja dumpsite. The Onibueja open dump waste disposal site lies at Longitude 7.793001 and Latitude 4.491083. The topographic evaluation around the dumpsite generally slopes gently from the north western part towards south eastern part. The land use around the project site consists mainly of residential, commercial properties and farms. The existing waste dump site and adjourning land are being converted to the location of the integrated waste management facility. The Onibueja waste dumpsite is situated on the Osogbo – Iwo Road which is a short distance of 2km from the Ring Road. The Osun State University (Uniosun) is 16.7km from the site.





ILWC is a W2E company which is developing an Independent Power Plant (IPP) and W2C – a compost (organic fertilizer) plant at Ado Ekiti – Iroko Road, Ekiti State. ILWC will generate between 6MW green power and 140tpd of organic fertilizer from MSW. The ILWC plant is a purpose-driven development to undertake the utilization of 1000tpd of MSW collected from the Ekiti Central District. The land on which ILWC shall construct an integrated waste management

facility (IWMF) covers about 24.7 hectares at the Ilokun dumpsite. The Ilokun open dump waste disposal site lies between latitudes 850200 to 850800 and Longitude 749300 and 749800. The topographic evaluation around the dumpsite ranges from 337.4m to 405.2m above mean sea level and generally slopes gently from the north western part towards south eastern part. The land use around the project site consists mainly of a mixed use of commercial, residential properties and farms. The existing waste dump site and adjourning land are being converted to the location of the integrated waste management facility. The Ado-Ekiti – Iworoko Road transverses the site location and continues through the Ekiti State University(EKSU) to Iworoko. The EKSU is 5.3km from the site.



Our strategy mandates a holistic development approach for which the establishment of an IWMF is critical. The IWMF features auto-sorting, and waste recycling modules which would have the capacity to process up-to 1500tons/day. The optimization achievable from sensor based auto-sorting facilities presents an advantage to efficiently sort municipal solid waste (MSW) for processing into organic fertilizer or power as the case is. To achieve our goals for the IWMF, we shall engage the Plazma MRF collection and auto- sorting technology for our MRF, Biomax Green rapid thermophilic digestor technology for our W2C, Beston waste pyrolysis technology for the W2E level 1 and wasteWOIMA technology for our W2E level 2.



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**PLAZMA MAKINE MÜH.** is a Turkish based manufacturer of automatic MRF plant which includes machinery production and assemblage. Each Sorting line is designed to process 100.000 tons of MSW per year with two shifts. The MRF facility consists of two alongside sorting lines for which when engaging a third shift it has an annual capacity of 300.000 tons/year.



The MRF at WCP shall process recyclable materials for use

in its compost and power plants. The MRF takes in a broad stream of solid waste and separates out recyclable materials through manual and mechanical sorting. The recyclables are processed mainly for its use as plastics and tyres are utilized by its pyrolysis plant to produce heavy fuel oil for use in its intermediate generating plant which powers the compost plant, while the sub-gas produced is reused in the pyrolysis.

The MRF is semi-automated and uses ultraviolet optical scanners and magnet to simultaneously sort paper, cardboard, aluminum, plastics, glass and metals while workers augment the sorting of items by hand.

Our organic fertilizer partner, BIOMAX TECHNOLOGIES (now Biomax Green) is a Singapore-based green technology company that specializes in solutions for agricultural and environmental industries. A firm believer and an advocate in environmental sustainability, Biomax stand tall among rivals as а hallmark Asian of environmental excellence and a role



Separation of Municipal Solid Waste prior to treating in Biomax Digestor



model for sustainable development. The most notable of Biomax technologies is the patented Rapid Thermophilic Digestion Technology (RTDT). The technology allows its users to convert organic wastes into a pathogen-free and odorless premium-grade bioactive organic fertilizer in twenty-four (24) hours. The Biomax RTDT is designed to provide a sustainable solution to the challenges witnessed in the industry. It is a revolutionary technology in organic waste management and engages the BM1 enzymes and Rapid Thermophilic digester to produce commercially marketable end products. The state-of-the-arts rapid thermophilic

digestor provides an optimum working environment for the enzymes as they are an enclosed and controlled system.

The waste to compost plant is a mechanical biological treatment facility which uses an invessel rapid thermophilic digestor technology. The Biomax breakthrough technology converts organic waste into100% premium grade organic fertilizer at high temperature within 24hours. The technology employed by Biomax is the fastest process so far in organic waste treatment industry. Biomax is highly committed in its research and development which innovates various enzyme-based solution to support sustainable business operations.



Our IWMF is powered by waste derived heavy oil as we embark on a low carbon footprint at our conversion plants. WCP's IWMF shall engage the **Beston waste to energy** plant which is based on the tyre pyrolysis technology. The **tyre pyrolysis plant** is an environmental protection system which uses the continuous liquefaction technology and catalytic breakdown reaction to convert waste plastics into renewable resources, such as fuel oil, carbon black, steel wire, combustible gas and so on. The end products can be applied to diesel engines and generators directly, or come into high ranking diesel and gasoline through Beston's pyrolysis oil distillation plant.



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Our energy partner, BESTON GROUP

**LTD** of China, with other global interest specializes in Gasification technology which provides us with a comparative advantage to produce 20MW green power. The thermal incineration technology engaged by our partner is proven beyond doubt: in 2009 seven operating plants built



since 1997 had accumulated a combined total of 400,000 hours. The existing plants achieve outstanding environmental results, with minimal impact on the local community. The small-scale, commercially proven, energy from waste technology provides an environmentally beneficial solution to the problems of epileptic power supply. Our partners provide a local solution to produce low-cost electricity, while outperforming the EU Emissions Standard (2000/76/EC). The community sized facilities developed by our partners convert non-recyclable, residual waste into renewable energy displacing fossil fuels. The plants provide the following:

- Diversion of residual waste from landfill
- Energy recovery as heat or electricity
- Ultra-low emissions
- A local solution to a local waste problem

Our strategy is to produce electricity from thermal incineration

treatment or pyrolysis which provides us with a zero waste landfill model as we are able to completely convert all waste at the dumpsite at Aba Eku into useable products – fly-ash and electricity.

In addition, the IWMF delivered by WCP shall alternatively deploy the wasteWOIMA<sup>®</sup> power plant which is capable of incinerating unsorted municipal solid waste within certain parameters. WOIMA Corporation's main focus is to develop waste-to-energy and waste-tofuel technologies in the small and medium scale range. With its vision of decentralized waste management, WOIMA does not only revolutionize the way waste is handled today, but it

radically and readily improves local quality of life and empower people by utilizing waste as a commodity instead of discarding it as refuse. The modular W2E power plant is based on WOIMAline (powerline) ideology, where each WOIMAline has the following characteristics

• 15 MW thermal power,

18 tph of superheated steam (gross),
3.4 MW (gross) or 2.7 MW (net) of electricity.





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The plant is a safe investment due to its modular and mobile nature. If the original location becomes unfeasible for operations, it can be taken apart, moved and erected on another site within 4 months. Basically, 100% of the plant is movable protecting some 90% of the original investment. Only the base slab is left behind. The proven technology and modular structure ensure that the plant has

- simple and robust structure
- quick roll-out
- good tolerance for heterogeneous fuels
- low operating and maintenance cost
- high pre-fabrication rate
- high efficiency rate
- flexible production scheme
- potential for relocation.

The plant design is based on 20' and 40' modules, which simultaneously act as

easily transportable units

- installation platform for technical solutions
- secure enclosures
- protective housing on-site

# **Premises and Equipment**

Our head-office is strategically located in South-West Nigeria from where our services are easily provided to our clients in North West, North East, North Central, South West, South East, South South Nigeria, and further into Sub-Saharan Africa as we are able to mobilize quickly with our proximity to the Apapa port in Lagos.

WCP characteristically manages projects with the engagement of tools which provides us with a preferred advantage. Our approach is based on established business management principles, and we execute tasks from the perspective that information must be seamlessly shared amongst team members. Our waste service fee collection is block-chained to allow for a seamlessly referenced and accountable database built into our process. Our waste management API is compatible with any web browser, iOS and android platforms, so team members are on-line real-time. All our facilities are geo-referenced, and geo-fenced, so we know where, when and who is doing what work.



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# **Policies and Procedures**

We have written policies and procedures which guide our business activities and engagement. As change is an inevitable prerequisite for growth, the policies are always subjected to regular review and updates are undertaken where necessary.

All employees have job descriptions, contracts of employments and annual objectives which are reviewed bi-annually. In addition, we strictly adhere to the company's health and safety policies, which are regularly reviewed to ensure that they remain current. The issues pertaining to quality remains a high priority with WCP. In this regard, WCP works with systems that are noted to derive quality engagement. Our activities in the field of quality management have led to an ever-increasing quality awareness ensuring that our clients consistently receive quality service from us. However, we are constantly aware of the need for continuous improvement and our process for obtaining such is based on the principles outlined in our Quality Assurance/Quality Control manual.

# **Quality Assurance/Quality Control.**

For the realization of our tasks, WCP will design, procure, install and commission equipment, materials and facilities, which are safe, reliable, excellent in performance, and satisfying to the clients' requirements. As such, our quality control and assurance program are issued to achieve the policy mentioned above. This program applies to personnel executing the services concerned with the realization of the project and those engaged to carry out services in compliance with the requirements of our QA/QC program. The responsibility for its compliance lies with the Quality Assurance/Quality Control Manager who is assigned to our business team. The program is issued under the authority and approval of the Business Manager, who takes account of the requirements of the international quality systems standards of ISO 9001.

# Health, Safety, Environment and Security (HSES).

Health, Safety, Environment and Security is another ardent prerequisite of WCP's operation and engagement. We acknowledge our responsibilities in this regard, and define our policy towards HSES as follows:

- a) Health
  - i. To ensure workers are medically certified.
  - ii. To ensure adequate healthcare for employees while working at site.
  - iii. To educate employees in their own health care.
- b) Safety
  - i. To ensure all personnel and equipment are certified and pre-mobbed.
  - ii. To provide all employees with approved personal protective equipment (PPE).
  - iii. To ensure that all employees are educated on the hazards related to their job and avoid exposure.
  - iv. To educate employees in the protection of the equipment.

v. To ensure good working condition of all equipment.

#### c) Environmental Protection

- i. To ensure the working environs are protected from damage due to the actions engaged.
- ii. To educate employees on protection of the environment.
- iii. To ensure a contingency plan on Environment Pollution control.

#### d) Security

- i. To maintain an effective security outfit against any form of violence.
- ii. To take proper inventory of company materials (stationary and in transit) and guard same against theft.



# 8. Management and Organization

In this section:

- Project Development Experience
- WCP Organizational Chart
- The Core Team
- WCP Organizational Structure

# **Project Development Experience**

Our development team has exceptional project experience in the SWM industry. Over the course of the last 3 decades, the team has collectively and successfully engaged projects with a combined value in excess of \$360 million, acquiring vital knowledge and expertise in the environmental waste sector market.

Our campaign to deploy our waste management system is gradually gaining recognition. In respect of the anticipated undertaking, WCP is presently in discussion with some of the state governments in South-West Nigeria to develop waste conversion plants and as such WCP's present structure is as follows;



To this end, we are in the process to undertake a proof of concept, as we are opened for business.

# The Core Team - WCP Shareholders

- Mallam Yayale Ahmed, Chairman (10%)
- Professor Olufemi Vaughan, Vice Chairman (10%)
- Greg Malpas, CEO (5%)

- Fiat International Ltd (50%)
- Mallam Umaru Ibrahim, Director (2.5%)
- Alhaji Mohammed Edewor, Director (2.5%)
- Investor Company (20%)

# **Company Directors**



**Mallam Mahmud Yayale Ahmed**, CFR, is the Chairman of the Board of Directors. He holds an undergraduate degree in social science with a specialization in government and a master's degree in public administration with a specialization in public finance from Ahmadu Bello University, Zaria. Mr Ahmed holds several honorary doctorate degrees, and has served in several notable position in the cabinet

of the Federal Government of Nigeria. Amongst which includes, the Head of Civil Service from December 2000 to July 2007, the Minister of Defence from July 2007 to September 2008, and Secretary to the Government of the Federation of Nigeria from September 2008 to May 2011.

Furthermore, Mr Ahmed has been the Chairman of the Board of Directors of Industrial and General Insurance, Plc. since 2016 having been on the Board as a Director since November 26, 2014.



**Professor Olufemi Vaughan**, is the Vice Chairman of the Board of Directors. He is a Nigerian academic whose research and teaching focuses on African political and social history and comparative politics of African states. His scholarship has been primarily influential in Nigerian history and politics. He is the Alfred Sargent Lee and Mary Ames lee professor of African Studies at Amherst College.

Prof. Vaughan earned a B. A. and M. A. in government & Politics at St. John's University in 1980 and 1983, and a PhD. In politics from oxford University in 1989. While at Oxford, he was a student of three distinguished Africanists, historian Anthony Kirk-Greene, historian Terence Ranger, and political sociologist Gavin Williams. He was assistant professor, associate professor, and professor of Africana Studies & History at State University of New York, Stony brook from 1990 – 2008. At stony Brook, he was also associate provost, associate dean, and directed the International Studies Program and the College for Global Studies. He was the Geoffrey Canada Professor of Africana Studies and History at Bowdoin College from 2008 – 2017, where he helped build an innovative interdisciplinary program in Africana Studies. He is a senior editor of the Oxford Research Encyclopaedia of Methods, Sources, and Historiography in African History, co-editor of Routledge handbook on Contemporary Nigeria, associate editor of the Oxford Research Encyclopaedia in African History, a member of the advisory board of the Woodrow Wilson International Centre for Scholar's Africa Program, and a member of the editorial board of the Journal of Nigerian Studies.

He is the recipient of major research and teaching awards including a Woodrow Wilson National Fellowship, a Woodrow Wilson Public Policy Fellowship, two Ford Foundation Research fellowships, Distinguished Scholar's Award, Association of global South Studies, and a State University of New York Chancellor's Award for Excellence in Teaching. He also serves as co-trustee of Omolewa Nursery & Primary School, a leading private elementary school in Ibadan, Nigeria, his late mother Gladys Aduke Vaughan (Otun-Iyalode of Ibadan) founded in 1962. The Olubadan of Ibadan Land (the traditional ruler of Ibadan in Nigeria) awarded him the honorary traditional title of Aare Onigege Ara of Ibadan Land for his research work in African studies in March 2017.



**Gregory Malpass** is the CEO of WCP. He brings 43 years engineering management experience to the board. Greg is a graduate of London Business School where he obtained an M. B. A. and the City University of London where he graduated with a 2/1 in civil engineering. He is an international business development expert with cognizant achievements in mergers and acquisition. He has worked on large institutional developments representing major international companies in the United

Kingdom, Middle East, Asia and Africa. He has built a very strong regional knowledge of Middle East, & Far East including major players/ contacts and relationships with major private clients, government officials and members of ruling families. Previous experience involved developing personal networks in Latin America, North & West Africa and Far East over 20 years from bases in Dubai, Hong Kong, Singapore, Kuala Lumpur, London, Lagos, Lima, Santo Domingo, & Miami. He was involved in the successful negotiation and financial closure of some major projects around the world, including a \$188m US Exim Bank financed Bulk Water Supply Project in Dominican Republic, a \$450m 400MW IPP Power Project in Colombia, establishment of a Private Water Concession company in Brazil with Anglian Water and helping secure the Construction Management contracts for \$5bn of Projects including Euro Disney in Paris and Canary Wharf Development in London.



**Olabode Akindeji-Oladeji** is a director of WCP representing Fiat International Ltd. on the Board of Directors. He holds a B.S.C.E. from Prairie View A&M University, Prairie View, Tx, and M.Sc.(Construction) from Columbia University, NY, NY. Olabode has thirty-one (31) years' cognizant experience in the practice of engineering, procurement and construction, as well as business development worldwide. He started his engineering career in civil engineering working at Arch Construction Company, Inc, Queens, NY - a medium sized engineering construction company, where he managed several building rehabilitation and construction projects (1988 - \$8million). He later joined CRSS, Inc. NY - a major engineering and construction concern, where he was involved in the management of the \$280million New York City Schools Construction Authority project (1990). While working with Robbins, Pope and Griffis Engineers, PC of New York /O'Brien Kreitzberg, Inc. he was involved with the \$80million claims review for the United States Corp of Engineers project at Fort Drum, N.Y. (1990). He later joined Rich Associates Inc, Staten Island, NY where as Vice President, he directed the \$1.5million United States Postal Service, Morgan Station General Mail Facility(GMF) project at West 30<sup>th</sup> Street and 9<sup>th</sup> Avenue, New York(1991).

A serial entrepreneur, he returned to Nigeria in March 1992, and started an economic development company where as President/CEO of Open-Ended Ventures(Africa) Ltd, Ibadan, he directed the engineering design and construction of several projects for public and private sectors. As Chairman of Fiat International Ltd, Ibadan, Nigeria – an infrastructure development holding company, he directed national projects in the Aviation, Education, Highway sectors for the public sector. Presently, he is involved in the Ibadan International Airport Consortium project, the Akanran Waste Converters project and the Oil Spill Cleanup and Recovery project – a collective \$410million Public Private Partnership(PPP) project with the Federal Government of Nigeria.

Olabode was listed in the Who's Who Among Students in American Universities and Colleges(1987, 1988); is a member of the Tau Beta Phi Association, a US based engineering honor fraternity (1988); a member of the American Society of Civil Engineering, and Nigerian Society of Engineering; and is registered with the Council of Regulation of Engineering in Nigeria. He has interest in several companies offering services in agriculture, aviation, construction, housing, oil & gas, and ICT sectors of the Nigerian market.



**Barr. Mohammed Edewor** is a Director of WCP. He brings 39years legal practise experience to the board having being a Barrister of both the Inner Temple London UK and the Nigerian Law School. Alhaji Edewor has specialised in advisory, mergers and acquisitions and joint venture practice for international energy, oil & gas as well as marine and shipping sectors. He has interests in several companies amongst which are Cresent Height Insurance Brokers, Aquafront Limited, Trojan Offshore, Horizon Oil International Limited, DGS Energy W/A Limited, SASSSOM

Group and 9mobile Telecommunications Ltd.

# **WCP Organizational Chart**

- Senior, General Management and Assistants



Prepared by Georges Elens/ Elens Commercial Consultancy

# WCP Organizational Structure

The WCP organizational structure is inter-related as the corporate structure is multidimensional. In respect of which, WCP presents the basis to continuously review the operations of its affiliate companies while providing overview, oversight and performance review of the operations. WCP engages a decentralized, team based structure, which allows WCP executives to interact, supervise and control works-related positions as WCP portrays the high echelon of command. The operations team at WCP primarily functions under a work breakdown structure which presents an ease of analysis, while still entertaining a hierarchy reporting line in the organization.

The policy, audit and oversight control are inherent in the holding company where the management team are resident, while the implementation and performance resides in the affiliate and subsidiary companies where the compliance team are resident. In this respect, the departmental relationship is plenary and flat as the reporting of departmental goals are reported across corporate boundaries in both a horizontal and within in a vertical direction. Therefore, the Systems Department has positions for Systems Managers in both WCP Capital which is under the Executive Director – Operations and Akanran Waste Converters (for example) which is under the Executive Director – Environment, while the Systems Managers report to the Systems Directors at Waste Conversion Project where the resident System Manager is charged with the consolidation of the systems design, implementation and performance across corporate boundaries.

Inadvertently, the engineering and maintenance department resides in the infrastructure and environment division. As such, the Executive Director is challenged with the supervision, operations and management of the engineering and maintenance department which has jurisdiction of the independent waste converters companies. Although the position of business development manager resides in the affiliate companies, the business development department which is in the hierarchy of the administration and marketing division is responsible for new sales of products – compost, carbon black, steel wire and electricity for the plants while the corresponding officers in the affiliate companies are responsible for the interaction and follow-up with existing clients. Nevertheless, the accounting for sales of products resides at the independent companies while the accounts consolidation is undertaken and managed with performance indexed to the budget at the holding company. The Accounts Manager (Consolidation) reports directly to the General Manager (Finance & Accounts), a position which does not exist in the affiliate companies. At the holding company resides the research and development department which shall undertake assessments, designs and redesigns and implementation of new and improved technologies.

# **AWC Organizational Chart**





Prepared by Georges Elens/ Elens Commercial Consultancy

# 7. What Are Funds Required For?

# **WCP Capital**

#### WCP Capital Cost Estimates showing drawdown schedule

S/No	DESCRIPTION	LOCAL EQUITY (NGN)	LOCAL (\$ Equivalent)	Foreign (\$)	GRAND TOTAL (\$)	DRAWDOW	N SCHEDULE
1	Office Accommodation					Year 1: Phase 1	Year 2: Phase 2
1.1	Office Rental (Abuja HQ)	20,500.000.00	58.571.43	0.00	58.571.43	58.571.43	
1.2	Transfer Station/Office [per State(37)]	140.000.000.00	400.000.00	0.00	400.000.00	400.000.00	2.400.000.00
1.6	Contingency @ 5%	8.025.000.00	22,928,57	0.00	22,928,57	22,928,57	120.000.00
	Subtotal for 1 (A)	168,525,000,00	481,500.00	0.00	481,500.00	481,500.00	2.520.000.00
2	Office Equipment & Software				,		
21	Computers & servers	0.00	0.00	65 430 94	65 430 94	65 430 94	666 834 09
2.2	Waste-Cell FRP	0.00	0.00	550 000 00	550,000,00	550,000,00	000,001.00
2.2	Waste?Green ERP	0.00	0.00	7 630 000 00	7 630 000 00	7 630 000 00	
2.5	Clearing Handling & L/C Charges @ 1%	28 850 008 30	82 454 31	7,050,000.00	82 454 31	82 454 31	6 668 34
2.4	Installation and Commissioning Cost (10%)	28,835,008.30	02,434.31	834 543 00	82,434.31	82,434.31	0,008.34
2.5	Visco 8 7.5%	0.00	0.00	624,545.09	624,545.09	624,545.09	00,065.41
2.0	Vat @ 7.5%	0.00	-	618,407.32	618,407.32	618,407.32	50,012.56
2.7	Contingency @ 5%	1,442,950.42	4,122.72	453,498.70	457,621.42	457,621.42	37,009.29
		30,301,958.72	86,577.02	10,141,880.06	10,228,457.09	10,228,457.09	827,207.69
3	Essential Services/Utilities					-	-
3.1	Pyrolysis Plant + Standard 500KW Gen set	0.00	0.00	445,268.50	445,268.50	445,268.50	2,671,611.00
3.2	Power Supply (15kva Solar + Inverter)	0.00	0.00	31,500.00	31,500.00	31,500.00	189,000.00
3.3	Storage Tank (Diesel, oil and fuel)	612,500.00	1,750.00	0.00	1,750.00	1,750.00	10,791.67
3.4	Vat @ 7.5%	45,937.50	131.25	35,757.64	35,888.89	35,888.89	215,355.20
3.5	Contingency @ 5%	30,625.00	87.50	23,838.43	23,925.93	23,925.93	143,570.13
	Subtotal for 3 (C )	689,062.50	1,968.75	536,364.56	538,333.31	538,333.31	3,230,328.00
4	Vehicle & Trucks	-		135.700.00	135.700.00	135.700.00	2,010.631.25
5	Furniture/Fittings and Office Equipment	8 750 000 00	25 000 00	0.00	25,000,00	25,000,00	2,020,002.25
Ĩ	Total Fixed Assets	208 266 021 22	595.045.77	10 813 944 62	11 408 990 40	11 /08 990 /0	8 588 166 04
	Proliminany & Pro-operative Expenses	200,200,021.22	333,043.11	10,013,344.02	11,400,550.40	11,400,550.40	0,000,100.04
7	(Consultants' Egos & Permits)	11 000 000 00	21 429 57	0.00	31 428 57	21 / 22 57	
2	(Consultants Fees & Permits)	11,000,000.00	51,428.37	100 120 45	31,426.37	31,420.37	1 601 440 00
2		2,192,000.21	0,204.74	108,139,43	114,404.19	572,404.07	1,001,440.09
9	Interest during construction	0.00	0.00	0.00	0.00	-	-
10	Financial Advisory Charges **	0.00	0.00	963,181.16	963,181.16	963,181.16	
	Subtotal	13,192,660.21	37,693.31	1,071,320.60	1,109,013.92	1,367,013.80	1,681,440.89
	Grand Total	221,458,681.43	632,739.09	11,885,265.23	12,518,004.32	12,776,004.20	10,269,607.82
OTE	S						
*	Working Capital - Phase 1: 1% of (Fixed Assets cos	st + Pre-operative exp	pense) + FY1 Salar	ries + FY1 Intangib	le Assets		
	Working Capital - Phase 2: FY2 Salaries + FY2 Intan	gible Assets					
**	Financial Advisory Charges - Assumption Phase 1:	100%					
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	c) Tait Hook-Lift @600	)00/unit: 5	units -	Ş 30	00.000,00		
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Total: a) WCP Capital (Phase 1):

#### \$ 12,776,004.20

# Akanran Waste Converters (AWC)

#### W2E Cost Estimates showing drawdown schedule

		LOCAL EQUITY	LOCAL	Foreign	GRAND TOTAL	DDA		
S/No	DESCRIPTION	(NGN)	(\$ Equivalent)	(\$)	(\$)	UKA		ULC
1	Land and Building					Year 1: Phase 1	Year 1: Phase 2	Year 2: Phase 3
1.1	Land acquisition ( Waste 2 Fertlizer)	45,000,000.00	128,571.43	0.00	128,571.43	128,571.43		
1.2	Fence and gate house (Plants III)	18,491,011.00	52,831.46	0.00	52,831.46	52,831.46		
1.3	Factory Building (Organic Fertilizer)	340,000,000.00	971,428.57	0.00	971,428.57	971,428.57		
1.4	Factory Building (Material Resource Facility)	170,000,000.00	485,714.29	0.00	485,714.29	485,714.29		
1.5	Civil Works (Driveway and parking etc.)	10,520,000.00	30,057.14	0.00	30,057.14	30,057.14		
1.6	Contingency @ 5%	29,200,550.55	83,430.14	0.00	83,430.14	83,430.14	-	
	Subtotal for 1 (A)	613,211,561.55	1,752,033.03	0.00	1,752,033.03	1,752,033.03	-	
2	Plant, Machinery and Equipment							
2.1	Power Plant (20MW)	0.00	0.00	34,335,000.00	34,335,000.00			34,335,000.00
2.2	Power Plant (Ancilliary Works)	131,963,680.80	377,039.09	55,856,000.00	56,233,039.09			56,233,039.09
2.3	Multiple Resource Facility (MRF)	0.00	0.00	6,500,000.00	6,500,000.00	6,500,000.00	-	
2.4	Organic Fertilizer Plant	0.00	0.00	8,969,168.00	8,969,168.00	2,242,292.00	6,726,876.00	
2.5	Port Development Charges @ 7%	0.00	0.00	3,486,291.76	3,486,291.76	611,960.44	470,881.32	2,403,450.00
2.6	Clearing, Handling & L/C Charges @ 1%	174,314,588.00	498,041.68	0.00	498,041.68	87,422.92	67,268.76	343,350.00
2.7	(20%)	0.00	0.00	3,093,833.60	3,093,833.60	1,748,458.40	1,345,375.20	-
2.8	Vat @ 7.5%	0.00	0.00	3,996,784.48	3,996,784.48	701,568.93	539,831.80	2,755,383.75
2.9	Contingency @ 5%	8,715,729.40	24,902.08	3,019,053.89	3,043,955.98	594,585.13	457,511.65	1,991,859.19
	Subtotal for 2 (B)	183,030,317.40	899,982.85	119,256,131.73	120,156,114.59	12,486,287.83	9,607,744.73	98,062,082.03
3	Essential Services/Utilities							
	Pyrolysis Plant + Standard 2units 1000KW Gen							
3.1	set	0.00	0.00	806,040.00	806,040.00	806,040.00	-	
3.2	Power Supply (15kva Solar + Inverter)	0.00	0.00	31,500.00	31,500.00	31,500.00		
3.3	Water System	0.00	0.00	2,000.00	2,000.00	2,000.00		
3.4	Storage Tank (Diesel, oil and fuel)	612,500.00	1,750.00	0.00	1,750.00	1,750.00		
3.5	Vat @ 7.5%	45,937.50	131.25	62,965.50	63,096.75	63,096.75	-	
3.6	Contingency @ 5%	30,625.00	87.50	41,977.00	42,064.50	42,064.50	-	
	Subtotal for 3 (C )	689,062.50	1,968.75	944,482.50	946,451.25	946,451.25	-	-
4	Vehicle, Trucks & Utility equipment	218,363,250.00	623,895.00	2,333,160.00	2,957,055.00	623,895.00	2,246,910.00	86,250.00
5	Furniture/Fittings and Office Equipment	5,803,420.00	16,581.20	0.00	16,581.20	16,581.20		
	Total Fixed Assets	1,021,097,611.45	3,294,460.84	122,533,774.23	125,828,235.07	15,825,248.31	11,854,654.73	98,148,332.03
	Preliminary & Pre-operative Expenses	405 340 000 00	F 60 605 74		560 605 74	560 605 74		
	(Consultants' Fees & Permits)	196,240,000.00	560,685./1	0.00	560,685.71	560,685.71	404.004.43	005 005 00
8	Interest during construction	15,493,012.92	38,551.47	1,220,337.74	1,203,889.21	404,192.15	404,994.43	960,890.82
10	Financial Advisory Charges	0.00	0.00	6 763 952 75	6 763 953 75	453 807 43	1 259 643 30	4 051 214 02
10	Financial Advisory Charges	200 722 012 02	0.00 500 327 19	0,/02,800./5	0,/02,803./5	452,697.45	1,006,042.30	4,901,014.02
	Subtotal	205,735,012.92	333,237.18	7,568,191.49	0,007,428.07	1,4/7,775.29	1,703,030.73	5,538,210.84
	Grand Total	1,230,830,624.37	3,893,698.01	130,521,965.73	134,415,663.74	17,303,023.60	13,618,291.47	104,086,542.86

# Sum Total (Phase 1: A+B):

\$ 43,697,319.27



# 8. Financial Plan

In this section:

- The Structure
- Summarised Income Statements Five Year Plan
- Projected Cash Flow Statement Five Year Plan
- Financing Schedule
- Summarised Balance Sheet Five Year Plan

# **The Structure**

The plan to finance WCP's business case is based on a venture capital arrangement, which is predicated on the engagement of a hybrid financial structure. WCP requires early stage financing which is structured as a debenture based equity arrangement, as we raise \$24,266,903.00 (\mathbf{H8.736billion) for the purchase of equipment, plants and software from the China, Singapore, Turkey and Portugal in order to undertake the proof of concept, construction of transfer stations, and compost plants as the case is. WCP subsequently plan a debt finance of \$133,786,563.00 (\mathbf{H48.163billion) through the engagement of Stand-by Letters of Credit (L/C) backed debenture from Development Financial Institutions (DFI) and other international finance institutions for the development of WCP Capital and Akanran Waste Converters. Following from the early stage finance, WCP shall undertake private placement arrangement to raise equity capital in WCP subsidiary companies – IWC, OWC and ILWC. In this respect, WCP shall engage equity and debt finance of \$201.026million (\mathbf{H72.369billion) as a back-drop to our continuous plan for the development of conversion plants in South-West, Nigeria.

In respect of the plan presented herein, we welcome investments in the project development of WCP - a company with operations which can be replicated across sub-Saharan Africa as WCP generates a 42% ROI from WCP Capital in Y5 and 25% ROI in Year 10 from AWC. WCP has a 3-7year debt payment and an exit plan in Y10 with a niche opportunity to grow into a pan-African company with potentials of becoming a \$1billion company within a period of 10years.

	DECONDITION	AN	SOURCE OF	
5/10	DESCRIPTION	(\$)	(NGN)	FINANCE
1	WCP Capital	23,045,612.02	8,296,420,327.20	Venture Capital
2	Akanran Waste Converters	135,007,857.94	48,602,828,858.40	Hybrid Finance
3	Igando Waste Converters	165,795,917.91	59,686,530,447.60	Hybrid Finance
4	Ilokun Waste Converters	50,788,059.97	18,283,701,589.20	Hybrid Finance
5	Onibueja Waste Converters	40,788,059.97	14,683,701,589.20	Hybrid Finance
	Total	415,425,507.81	149,553,182,811.60	

# **Financing Schedule**

In line with the above, kindly find the following financial projections;

# WCP Capital Summarised Income Statements - 5 Year Plan

- Revenues continue to grow at an average of 28% year on year, reaching \$39.287million in year 5
- Healthy Profits Before Interest and Tax throughout the 5-year forecast
- Loan repaid in 7 years

# Summarised Balance Sheet - 5 Year Plan

- Assets grow to \$34.529million in Year 5
- Equity capital growth from \$7.741 million to \$26.64 million in 5 years.

# Projected Cash Flow Statement - 10 Year Plan

• Cash at beginning of period grow from \$0million to \$70.794million in 10 years.

# Akanran Waste Converters:

# Summarised Income Statements - 5 Year Plan

- Revenues continue to grow at an average of 47% year on year, reaching \$52.343million in year 5
- Healthy Profits Before Interest and Tax throughout the 5-year forecast
- Loan repaid in 7 years

# Summarised Balance Sheet - 5 Year Plan

- Assets grow to \$67.734 million in Year 5
- Equity capital growth from \$14.943million to \$17.998million in 5 years.

# **Projected Cash Flow Statement - 10 Year Plan**

• Cash at beginning of period grow from \$0million to \$58.095million in 10 years.

# 9. Appendices

# **Financial Projections**

# WCP Capital Income Statement for the First 5 Years of Trading

	FY 1	FY 2	FY 3	FY 4	FY 5
Revenues					
Revenues	\$7,143,119	\$14,286,238	\$23,036,558	\$30,715,411	\$39,287,154
Total Revenue	\$7,143,119	\$14,286,238	\$23,036,558	\$30,715,411	\$39,287,154
Direct Cost					
Direct Costs	\$4,429,891	\$5,804,247	\$7,038,470	\$8,272,692	\$9,506,915
Total Direct Costs	\$4,429,891	\$5,804,247	\$7,038,470	\$8,272,692	\$9,506,915
GROSS PROFIT	\$2,713,228	\$8,481,991	\$15,998,089	\$22,442,719	\$29,780,239
GROSS PROFIT(%)	38%	59%	69%	73%	76%
Other Expenses					-
Salaries	\$258,000	\$1,681,441	\$2,834,039	\$2,920,273	\$3,009,155
Marketing Expenses	\$180,000	\$189,200	\$198,400	\$218,800	\$229,700
Rent/Utility Expenses	\$84,000	\$86,400	\$89,200	\$94,500	\$97,400
Other Expenses	\$82,000	\$84, <mark>400</mark>	\$86,800	\$92,200	\$94,900
Impairment	\$1,071,600	\$2,142,800	\$3,455,600	\$4,607,300	\$5,893,100
Contingency	\$714,400	\$1,428,800	\$2,303,600	\$3,071,500	\$3,928,700
Total Other Expenses	\$2,390,000	\$5,613,041	\$8,967,639	\$11,004,573	\$13,252,955
EBITDA	\$323,228	\$2,868,950	\$7,030,449	\$11,438,146	\$16,527,284
Depreciation	\$999,000	\$1,832,000	\$2,345,600	\$2,345,600	\$2,345,600
Amortization	-	-	-	-	-
Preliminary Exp Written off	-	-	-	-	-
EBIT	-\$675,772	\$1,036,950	\$4,684,849	\$9,092,546	\$14,181,684
Interest Expense	\$235,600	\$620,500	\$748,800	\$599,200	\$449,400
PRETAX INCOME	(\$911,372)	\$416,450	\$3,936,049	\$8,493,346	\$13,732,284
Net Operating Loss	\$(911,372)	\$(911,372)	\$(494,922)	-	-
Use of Net Operating Loss	-	\$416,450	\$494,922	-	-
Taxable Income	-	-	\$3,441,127	\$8,493,346	\$13,732,284
Income Tax Expense	-	-	\$1,010,700	\$2,548,000	\$4,119,700
NET INCOME	(\$911,372)	\$416,450	\$2,925,349	\$5,945,346	\$9,612,584
Net Profit Margin (%)	-13%	3%	13%	19%	24%
Return on Investment (%)	-7%	2%	13%	26%	42%

# AWC Income Statement for the First 5 Years of Trading

	FY 1	FY 2	FY 3	FY 4	FY 5
Revenues					
Revenues	\$2,025,000	\$10,800,000	\$40,950,171	\$46,188,651	\$52,343,865
Total Revenue	\$2,025,000	\$10,800,000	\$40,950,171	\$46,188,651	\$52,343,865
Direct Cost					
Direct Costs	\$432,540	\$1,555,449	\$13,090,076	\$14,070,325	\$14,910,930
Total Direct Costs	\$432,540	\$1,555,449	\$13,090,076	\$14,070,325	\$14,910,930
GROSS PROFIT	\$1,592,460	\$9,244,551	\$27,860,096	\$32,118,327	\$37,432,935
GROSS PROFIT(%)	79%	86%	68%	70%	72%
Other Expenses					
Salaries	\$187,200	\$404,994	\$716,762	\$739,432	\$762,840
Marketing Expenses	\$180,000	\$189,200	\$198,400	\$218,800	\$229,700
Rent/Utility Expenses	\$84,000	\$86,400	\$89,200	\$94,500	\$97,400
Other Expenses	\$82,000	\$84,400	\$86,800	\$92,200	\$94,900
Impairment	-	-	\$6,142,400	\$6,928,300	\$7,851,600
Contigencies	\$101,400	\$540,000	\$2,047,600	\$2,309,400	\$2,617,200
Total Other Expenses	\$634,600	\$1,304,994	\$9,281,162	\$10,382,632	\$11,653,640
EBITDA	\$957,860.24	\$7,939,556	\$18,578,933	\$21,735,695	\$25,779,295
Depreciation	\$2,065,500	\$10,939,400	\$13,541,600	\$13,541,600	\$13,541,600
Amortization	-	-	-	-	-
Preliminary Exp Written off	-	-	-	-	-
EBIT	\$(1,107,640)	\$(2,999,844)	\$5,037,333	\$8,194,095	\$12,237,695
Interest Expense	\$736,000	\$4,639,300	\$5,940,400	\$4,752,300	\$3,564,200
PRETAX INCOME	(\$1,843,640)	(\$7,639,144)	(\$903,067)	\$3,441,795	\$8,673,495
Net Operating Loss	\$(1,843,640)	\$(9,482,783)	\$(10,385,850)	\$(10,385,850)	\$(6,944,056
Use of Net Operating Loss	-	-	-	\$3,441,795	\$6,944,056
Taxable Income	-	-	-	-	\$1,729,439
Income Tax Expense	-	-	-	-	\$518,800
NET INCOME	(\$1,843,640)	(\$7,639,144)	(\$903,067)	\$3,441,795	\$8,154,695
Net Profit Margin (%)	-91%	-71%	-2%	7%	16%
Return on Investment (%)	-11%	-25%	-1%	3%	6%

Prepared by Georges Elens/ Elens Commercial Consultancy

	FY 1	FY 2	FY 3	FY 4	FY 5
	\$10,311,707	\$1,879,949	\$3,565,169	\$8,279,585	\$16,579,740
	\$793,700	\$1,587,400	\$2,559,600	\$3,412,800	\$4,365,200
	\$11,105,407	\$3,467,349	\$6,124,769	\$11,692,385	\$20,944,940
	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0
	\$13,182,692	\$23,452,300	\$23,452,300	\$23,452,300	\$23,452,300
	\$999.000	\$2,831,000	\$5,176,600	\$7,522,200	\$9,867,800
	\$12,183,692	\$20,621,300	\$18,275,700	\$15,930,100	\$13,584,500
		-			
	\$0	<b>S</b> 0	\$0	\$0	\$0
	\$23,289,099	\$24,088,649	\$24,400,469	\$27,622,485	\$34,529,440
LIABILITIES & EQUITY					
	\$568,300	\$951,400	\$1,333,800	\$1,606,400	\$1,896,700
	\$14,979,658	\$14,979,658	\$11,983,728	\$8,987,799	\$5,991,869
	\$15,547,958	\$15,931,058	\$13,317,528	\$10,594,199	\$7,888,569
	\$8,652,513	\$8,652,513	\$8,652,513	\$8,652,513	\$8,652,513
	(\$911,372)	(\$494,922)	\$2,430,427	\$8,375,773	\$17,988,357
	\$7,741,141	\$8,157,591	\$11,082,940	\$17,028,286	\$26,640,871
TOTAL LIABILITIES & EQUITY	\$23,289,099	\$24,088,649	\$24,400,469	\$27,622,485	\$34,529,440

# WCP Capital Balance Sheet for the First 5 Years of Trading

# AWC Balance Sheet for the First 5 Years of Trading

ASSETS					
	\$104,292,108	\$2,745,221	(\$10,106,529)	(\$17,293,217)	(\$19,866,205)
	\$300,000	\$1,200,000	\$4,550,000	\$5,132,100	\$5,816,000
	\$104,592,108	\$3,945,221	(\$5,556,529)	(\$12,161,117)	(\$14,050,205)
	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0
	\$31,328,003	\$135,414,545	\$135,414,545	\$135,414,545	\$135,414,545
	\$2,065,500	\$13,004,900	\$26,546,500	\$40,088,100	\$53,629,700
	\$29,262,503	\$122,409,645	\$108,868,045	\$95,326,445	\$81,784,845
	\$0	\$0	\$0	\$0	\$0
TOTAL ASSETS	\$133,854,610	\$126,354,866	\$103,311,517	\$83,165,328	\$67,734,640
LIABILITIES & EQUITY					
	\$103,800	\$243,200	\$1,864,300	\$2,037,700	\$2,213,700
	\$118,806,958	\$118,806,958	\$95,045,575	\$71,284,192	\$47,522,809
	\$118,910,758	\$119,050,158	\$96,909,875	\$73,321,892	\$49,736,509
	\$16,787,492	\$16,787,492	\$16,787,492	\$16,787,492	\$16,787,492
	(\$1,843,640)	(\$9,482,783)	(\$10,385,850)	(\$6,944,056)	\$1,210,639
	\$14,943,852	\$7,304,709	\$6,401,642	\$9,843,437	\$17,998,131
TOTAL LIABILITIES & EQUITY	\$133,854,610	\$126,354,867	\$103,311,517	\$83,165,329	\$67,734,640

# WCP Capital Cash Flow Statement for First 10 Years of Trading

	FY 1	FY 2	FY 3	FY 4	FY 5	FY 6	FY 7	FY 8	FY 9	FY 10
CASH FLOW FROM OPERATIONS										
Net Income (Loss)	(\$911,372)	\$416,450	\$2,925,349	\$5,945,346	\$9,612,584	\$12,598,585	\$12,620,882	\$12,644,553	\$13,685,336	\$13,599,526
Change in Working Capital	\$65,619	(\$410,600)	(\$589,800)	(\$580,600)	(\$662,100)	(\$561,400)	\$10,200	\$9,700	(\$183,500)	\$10,300
Plus Depreciation	\$999,000	\$1,832,000	\$2,345,600	\$2,345,600	\$2,345,600	\$2,345,600	\$2,345,600	\$2,345,600	\$2,345,600	\$2,344,300
Plus Amortization	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Plus Preliminary exp written off	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Net Cash Flow from Operations	\$153,247	\$1,837,850	\$4,681,149	\$7,710,346	\$11,296,084	\$14,382,785	\$14,976,682	\$14,999,853	\$15,847,436	\$15,954,126
CASH FLOW FROM INVESTMENTS										
Fixed Assets	(\$12,776,004)	(\$10,269,608)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Intangible Assets	\$0	\$0	50	S0-	\$0	\$0	\$0	\$0	\$0	\$0
Net Cash Flow from Investments	(\$12,776,004)	(\$10,269,608)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CASH FLOW FROM FINANCING										
Cash from Equity	\$8,065,964	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cash from Debt financing	\$14,868,500	\$0	(\$2,995,930)	(\$2,995,930)	(\$2,995,930)	(\$2,995,930)	(\$2,995,930)	\$0	\$0	\$0
Net Cash Flow from Financing	\$22,934,464	\$0	(\$2,995,930)	(\$2,995,930)	(\$2,995,930)	(\$2,995,930)	(\$2,995,930)	\$0	\$0	\$0
Net Cash Flow	\$10.311.707	(\$8,431,758)	\$1,685,220	\$4,714,416	\$8,300,155	\$11,386,856	\$11,980,753	\$14,999,853	\$15.847.436	\$15.954.126
Cash at Beginning of Period	\$10,011,101	\$10.311.707	\$1,879,949	\$3,565,169	\$8,279,585	\$16,579,740	\$27,966,596	\$39.947.349	\$54,947,201	\$70,794,637
Cash at End of Period	\$10,311,707	\$1,879,949	\$3,565,169	\$8,279,585	\$16,579,740	\$27,966,596	\$39,947,349	\$54,947,201	\$70,794,637	\$86,748,763

# AWC Cash Flow Statement for First 10 Years of Trading

	FY 1	FY 2	FY 3	FY 4	FY 5	FY 6	FY 7	FY 8	FY 9	FY 10
CASH FLOW FROM OPERATIONS										
Net Income (Loss)	(\$1,843,640)	(\$7,639,144)	(\$903,067)	\$3,441,795	\$8,154,695	\$10,676,736	\$15,570,388	\$21,251,683	\$27,079,404	\$34,007,240
Change in Working Capital	\$94,819	(\$760,600)	(\$1,728,900)	(\$408,700)	(\$507,900)	(\$666,600)	(\$719,600)	(\$854,800)	(\$1,019,600)	(\$1,207,600)
Plus Depreciation	\$2,065,500	\$10,939,400	\$13,541,600	\$13,541,600	\$13,541,600	\$13,541,600	\$13,541,600	\$13,541,600	\$13,541,600	\$13,539,800
Plus Amortization	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Plus Preliminary exp written off	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Net Cash Flow from Operations	\$316,680	\$2,539,656	\$10,909,633	\$16,574,695	\$21,188,395	\$23,551,736	\$28,392,388	\$33,938,483	\$39,601,404	\$46,339,440
CASH FLOW FROM INVESTMENTS										
Fixed Assets	(\$30,921,315)	(\$104,086,543)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Intangible Assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Net Cash Flow from Investments	(\$30,921,315)	(\$104,086,543)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CASH FLOW FROM FINANCING										
Cash from Equity	\$16,200,943	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cash from Debt financing	\$118,695,800	\$0	(\$23,761,383)	(\$23,761,383)	(\$23,761,383)	(\$23,761,383)	(\$23,761,383)	\$0	\$0	\$0
Net Cash Flow from Financing	\$134,896,743	\$0	(\$23,761,383)	(\$23,761,383)	(\$23,761,383)	(\$23,761,383)	(\$23,761,383)	\$0	\$0	\$0
Net Cash Flow	\$104,292,108	(\$101,546,887)	(\$12,851,750)	(\$7,186,688)	(\$2,572,988)	(\$209,647)	\$4,631,005	\$33,938,483	\$39,601,404	\$46,339,440
Cash at Beginning of Period	\$0	\$104,292,108	\$2,745,221	(\$10,106,529)	(\$17,293,217)	(\$19,866,205)	(\$20,075,853)	(\$15,444,848)	\$18,493,635	\$58,095,040
Cash at End of Period	\$104,292,108	\$2,745,221	(\$10,106,529)	(\$17,293,217)	(\$19,866,205)	(\$20,075,853)	(\$15,444,848)	\$18,493,635	\$58,095,040	\$104,434,480

# **Key Financial Assumptions**

Debtor Period; 90days

Tax Rate:

- a) Corporate Income Tax: 30% of Taxable Profit, and
- b) Education tax levy: 2% of Assessable Profit
- 1. The compost plant would process 200tpd from Year 1
- 2. The quantum (tonnage) of waste available for input would be appropriate to automatically drive the project output
- 3. The equipment recovery cost is estimated for 5years as the replacement, refurbishment or the cost to undertake a turn-around-maintenance for the fertilizer plant is negligible, while such arrangement for the W2E plant would be necessary for a period of 15-20 years.
- 4. For the W2E revenue recognition, a license for IPP with production capacity for potential off-takers with a power purchase agreement is requires from NERC/Min of Power and is considered.

