Nigerian Ports Authority

# OUTLINE BUSINESS CASE (OBC) ADVISORY SERVICES CONSULTANCY FOR THE CONCESSION OF KIRIKIRI LIGHTER TERMINALS I & II, LAGOS

## OBC Report

## Final version

*Confidential document*

**30 July 2012**

AXELCIUM FINANCIAL ENGINEERING

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| | |
|---|---|
| Capex | Capital Expenditures |
| CAPM | Capital Asset Pricing Model |
| DSCR | Debt Service Coverage Ratio |
| DSRA | Debt Service Reserve Account |
| EBITDA | Earnings Before Interest, Taxes, Depreciation and Amortisation |
| ECA | Export Credit Agency |
| EIA | Environmental Impact Assessment |
| EPC | Engineering, Procurement and Construction |
| FGN | Federal Government of Nigeria |
| FBC | Full Business Case |
| FMoA | Federal Ministry of Agriculture |
| FMoT | Federal Ministry of Transport |
| FTE | Full-Time Equivalent |
| GDP | Gross Domestic Product |
| ICRC | Infrastructure Concession Regulatory Commission |
| IT | Information Technology |
| IRR | Internal Rate of Return |
| KLT | Kirikiri Lighter Terminals |
| kVA | Kilo Volt-Ampere |
| LASH | Lighter Aboard Ship |
| LLCR | Loan Life Coverage Ratio |
| MDA | Ministries, Departments and Agencies |
| NCS | Nigeria Customs Service |
| NGN | Nigerian Naira |
| NITOA | Nigerian Trawler Owners' Association |
| NP4 | National Policy on Public-Private Partnerships |
| NPA | Nigerian Ports Authority |
| NPV | Net Present Value |
| OBC | Outline Business Case |
| Opex | Operating Expenditures |
| PCG | Partial Credit Guarantee |
| PLCR | Project Life Coverage Ratio |

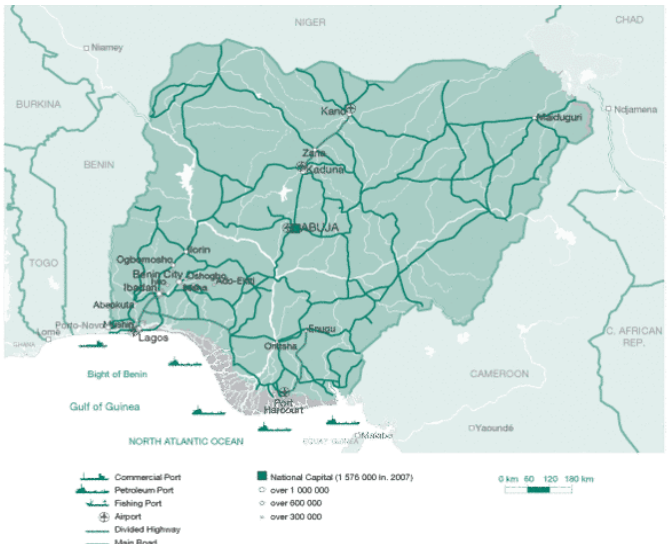
| | |
|---|---|
| PPP | Public-Private Partnership |
| PRG | Partial Risk Guarantee |
| PRP | Ports Reform Process |
| PRI | Political Risk Insurance |
| ROE | Return on Equity |
| TCIPC | Tin Can Island Port Complex |
| TEU | Twenty-foot Equivalent Unit |
| TICT | Tin Can Island Container Terminal |
| TOL | Temporary Occupation License |
| UNCTAD | United Nations Commission for Trade and Development |
| USD | United States Dollar |
| WACC | Weighted Average Cost of Capital |

# 1. INTRODUCTION

## 1.1 Project background

The Federal Government of Nigeria (FGN), represented by the Federal Ministry of Transport (FMoT), and the Nigerian Ports Authority (NPA), in collaboration with the Infrastructure Concession Regulatory Commission (ICRC) and in the context of the Ports Reform Process for reliable, efficient and safe port operations, would like to assess the feasibility of Public-Private Partnership (PPP) for Kirikiri Lighter Terminals I & II (KLT I & II) at Tin Can Island Port Complex (TCIPC) in Lagos.

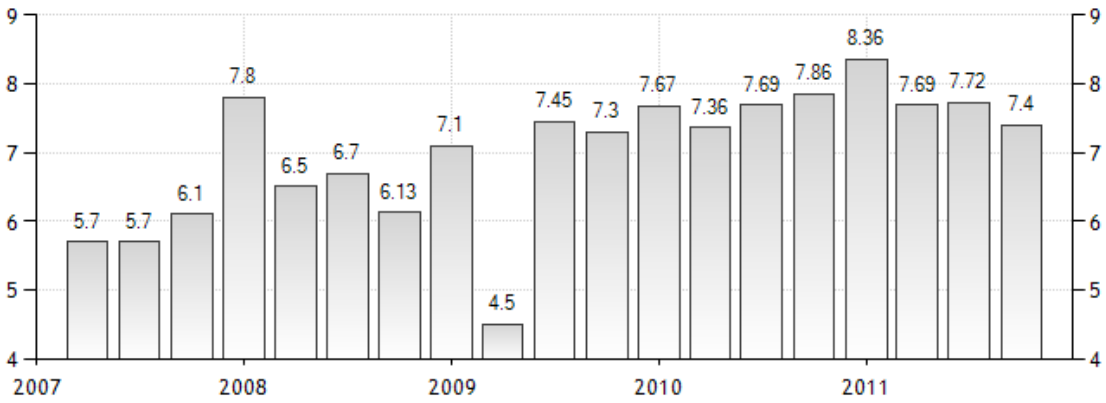
***Fig. 1. TRANSPORT MAP OF NIGERIA***




*Source: African Economic Outlook*

Nigeria is the most populated country in Africa, with an estimated population of 158 million in 2010, and a major economic power, with an estimated Gross Domestic Product (GDP) of USD 247 billion in 2011. In spite of the recent financial crisis, the country's economy has been expanding unabated and has managed to sustain high growth figures throughout the last few years, making Nigeria one of the fastest-growing economies in the world.

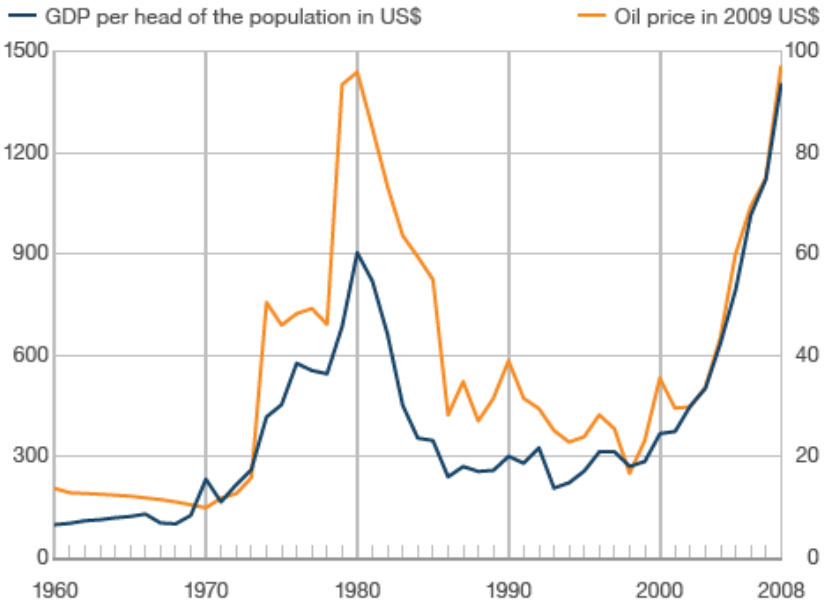
***Fig. 2. NIGERIA GDP GROWTH RATE (ANNUAL PERCENT CHANGE)***




*Source: National Bureau of Statistics*

Nigeria is also Africa's biggest oil exporter and boasts the largest natural gas reserves on the continent. As a consequence the Nigerian economy and Federal State budget remain highly dependent on oil prices.

***Fig. 3. OIL PRICE AND NIGERIAN GROWTH***



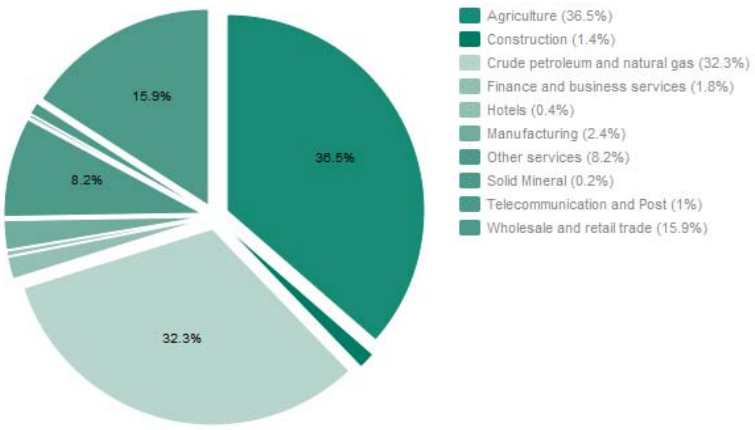

Note: The oil price from 1960 to 1983 is for Arabian Light posted at Ras Tanura. From 1984 onwards it is Brent dated.

*Source: World Bank*

The FGN has therefore initiated a 'Vision 2020' program which aims at curbing the national economy's overreliance on oil and encouraging diversification, with a goal to make Nigeria one of the top 20 economies in the world by 2020.

The chart below illustrates the necessity to actively promote diversification of the economy. Indeed the oil sector weighs more than 30% of Nigeria's GDP, to be compared with a mere 2.4% of GDP for manufacturing activities.

***Fig. 4. SECTORAL SPLIT OF NIGERIA'S GDP***




*Source: National Bureau of Statistics*

The two main sectors which the FGN intends to develop are agriculture and manufacturing. The development of modern port infrastructures is key to unleashing growth in those sectors as it allows for increasing trade in non-oil commodities and manufactured goods. The FGN therefore embarked upon the Ports Reform Process with the following objectives in mind:

- Increase efficiency of port operations;
- Reduce government's exposure on otherwise commercially viable ventures;
- Reduce costs of port services to users;
- Boost economic activities;
- Accelerate development and reposition of Nigeria as the hub for international freight and trade in West and Central Africa.

After due consultations and assessment of experiences in other countries, both developed and developing, the landlord port model, which consists in a clear separation of roles and tasks between the regulator and the operator, was adopted for the Nigerian ports. One of the concrete implications thereof was the concessioning of several major port terminals to the private sector in 2006. NPA is now envisaging the same for KLT I & II, hence the present Outline Business Case (OBC) study.

## 1.2 Kirikiri Lighter Terminals: towards a new horizon

The Kirikiri area is part of TCIPC and is located about 1,500 m away from the Western tip of Tin Can Island, along a channel connected to Badagry Creek.

***Fig. 5. LOCATION OF KLT I & II***


*Source: Axelcium*

In 1976 NPA launched the construction of two terminals (KLT I & II) on both sides of the channel with the following characteristics:

- Two sheet piles quay wall with a respective length of about 1,000 m for KLT I and 760 m for KLT II and an initial draught estimated at 4.5 to 5.0 m deep;
- Two 15 cm thick concrete slab platforms with a respective size of about 26 ha for KLT I and 16 ha for KLT II;
- Fences and gates around both terminals;
- Connection with road network;
- Platform drainage system (no more functional);
- Power generation facility (not realised);
- Lighting masts (not realised);
- Wastewater treatment system (not realised);
- Buildings for NPA staff, police and customs.

Over three decades those infrastructures have been decaying due to lack of maintenance. In 2006 however decision was taken to revitalise the Kirikiri area and parts of the terminals (26 ha on KLT I and 16 ha on KLT II) were set apart for concession to private investors. KLT I was to be dedicated to general cargo traffic, whereas KLT II was to be dedicated to container storage. The area to be conceded included a 1,000 m long quay wall on KLT I and a 760 m long quay wall on KLT II, as well as sheds, warehouses and offices.

The following chart gives an overview of the terminals which were to be concessioned in 2006.

***Fig. 6. DESCRIPTION OF KLT I & II AREAS TO BE CONCESSIONED TO PRIVATE INVESTORS IN 2006***

| | KLT I | KLT II |
|---|---|---|
| **Terminal berth** | Quay included in the concession | Quay included in the concession |
| **Leasing contract** | Leased to a number of separate operators | Leased to a number of separate operators |
| **Warehouses** | None | None |
| **Open cargo storage areas** | 26 hectares directly located behind the quay, paved and in fair condition | 16 hectares directly located behind the quay, paved and in fair condition |
| **Security and access gates** | KLT I divided into 4 areas leased to separate operators. Each lessee with its own security wall | KLT II surrounded by a security wall with an access gate that can be secured |
| **Other buildings** | Offices and workshops on the area covered by the concession | Offices and workshops on the area covered by the concession |

*Source: CPCS Transcom International*

Due to government's decision to deploy the facility for fishing purposes KLT I & II were however taken out of the concession process and due to NPA being already greatly involved in the concessioning of larger port terminals at Apapa and Tin Can Island it did not constitute a priority in the following years. Consequently KLT I & II have not formally been concessioned as yet.

Since 2006 the economic environment of Lagos port has changed. It is therefore not the intention to follow the initial plan for Kirikiri and a new purpose must be found to maximise the use of the area for the benefit of NPA and other economic stakeholders.

## 1.3 Objectives and methodology

The main objective of the study is to establish the technical, economic and financial viability of KLT I & II as PPP projects by:

- Carrying out a primary review of the jetties;
- Making a *status quo* assessment which includes a commercial, technical and legal assessment of the existing facilities;
- Identifying and evaluating potential commercial activities and business options;
- Presenting a range of technical, legal and financial options for structuring the transaction(s).

The recommended options must include alternatives to a PPP transaction in case PPP schemes prove non viable.

In order to reach those objectives the following methodology was followed.

### *(a)* Technical, economic and financial assignments

- Prepare a relevant description of the technical parameters of the project concept;
- Identify and evaluate the potential commercial activities and business options which can be considered for Kirikiri;
- Review the project's commercial rationale, together with an analysis of the demand for and desirability of the project;
- Estimate the cost of the project;
- Assess the environmental and social constraints and impacts of the project;
- Forecast the project demand and revenues through a market analysis;
- Develop a preliminary financial model for the project;
- Carry out an initial screening of PPP options;
- Conduct a comprehensive risk analysis on the project;
- Provide preliminary recommendations for PPP implementation if applicable.

### *(b)* Legal assignments

- Evaluate the legal framework affecting Kirikiri and the proposed PPP;

- Define the policy context of the project concept;
- Review existing contractual arrangements currently in place with respect to the Kirikiri area;
- Define the actions and decisions to be taken by NPA and all governmental agencies involved in the project in order to comply with the applicable legal scheme (this will permit the development of the transaction strategy as far as the concessionaire and the concession are concerned);
- Draft the contractual headings of the concession agreement if applicable.

The ultimate purpose of these assignments is to establish potential development options for Kirikiri and put forward recommendations for the procurement strategy, the timetable and further project preparation.

# 2. PRIMARY REVIEW OF THE FACILITIES AT KLT I & II

## 2.1 Technical review

An exhaustive environmental audit of KLT I & II facilities was conducted by Labstaff Nigeria Ltd. Please refer to the environmental audit report for more details on the present condition of facilities.

### 2.1.1 Maritime infrastructure

- ***Channel***

The channel separating the two terminals has not been sufficiently dredged and is partially obstructed by the accumulation of sediments during stormy events in the rainy seasons.

The general proportions of the channel (4.5-5.0 m deep and about 150 m wide) do not allow it to accommodate large container ships or bulk carriers, but only small tanker vessels, fishing trawlers and barges. Those technical constraints have an impact on the business options to be taken into account as they rule out any development of the area into a full-fledged port facility.

- ***Navigation obstacles***

A number of shipwrecks lie at the bottom of the channel, making it complicated to navigate through it. Some decaying vessels have also been observed mooring along some portions of the quay walls. The revitalisation of the Kirikiri area will necessitate removing those obstacles.

***Fig. 7. ABANDONED VESSEL***

*Source: Labstaff Nigeria Ltd*

### 2.1.2 Docking facilities

- ***Quay walls***

Infrastructure was not maintained and is in poor condition. Due to the absence of cathodic protection the sheet piles are largely corroded and thinned. For the purpose of the present study and as a conservative measure the quays will be deemed out of usage. Prior to concessioning it is however highly recommended to have them appraised by a specialist firm so as to determine the exact scope of the works to be conducted to rehabilitate them.

***Fig. 8. SECTION OF CORRODED QUAY WALL***

*Source: Labstaff Nigeria Ltd*

- ***Reinforced concrete capping beam***

The capping beams are practically destroyed along all the quay walls. For the purpose of the present study and as a conservative measure they will be deemed out of usage.

- ***Buffers***

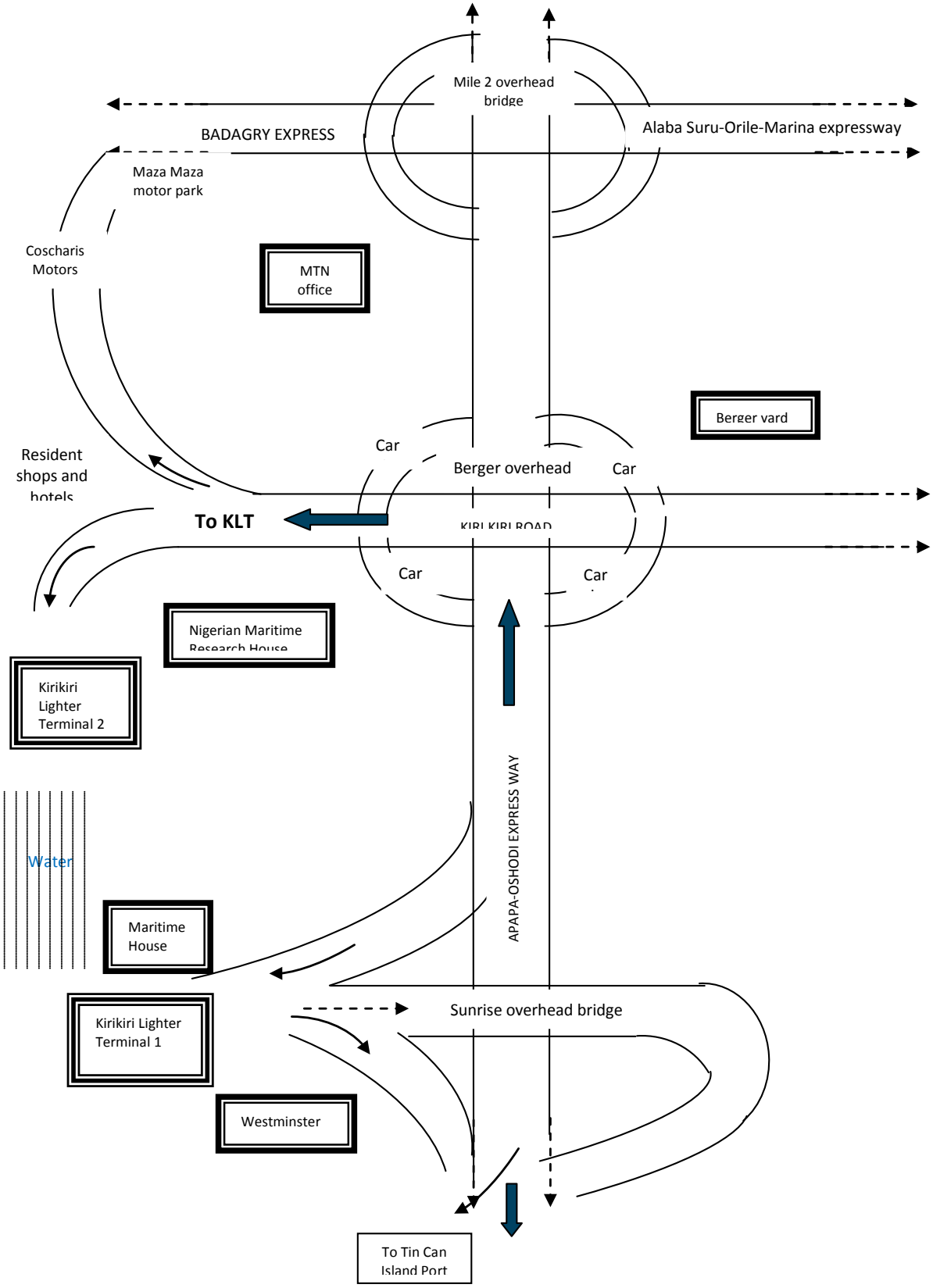
Practically no mooring buffers were left.

### 2.1.3 Superstructures and equipments

- ***Access roads***

Both terminals are properly connected to the general road network. Direct access roads are in good condition. Only one exit route through Capital Oil has some failed portions which will require additional repairs.

***Fig. 9. ACCESS ROUTES TO KLT I & II***




*Source: Labstaff Nigeria Ltd*

### ➢ *Fences*

Both terminals are fenced and gated. Fences appear to be in good condition although they generally require painting. Gates on KLT I seem corroded due to lack of protective coating.

### ➢ *Platforms*

Concrete slabs have suffered some damage due to tenants' activities and proprietary superstructures. They must be repaired and sometimes replaced.

### ➢ *Drainage systems*

Original systems are largely deteriorated and obstructed. They need cleaning and at some places renovating.

***Fig. 10. DRAINAGE SYSTEM***

*Source: Labstaff Nigeria Ltd*

### ➢ *Power supply*

General power supply infrastructure (transmission lines, transformer, etc.) can be observed onsite. However power supply is unavailable due to dispute over tariffs with power provider. At present each tenant therefore owns their own generator. That obviously impacts on the economic and financial profitability of businesses in the area.

### ➢ *Buildings*

Only one major building can be seen on KLT I (Maritime House). Some smaller provisional buildings and hangars were observed on KLT I & II. Those smaller structures can be restored, but the necessity to do so must be appraised in regard of the new organisation chosen for the terminals.

***Fig. 11. HANGAR ON KLT II***

*Source: Consultant*

➢ ***Water network***

Water distribution network, be it for drinking, industrial or fire fighting purposes, is non-existent.

➢ ***Waste water treatment***

Waste water is not properly treated. A new treatment system must be set up.

### 2.1.4 Organisations present onsite

The following public administrations had offices and/or buildings in KLT:

- Police;
- Customs;
- NPA administration.

## 2.2 Environmental and social review

### 2.2.1 Pollution

➢ ***Water pollution***

Some ship-generated waste can be observed in the channel and on the platforms, mainly in the form of rusting wrecks and scrap dumps taken out of the waters.

Due to the presence of tank farms and illegal settlements in the area solid waste (both industrial and domestic waste) can also be spotted floating in channel waters. The channel is also polluted by liquid waste (oily waste, bilge water, ship slops and sludge, etc.).

***Fig. 12. OILY WATER CAPTURED AT KLT I***

*Source: Labstaff Nigeria Ltd*

- ***Air pollution***

Air pollution in the Kirikiri area is high like in the rest of the Lagos area.

- ***Noise pollution***

Noise pollution in the Kirikiri area is high.

### 2.2.2 Safety

Some unsafe workplaces were observed when visiting the businesses operating on the terminals. Most tenants lacked personal protective equipment, emergency first aid equipment, rescue equipment, etc.

Some questions also remain around the determination and respect of safety distances around hazardous activities such as tank farms.

Generally speaking, there is a strong need for a relevant safety and hygiene management systems.

### 2.2.3 Social issues

Increasing fuel prices and piracy at sea have led to a decaying fishing industry and therefore to a gradual impoverishment of the local fishing community. Generally speaking, the decreasing level of activity at KLT limits the number of new low-skilled job opportunities in the area.

Some informal settlements have been observed on the port domain, sometimes right next to industrial facilities where hazardous activities are being conducted. The local population occupying the port domain generally suffers from poor living conditions.

## 2.3 Legal and institutional analysis

### 2.3.1 Legal framework for port and terminal development

The principal legislation regulating the establishment and operation of ports in Nigeria is the Nigerian Ports Authority Act, Chapter N126 Laws of the Federation of Nigeria, 2004 (NPA Act). The NPA Act establishes the Nigerian Ports Authority, which has amongst others the function of providing and operating necessary facilities in ports and maintaining, improving and regulating the use of ports in Nigeria.

Sections 8 (k), (l), (x) and 9 of the NPA Act empower NPA to engage the private sector in performing its statutory functions which include the supply, construction, manufacture, maintenance or repair of any property that is necessary for its purposes and operation or provision of any port facilities operated or provided by NPA. NPA may enter into agreements or establish joint venture companies with private sector participants or otherwise engage such participants as agents to perform its functions.

In similar vein, Section 1(1) of the Infrastructure Concession Regulatory Commission Act, 2005 (ICRC Act) provides a framework for Ministries, Departments and Agencies (MDA) of the Federal Government of Nigeria to enter into contracts or grant concessions to duly pre-qualified private sector participants for the financing, construction, operation or maintenance of any infrastructure that is financially viable or development facility of the Federal Government of Nigeria. The ICRC Act establishes the Infrastructure Concession Regulatory Commission which is charged with providing the regulatory and institutional framework by which MDAs of the Federal Government of Nigeria will effectively enter into PPPs for infrastructure development.

It is important to note that Section 25 of the NPA Act requires that the NPA obtain the approval of the President of Nigeria to alienate, mortgage, charge or lease any immovable property (e.g. land) vested in it or in respect of which a right of occupancy has been granted to it, for a period exceeding 5 years. NPA may therefore lease terminals to private entities for periods not exceeding 5 years. Where the approval given by the President for the concession of Apapa and Tin Can Island port terminals expressly included KLT I & II, such approval should suffice for NPA to grant a concession or lease of land at KLT I & II for a term exceeding 5 years.

### 2.3.2 Policy appraisal

The prevailing policy of the Federal Government with respect to infrastructure development is the utilisation of Public Private Partnerships. This focus on PPPs, in addition to the Federal Government's adoption of the landlord port model, has resulted in NPA being both port regulator and landlord with private companies engaged to operate and manage terminal operations.

KLT I & II are existing port terminals, which were initially scheduled among other port terminals for concession to private investors. NPA's ownership of KLT I & II derives from the

Federal Government's statutory acquisition on its behalf, of the respective parcels of land for purposes of port development. NPA's title is recorded and evidenced by Government Notice No. 901 in the Official Gazette No. 35, Vol. 63 of 8th July 1976 and Government Notice No. 836 in the Official Gazette No. 33, Vol. 63 of 1976.

Based on NPA's ownership of KLT I & II and power to engage the private sector to perform its statutory functions, NPA may enter into a PPP arrangement with any private sector participant for the development of the terminals.

### 2.3.3 Actions and decisions to be taken

The principal governmental agencies which will be involved in any PPP arrangement for the development of KLT I & II are NPA and ICRC. ICRC has issued the National Policy on Public-Private Partnerships (NP4) which provides the process and procedure to be adopted by Federal Government MDAs in carrying out all aspects of PPP project development and implementation.

Pursuant to the provisions of the NP4, a detailed investment appraisal is required to be conducted for any infrastructure project for which investment is needed. The engagement of external advisers to carry out the investment appraisal and prepare an OBC for the project is a key component of this process. Following approval of the Outline Business Case, procurement of the private sector participant is undertaken with the assistance (if required) of the ICRC PPP Resource Centre.

The procurement stage of the PPP process requires the preparation of an information memorandum and bid documentation, market consultation and conduct of a competitive and transparent procurement. Before the award of the contract, a Full Business Case (FBC) must be prepared and approved by the ICRC Board. Note that whatever PPP arrangement is proposed must be approved by the Federal Executive Council before the private sector participant is engaged.

### 2.3.4 Review of existing contractual arrangements at KLT I & II

Based on the documentation provided to us by NPA, we note that NPA has entered into several contractual arrangements with occupants of KLT I & II. These are in the form of leases, Temporary Occupation Licences (TOL) and agreements for the operation of customs bonded terminals. We were informed by NPA officials that pursuant to the Federal Government's proposed development of the terminals, none of the contracts are presently being renewed. However, following our review of the schedule of leases provided to us, we note that Royal Salt has been granted a 5-year lease which is to commence in 2013.

*(a)* **Leases**

The terms of most of the subsisting leases range from 2 to 5 years. There are however a couple of leases granted for a longer term. For instance, the lease granted to Daddo International Limited, a company engaged in storage and repair of fishing facilities, is for a term of 21 years. The 21-year lease term became effective on 29th April 2011 and will expire on 28th April 2032. Please refer to **Section 9.1 Appendix 1: Schedule of leases** for a complete list of leases on KLT I & II.

### *(b)* Temporary Occupation Licenses

Based on information provided to us, there are about 18 and 25 temporary occupation licensees at KLT I & II, respectively. The TOLs can *inter alia* be terminated by NPA giving the licensees a notice of 7 days or without any notice where the Federal Government directs immediate removal of the licensees or NPA requires the land occupied by the licensees for its use. Pursuant to the foregoing termination provisions, NPA's removal or relocation of the licensees at the KLT I & II should not pose any significant challenges in executing whatever PPP arrangement is adopted for the development of the terminals. Please refer to **Section 9.2 Appendix 2: Schedule of Temporary Occupation Licenses** for a complete list of TOLs on KLT I & II.

### *(c)* Agreements for operation of customs bonded terminal

The NPA has entered into the following agreements for the operation of customs bonded terminals:

- ***Agreement for the Operation of a Customs Bonded Terminal for the Transfer of Containers from the Container Terminal Apapa to Kirikiri/Ibafon between Nigerian Ports Authority and Maersk Line Nigeria Limited dated 8th October 2002***

The agreement is for a term of 5 years and commenced on 18th June 2001. We note that the agreement expired on 18th June 2006 and although there is no 'option to renew' clause provided in the agreement, it is uncertain whether the agreement has been renewed.

The parties agreed to execute a formal lease agreement for the bonded terminal with NPA's standard terms and conditions for lease agreements incorporated therein. NPA agreed to grant a lease of a 2.378 hectare paved site at KLT I (bonded terminal) to Maersk at an annual rent of NGN 6,845,000 subject to a review of the annual rent by NPA after 3 years.

NPA agreed to assist in obtaining the necessary permits from the Nigeria Customs Service (NCS) in facilitating the transfer of containers from the container terminal in Apapa and to deploy a maximum number of 4 personnel to the bonded terminal. Maersk is responsible for the movement of the containers from the ship-side at the container terminal in Apapa to the bonded terminal and in so doing, indemnifies NPA against all claims in respect of loss or damage to the containers in its custody. Maersk is required to insure each container it handles and its liability in respect to each container is not to exceed USD 100,000.

Revenue-sharing / Tariff provisions:

- Maersk is to collect all revenue/income generated under the agreement. Maersk is required to pay NGN 2,500 per 20' full container and NGN 3,500 per 40' full container to NPA (which represents 50% of NPA's current terminal delivery charge for services rendered by Maersk).
- Both parties are to share the revenue received on rent equally.
- Note that this phrase "revenue received on rent" is not defined and is therefore uncertain. This may lead to confusion regarding the parties' obligations.

- The applicable tariff is based on a modified version of NPA's existing tariff and the rent to be collected is in accordance with the prevailing tariff.

Assignment:

- There is a restriction on Maersk's right to assign – Maersk is not allowed to assign its rights or obligations under the agreement without the prior written consent of NPA.
- There is no corresponding obligation on the part of NPA. Therefore, NPA will not be restricted from assigning its interest in the agreement to a third party such as a concessionaire.

Termination:

The agreement can be terminated in the following instances:

- By mutual consent of both parties;
- By either party when the other party has defaulted in performing its obligations under the agreement;
- By a party when the other party:
  - Makes an assignment of the agreement or any right or obligation under it to creditors upon being adjudged as bankrupt or becoming insolvent;
  - Has a petition filed seeking its dissolution or liquidation;
  - Ceases to do business for any reason;
- By the occurrence of a force majeure event.

➢ ***Agreement for the Operation of a Customs Bonded Terminal for the Transfer of Containers from the Container Terminal Apapa to Kirikiri/Ibafon between Nigerian Ports Authority and P & O Nedlloyd Nigeria Limited dated 8th October 2002***

The agreement is for a term of 5 years and commenced on 8th June 2001. We note that this agreement expired on 8th June 2006.

NPA agreed to grant a lease of a 4.017 hectare paved site at KLT II (bonded terminal) to P & O Nedlloyd at an annual rent of NGN 10,042,500 subject to a review of the annual rent by NPA after 3 years. The terms of this agreement are identical with the terms of the agreement between NPA and Maersk Line Nigeria Limited except for the size, location and annual rent of the land leased.

➢ ***Agreement for the Operation of a Customs Bonded Terminal for the Transfer of Containers from the Container Terminal Apapa to Kirikiri/Ibafon between Nigerian Ports Authority and SDV Nigeria Limited dated 10th October 2002***

The agreement is for a term of 5 years and commenced on 8th June 2001. We note that this agreement expired on 8th June 2006.

NPA agreed to grant a lease of a 4.307 hectare paved site at KLT II (bonded terminal) to SDV for the operation of a customs bonded terminal for the transfer of containers from the container terminal in Apapa to Kirikiri/Ibafon. The terms of this agreement are also identical

with the terms of the agreements NPA entered into with Maersk Line Nigeria Limited and P & O Nedlloyd except for the size, location and annual rent of the land leased.

# 3. ELABORATION OF A TERMINAL LAYOUT SCENARIO

## 3.1 Introduction

### 3.1.1 Original master plan

According to maps in our possession, KLT I & II were originally designed as multi-purpose terminals, hence the stacking areas, sheds, wall fences, gate and administration block. Support services such as power generation, lighting, rainwater drainage and water treatment facilities were all part of that initial plan.

The channel was dredged at a depth of about 4.5 m and its shores were protected with sheet pile quay walls. It thus served the double purpose of draining storm water and allowing shallow draught vessels to berth.

### 3.1.2 Recent developments

The terminal layout has considerably evolved since 1976 as small-sized transformation units (salt, fluids), tank farms and fishery industries settled in the area.

Only container activities, which had just emerged as the new system for transporting general cargo and progressively came to occupy a part of KLT I and almost the whole of KLT II, seemed to match the initial purpose allocated to the terminals. Large shipowners and logistics groups such as Maersk, P & O, Nedlloyd and SDV have used KLT II for container storage; some have left due to uncertainty in tenure conditions and duration.

In 2004 a decision from then President Olusegun Obasanjo indicated that almost all of KLT I & II should be devoted to fishery activities, but that decision has remained without effect.

## 3.2 Demand assessment

### 3.2.1 Initial thoughts

General demand for industrial space in the Lagos area is very high, especially around the ports. As far as Kirikiri is concerned, a lot of businesses would be interested in being granted authorisation by NPA to occupy a plot in such a prime location. Taking into account the specificities of the Kirikiri area – most of all its connection to the sea – and the mission of NPA as regulator for ports and promoter of port activities in Nigeria, it was decided to only retain those potential activities which have a direct connection to the sea or bring an immediate benefit to existing port operations.

According to this basic selection principle, potential activities for KLT I & II are *a priori* as follows:

- General cargo;
- Dry cargo;
- Liquid bulk;
- Container traffic;

- Industrial activities;
- Fishery activities;
- Marine activities and support services;
- Truck terminal.

Some of those activities are already represented on the terminals, but have not been able to develop to their full extent due to the nature of KLT land tenure contracts, especially with regard to their short duration, which often does not provide sufficient comfort to allow tenants to heavily invest in the area.

Based on the documentation collected and the interviews conducted during the kick-off mission, some constraints and demands from the market can already be noted.

### 3.2.2 Existing KLT operators

- Existing KLT I industrial activities such as Royal Salt and the tank farms cannot reasonably be shut down or moved due to their importance and the investments made on their respective plot.
- Existing fishery activities, marine activities and other support services require a direct access to the sea and chances of finding a relocation option in Lagos are dim. Those activities must therefore be considered, all the more as it is the government's policy to promote the development of an active fishing industry in Nigeria in order to improve food security and reduce dependence on imported fish products.
- Container operators currently occupying part of KLT II would be interested in an extension of their plot.
- No formal demands have been identified for an extension of tank farm businesses on KLT I; given the observed growth figures for population and oil consumption in the region of Lagos, it is however safe to assume that those needs exist, though they are tempered by the perspective of new refineries coming up in Nigeria, which could significantly reduce demand for imported products.
- The development of oil and fuel storage and distribution activities has generated heavy congestion on the access road to KLT I, mostly due to tankers waiting on the road for their turn to load at one of the tank farms. That issue represents a daily burden for all activities present at KLT and should be taken into account when redesigning the terminals.

### 3.2.3 Apapa and TCIPC operators

Demand for additional space comes almost exclusively from container operators. Conversely there does not seem to be any demand from general cargo and dry cargo operators. That imbalance can be explained in different ways:

- General cargo represents a smaller share of overall traffic than containers and seems to be correctly handled in existing Apapa and TCIPC multi-purpose terminals; when space is lacking, operators of such terminals generally prefer to move containers out rather than general cargo, which is more difficult and costly to handle, as well as easier to steal than containerised cargo;

- Dry bulk requires heavy handling equipment and is therefore not adapted to double handling; current dry cargo traffic seems to be properly handled at Apapa;
- The sturdy development of off-dock terminals in the region of Lagos, almost all of which dedicated to container traffic, is a sign that there is need for additional container storage capacity outside Apapa and Tin Can Island. Please refer to **Section 4.3.2 Traffic and revenue projections** for more details.

## 3.3 Selection criteria

Long-term lease or concession contracts at Kirikiri might raise strong interest from a range of economic players with antagonistic goals. It was therefore deemed useful to establish a list of criteria in order to assist decision-makers' in their choice of business options for the terminals. Those criteria apply to both existing and future activities on the terminal.

### 3.3.1 Link with maritime activities

Selected activities should have a link with the sea as monitoring maritime activities is the core mission of the conceding authority. This criterion will assess how much the activity considered requires an access to the sea, in which case it should be given priority access to land in Kirikiri.

***Fig. 13. RATING SCALE – LINK WITH MARITIME ACTIVITIES***

| Grade | Description |
|---|---|
| + + | The activity considered cannot function without an access to the sea. |
| + | The activity considered would experience difficulties without an access to the sea. |
| 0 | The activity considered could function without an access to the sea, but would draw substantial benefits if granted one. |
| - | The activity considered could perfectly function without an access to the sea, but would draw some minor benefits if granted one. |
| - - | If granted an access to the sea, the activity considered would not even put it to use. |

*Source: Axelcium*

### 3.3.2 Benefit to current port activities

Selected activities should create value for existing port activities at the port of Lagos in terms of reduced traffic congestion, improved efficiency or boosted competitiveness and should in particular improve performance at TCIPC and Apapa.

***Fig. 14. RATING SCALE – BENEFIT TO CURRENT PORT ACTIVITIES***

| Grade | Description |
|---|---|
| + + | The activity considered could have very substantial benefits for current port activities. |
| + | The activity considered could have some benefits for current port activities. |
| 0 | The activity considered should have neither benefits for nor adverse impacts on current port activities. |
| - | The activity considered could have some adverse impacts on current port activities. |
| - - | The activity considered could have very substantial adverse impacts on current port activities. |

*Source: Axelcium*

### 3.3.3 Profitability for NPA

Selected activities should generate maximum profit for NPA, which will allow it to invest in new infrastructures and properly maintain the terminals.

***Fig. 15. RATING SCALE – PROFITABILITY FOR NPA***

| Grade | Description |
|---|---|
| + + | The activity considered could generate very substantial profits for NPA. |
| + | The activity considered could generate some profits for NPA. |
| 0 | The activity considered should be financially neutral for NPA. |
| - | The activity considered could have some adverse financial impacts for NPA. |
| - - | The activity considered could have very substantial adverse financial impacts for NPA. |

*Source: Axelcium*

### 3.3.4 Level of investment required

Selected activities should require minimum investments in terms of rehabilitating existing infrastructures or creating new ones, which should facilitate implementation and reduce delays before start of operations, especially if minimum investments are required from NPA.

***Fig. 16. RATING SCALE – LEVEL OF INVESTMENT REQUIRED***

| Grade | Description |
|---|---|
| + + | The activity considered should not require any significant investment from NPA. |
| + | The activity considered could require some minor investments from NPA. |
| 0 | The activity considered could require substantial investment but should not require any NPA contribution. |
| - | The activity considered could require substantial investments as well as some NPA contribution. |
| - - | The activity considered could require very substantial investments to be borne by NPA. |

*Source: Axelcium*

### 3.3.5 Social impact

Selected activities should generate maximum social benefits for the population living in the area, in terms of job creation, poverty alleviation, etc.

***Fig. 17. RATING SCALE – SOCIAL IMPACT***

| Grade | Description |
|---|---|
| + + | The activity considered could generate very substantial positive social impacts. |
| + | The activity considered could generate some positive social impacts. |
| 0 | The activity considered should have a neutral social impact. |
| - | The activity considered could generate some adverse social impacts. |
| - - | The activity considered could generate very substantial adverse social impacts. |

*Source: Axelcium*

### 3.3.6 Environmental impact

Selected activities should generate minimum adverse environmental impact in terms of land, air and water pollution, traffic etc., and should contribute to improving general environmental conditions of the area.

*Fig. 18. RATING SCALE – ENVIRONMENTAL IMPACT*

| Grade | Description |
|---|---|
| + + | The activity considered could generate very substantial positive environmental impacts. |
| + | The activity considered could generate some positive environmental impacts. |
| 0 | The activity considered should have a neutral environmental impact. |
| - | The activity considered could generate some adverse environmental impacts. |
| - - | The activity considered could generate very substantial adverse environmental impacts. |

*Source: Axelcium*

### 3.3.7 Optimisation of land usage

Selected activities should maximise the use of the Kirikiri area for the benefit of NPA and other economic stakeholders.

*Fig. 19. RATING SCALE – OPTIMISATION OF LAND USAGE*

| Grade | Description |
|---|---|
| + + | The activity considered could have a substantial positive impact on land usage. |
| + | The activity considered could have some positive impact on land usage. |
| 0 | The activity considered should have a neutral impact on land usage. |
| - | The activity considered could have some adverse impact on land usage. |
| - - | The activity considered could have a very substantial adverse impact on land usage. |

*Source: Axelcium*

### 3.3.8 Degree of immovability

This project is peculiar insofar as it requires an estimation of how much some activities which are currently present onsite cannot be moved due to technical, strategic, economic or social reasons. This criterion will assess to what extent this constraint is relevant to the activity considered.

***Fig. 20. RATING SCALE – DEGREE OF IMMOVABILITY***

| Grade | Description |
|---|---|
| + + | The activity considered cannot reasonably be moved. |
| + | The activity considered can be moved but this will generate substantial costs and/or strong resistance. |
| 0 | The activity considered can be moved but this will generate some costs and/or some resistance. |
| - | The activity considered can be moved relatively easily. |
| - - | The activity considered can be moved very easily. |

*Source: Axelcium*

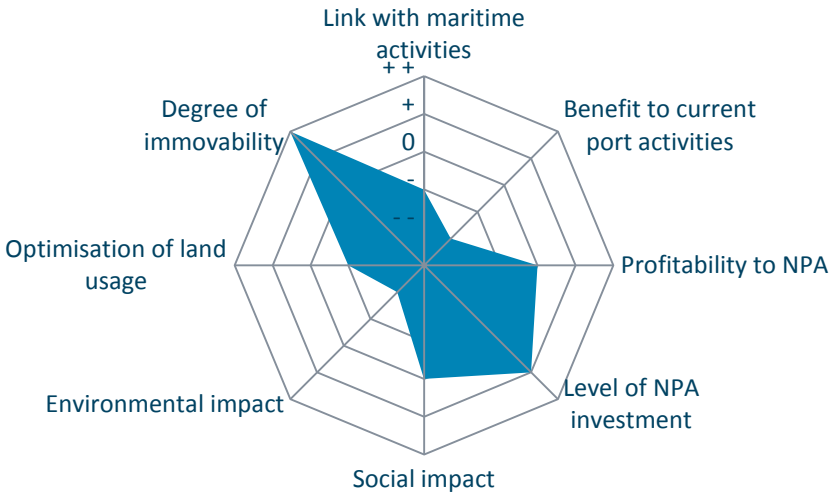
## 3.4 Evaluation of potential activities

Each potential activity previously identified has been evaluated according to the abovementioned criteria.

### 3.4.1 Industrial activities

Royal Salt Company, Obat Oil & Petroleum, Rahamaniyya Oil & Gas, Dee Jones Petroleum and Kris Oil Integrated Services have all made substantial investments in their respective operations on KLT I and will be hard to move. They run profitable businesses in strategic sectors since a number of years and can claim a legitimate presence on the premises.

***Fig. 21. EVALUATION OF INDUSTRIAL ACTIVITIES***




*Source: Axelcium*

Their respective plots will therefore be left unchanged in the recommended terminal layout scenario. Under certain conditions, they should be awarded long-term lease contracts providing them with sufficient comfort to pursue their development strategy.

Nonetheless tank farm activities generate safety issues as well as considerable truck commutes. They worsen congestion problems on access roads to the area, which represents a daily operational burden for all KLT tenants. Moreover government has plans to build three oil refineries, which could considerably dampen long-term growth prospects of tank farm businesses.

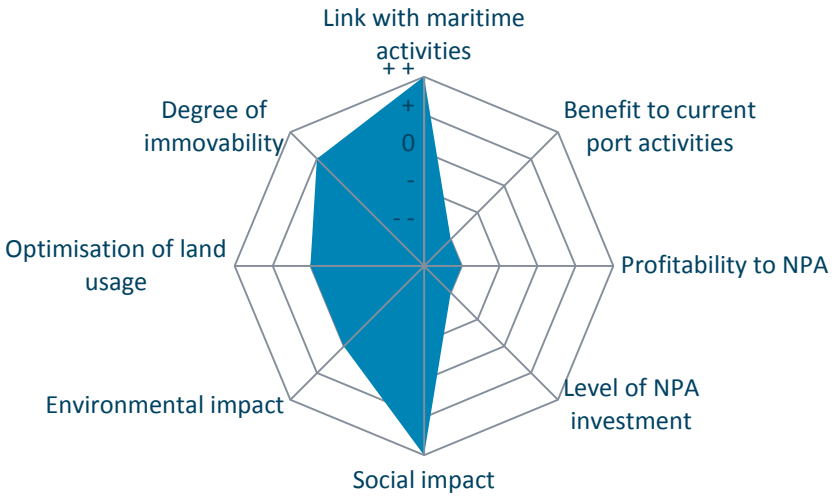
It is therefore NPA's policy not to expand the area dedicated to tank farms. This kind of activities should not be granted any additional space for geographical expansion on the terminal.

### 3.4.2 Fishery activities

Fishery activities have been present onsite for decades and can claim historical legitimacy in Kirikiri. The business has however suffered a major downturn in recent times due to rising fuel prices, piracy and competition from frozen imports. Lack of financial clout and space makes it hard for those small companies to structure and organise themselves and they do not bring any direct financial benefit to NPA.

At national level social and economic benefits are however much more important as the industry claims 10,000 workers and 500,000 indirect jobs nationwide.

***Fig. 22. EVALUATION OF FISHERY ACTIVITIES***



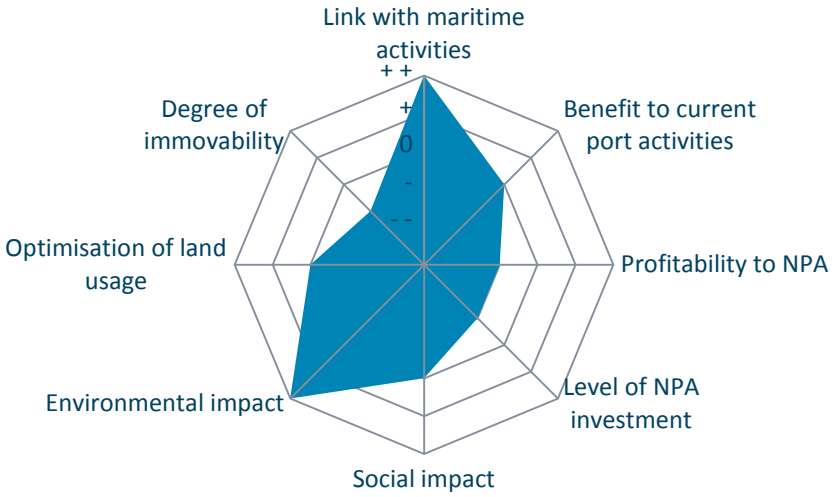

*Source: Axelcium*

If the new design of KLT I & II does not include any space dedicated to fishery activities, strong resistance can be anticipated from the local fishermen population, which could hamper the whole Kirikiri rehabilitation project. The recommended layout scenario will therefore retain fishery activities regrouped on an extended fishery terminal on KLT I.

### 3.4.3 Marine activities and support services

Those activities include small ship repair and maintenance activities, which will be included as part of the fishery terminal, as well as other activities such as underwater engineering, ship salvaging, etc.

***Fig. 23. EVALUATION OF MARINE ACTIVITIES AND SUPPORT SERVICES***



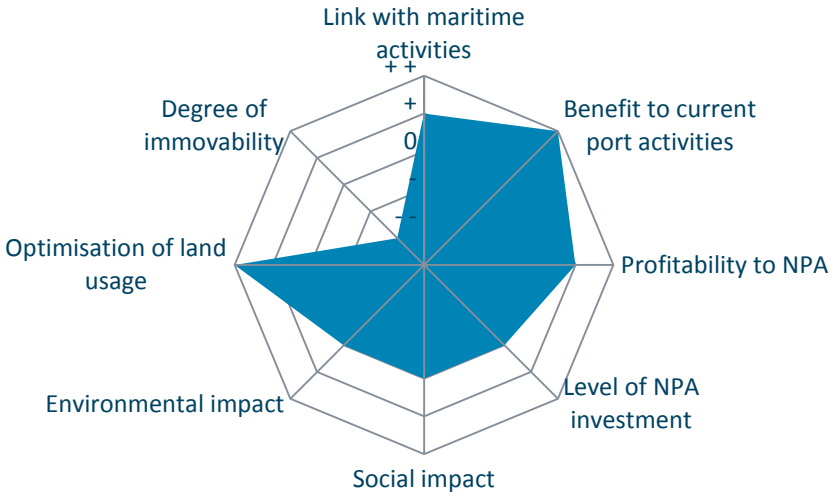

*Source: Axelcium*

Those activities do not require much space, but they require an access to the sea and therefore cannot be easily relocated. They bring environmental benefits as they contribute to clearing the channels of shipwrecks and improve the general condition of the ship fleet. The recommended layout scenario will therefore include space dedicated to such activities.

### 3.4.4 Container activities

It is widely acknowledged that the ports of Apapa and Tin Can Island have reached saturation. To some extent current limitations to maximum container throughput can however be lifted to the benefit of all economic players, KLT being part of the solution. Indeed KLT clearly has a role to play in providing more container storage area and thus relieving Apapa and TCIPC terminals. In that sense, they also maximise usage of the land.

***Fig. 24. EVALUATION OF CONTAINER ACTIVITIES***



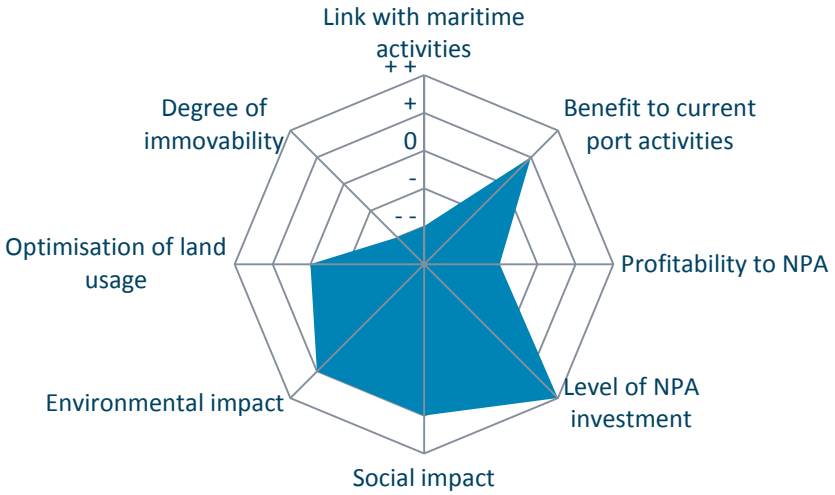

*Source: Axelcium*

Container activities will therefore be present on both KLT I & II in the recommended layout scenario.

### 3.4.5 Truck terminal

If container activities are also to be promoted in the Kirikiri area, there is strong need for a controlled truck parking area where trucks would have to wait before being called one by one to reach their respective loading or unloading destination, be it a tank farm or a container storage area. The truck park could also include repair and maintenance services for trucks as well as small catering stores for drivers, thus generating a substantial amount of jobs for the local population.

***Fig. 25. EVALUATION OF TRUCK TERMINAL***




*Source: Axelcium*

That activity does not require much infrastructure nor does it necessitate access to the sea. It can therefore be easily located behind the access road to KLT I and will thus be included in the recommended layout scenario.

## 3.5 Recommended layout scenario

Based on the demand assessment thereabove, a new layout scenario for KLT I & II was agreed on with NPA and ICRC. The parcelled structure of the envisaged layout reflects the fact that no single desired business unit can reach a sufficient level of traffic to justify occupying the entire terminals. On the basis of the multi-criteria analysis, the recommended layout aims at fairly balancing requirements from current tenants and demands generated by more general port congestion issues at Apapa and Tin Can Island, thereby maximising the future terminals' utility while satisfying the needs of all economic stakeholders.

On KLT I the layout scenario includes:

- A 1.7 hectare area dedicated to marine activities (underwater engineering, ship salvaging, disposal of shipwrecks, etc.):

The area dedicated to such activities, which are already present onsite, was expanded in order to account for additional needs created by the increased vessel traffic on the Kirikiri channel.

- A 4.2 hectare area dedicated to Royal Salt Ltd:

This plot was left unchanged.

- A 9.0 hectare area dedicated to a fishery terminal:

The area dedicated to fisheries on KLT I was doubled in surface, which will allow fishery businesses from KLT II to relocate their activities next to their peers and a limited number of additional similar-sized fisheries to be established onsite. The geographical regrouping of all fishery businesses next to each other on KLT I will provide them with the opportunity to set up shared facilities and rationalise their operations. The surface allocated to fisheries remains however modest compared to initial government plans to dedicate the whole Kirikiri area to the fishing community as the layout scenario takes into account the current state of the industry and its incapacity to support very large investments at present.

- A 3.0 hectare area dedicated to a truck terminal:

Such surface was deemed sufficient to accommodate about 250 trucks, which should somehow alleviate traffic on the terminal access roads and bring some relief to tenants.

- A 16.3 hectare area dedicated to container storage:

The largest portion of the terminal was allocated to containers, both because that activity is the only one able to generate sufficient cash to pay for the rehabilitation of the infrastructure and because it brings in the most benefits to general Lagos port operations. The sizing of the area was determined on the basis of the traffic forecasts. Please refer to **Section 4.3.2 Traffic and revenue projections** for more details.

- A 7.5 hectare area dedicated to existing tank farms businesses:

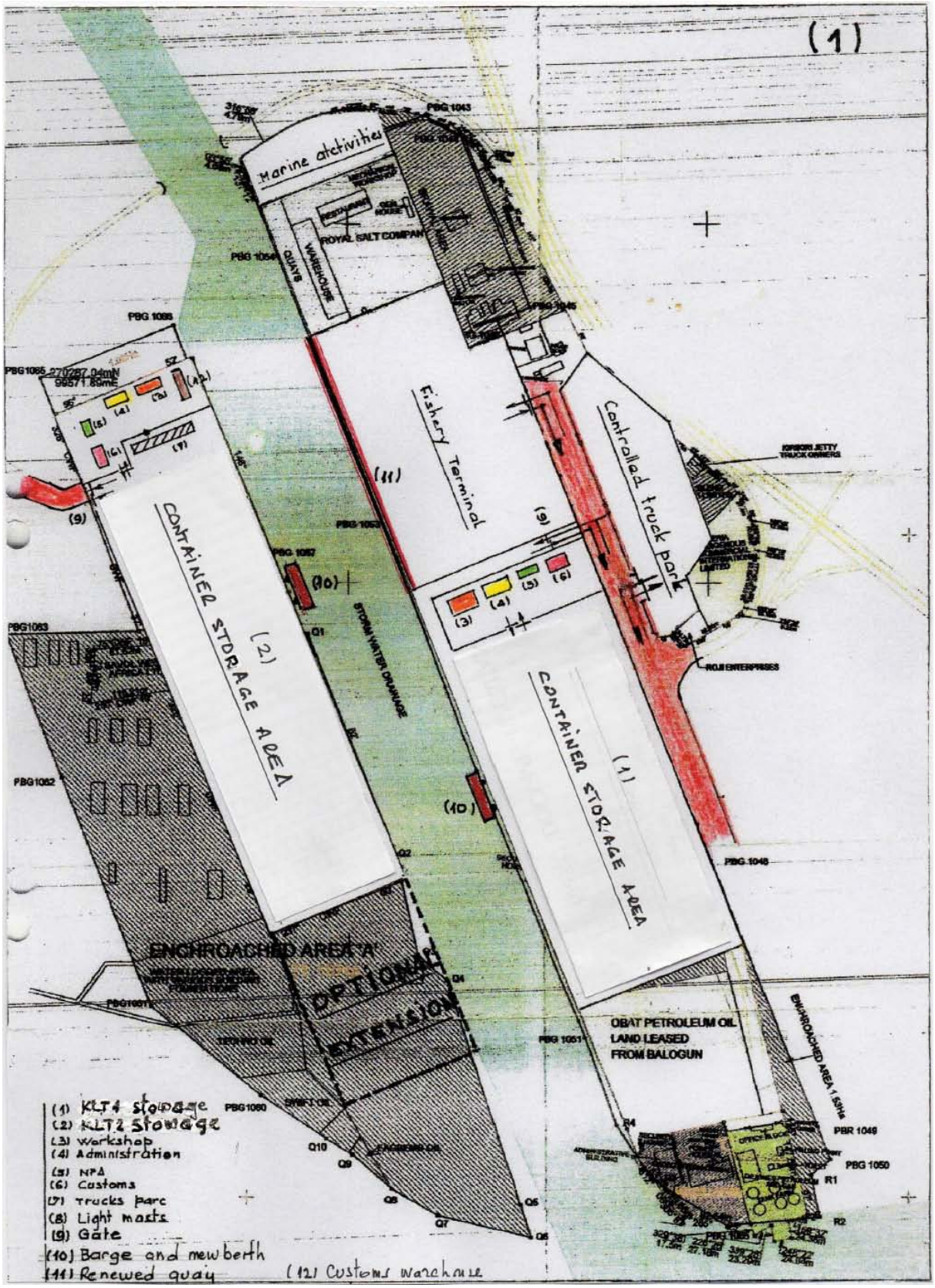
This plot was left unchanged.

On KLT II the layout scenario includes:

- A 15.7 hectare area dedicated to container storage;
- A 5.0 hectare area used as land reserve for potential extension of container activities.

Additionally the layout scenario includes space for administrative buildings (NPA, customs, etc.) on both sides of the channel.

***Fig. 26. RECOMMENDED LAYOUT SCENARIO***




*Source: Axelcium*

The recommended layout scenario must be understood as a basis on which the feasibility and bankability of the KLT rehabilitation and concessioning project will be assessed. It does not rule out financially marginal ancillary businesses being accommodated in the general scheme at a later stage, but provides a solid foundation for an Outline Business Case.

# 4. TECHNICAL APPRAISAL

## 4.1 Project concept

The recommended layout scenario includes a whole array of diverse activities. While there would be practical benefits in having only one concession relationship to manage for NPA, it seems neither appropriate nor feasible to have business units of such diverse nature operated under the same roof by a master concessionaire. Such a scheme would indeed face the following issues:

- No private entity boasts the necessary level of technical and managerial competence to run or monitor such diverse businesses in an efficient and reliable manner;
- The master concessionaire would bring an unnecessary additional layer of complexity to the structure, thus taking NPA further away from on-the-ground terminal operations and diluting responsibilities for the maintenance of the area and monitoring of operations;
- The master concessionaire's remuneration requirements would in the end represent an additional burden to be borne by economic stakeholders, with no obvious financial benefits to compensate for those additional costs;
- It is NPA's role as port sector regulator to arbitrate between conflicting objectives, for instance in terms of allocation of space between different business units, as opposed to leaving a profit-seeking private sector entity make such choices;
- Such a scheme would make it complicated for NPA to regulate cargo and container handling activities if their financials are diluted among unregulated activities at the master concessionaire level.

As a consequence, all activities envisaged in the recommended layout scenario must be appraised as separate entities.

Some of those activities relate to the delivery of a public service and as such fall under the scope of regulated activities whereby a profit-sharing mechanism must be put in place. The revenues, investments and operating costs of those activities must therefore be carefully assessed.

Conversely some of those businesses operate on a competitive market, are purely private ventures and as such only ought to have a landlord-tenant relationship with NPA, whereby NPA provides a space, collects a rent and ensures activities are conducted according to adequate operating standards. For the latter category, a basic technical appraisal is sufficient since NPA need not be involved in business operations.

## 4.2 Unregulated activities

### 4.2.1 Industrial activities

*(a)* **Royal Salt**

The only truly active non-oil-related industrial business in KLT is Royal Salt Ltd. The company basically imports salt in bulk from the international market *via* Apapa port, re-packages it

and sells it on the local and regional markets. Its activities generate traffic of about 400,000 tons per annum inwards and 350,000 tons per annum outwards.

Currently all of that traffic is handled by road, which represents about 150 truck commutes every day. According to the management itself, import traffic could easily be done by way of barges, which should make sense financially and could significantly improve the company's control over its supplies while taking half of its traffic off the road. That amount of traffic could be handled by one barge commuting once a day between Apapa and KLT. That option would however necessitate renovating the quay behind the company's plot and clearing it of barges currently mooring there, both of which Royal Salt Company cannot undertake alone.

Royal Salt currently pays a rent of NGN 1,071 per m² per annum, which if the recommended layout scenario is put to execution could generate revenues of about NGN 45 million per annum for NPA.

*(b)* **Tank farms**

Insofar as tank farm businesses will most certainly keep managing the number and capacity of their mooring posts according to their needs and without any operational or financial involvement from NPA, the level of tanker vessels traffic is of little relevance to NPA.

What really matters is the level of revenue NPA can draw from such activities, as well as the constraints and annoyances they generate on the access roads. While the latter will be dealt with *via* the creation of a truck terminal, the earlier largely depends on the rent NPA can charge. Based on the currently observed rental price of NGN 500 per m² per annum charged to tank farm businesses and the 7.5 hectare area they occupy in the recommended layout scenario, they could generate revenues of about NGN 38 million per annum for NPA.

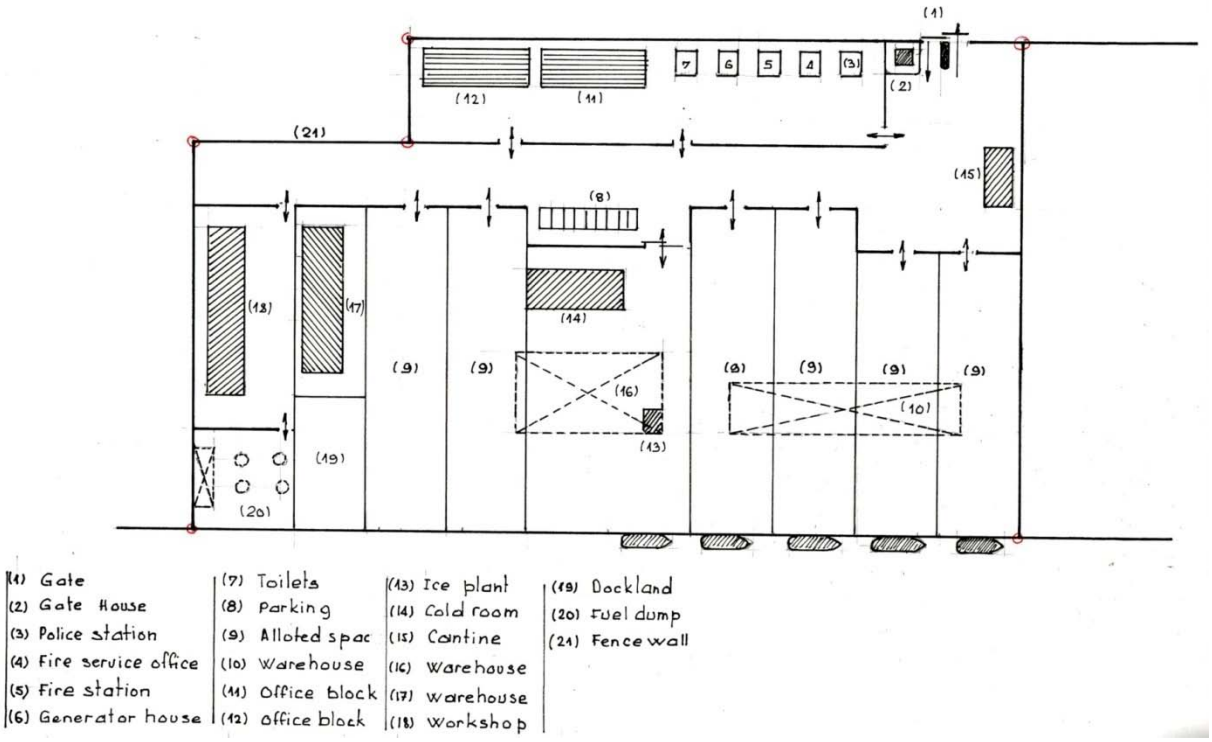
### 4.2.2 Fishery activities

According to the Nigerian Trawler Owners' Association (NITOA), fishery businesses in the Kirikiri area operate together a fleet of 136 vessels, landing a catch tonnage of 15,814 tonnes of fish and 6,375 tonnes of shrimps in 2011. Based on an estimated average catch of 20 tonnes per trip per trawler, this figure leads to an average number of 1,510 trawler trips per annum, which corresponds to a realistic figure of 8 trips per trawler per annum.

The currently observed average rental price for fishery activities in KLT I & II is about NGN 800 per m² per annum. Based on the 9.0 hectare area allocated to such activities in the recommended layout scenario, such activities could therefore generate revenues of about NGN 72 million per annum for NPA.

Based on the original plan designed by Royal Haskoning for the whole of KLT II, on documentation collected and on interviews with local trawler owners it was possible to roughly determine the industry's needs in terms of space, equipment and superstructures (ice plant, cold rooms, warehouses, workshop, office blocks, canteen, etc.). The result is presented below in the form of a draft fishery terminal layout.

***Fig. 27. DRAFT FISHERY TERMINAL LAYOUT***




*Source: Axelcium*

Most of the costs incurred should be borne by the future concessionaire of the fishery terminal, to the possible exception of costs relating to the rehabilitation of the corresponding 400 m of quay walls.

### 4.2.3 Marine activities and support services

In a similar way revenues drawn by NPA from marine activities and support services will most likely be in the form of a rent. Based on the currently observed NGN 3,182 per m² per annum Underwater Engineering pays to NPA in rent and the 1.7 hectare space such activities have been granted in the recommended layout scenario, such rent charges could generate revenues of about NGN 54 million per annum for NPA.

### 4.2.4 Truck terminal

In the recommended layout scenario, the truck terminal covers an area of 3.0 hectares. No reference rental price is available for that kind of activities as it is not yet present on KLT. Based on a rental price of NGN 1,000 per m² per annum, which is close to what Royal Salt currently pays for an unpaved area with no access to the channel, that activity could generate revenues of about NGN 30 million per annum for NPA.

## 4.3 Regulated container activities

### 4.3.1 Operational concept

The channel's depth does not allow large container ships to moor in Kirikiri. Therefore the container storage business unit as envisaged in the recommended layout scenario must be perceived as a support activity to general container activities on main port terminals, most of all at Tin Can Island. A portion of the laden container traffic discharged on Tin Can Island terminals would be immediately transferred by barge to Kirikiri, while empty containers stored at Kirikiri would be loaded on the barges for the way back to Tin Can Island to be lifted there onto container vessels leaving the port.

That concept does not exclude laden export containerised traffic from transiting *via* KLT I & II, nor does it rule out the possibility for the future Kirikiri terminal to accommodate more specific types of traffic such as LASH barges. However demand for such traffic appears as marginal and its eventual presence or absence in the final scheme has little impact on the technical, legal and financial feasibility of the general Kirikiri rehabilitation and concessioning project.

### 4.3.2 Traffic and revenue projections

#### *(a)* Foreword

The Kirikiri project is very unusual insofar as to a large extent the dimensioning of the terminal is not determined by traffic demand. In fact unmet demand for imported products in the region of Lagos is very high, as illustrated by the following observed phenomena on main port terminals:

- Very long vessel waiting times at Lagos port;
- Very high occupation of mooring posts;
- Very high current price levels for general consumer goods;
- Significant proportion of imported traffic transiting *via* the port of Cotonou although ultimately destined to the Nigerian market (estimated at 878,000 tons in 2008).

Demand for imported containerised products is even likely to grow further in the coming years as all demographic and economic indicators point towards fast-pace growth: the city of Lagos is projected to become the third biggest urban conurbation on the planet by the year 2015, while the Nigerian economy is expected to remain one of the fastest-growing economies on the African continent. This general trend will also naturally increase the number of empty containers to be re-exported, thereby putting further strain on Lagos port infrastructures.

Rather than lack of demand, it is therefore technical capacity constraints such as availability of storage space, availability of mooring posts, maximum capacity of loading and unloading equipment and maximum capacity of handling equipment which will limit traffic increase in Lagos port.

### *(a)* Current limitations to traffic increase at Lagos port

Any container traffic must come from one of the existing port terminals in Tin Can Island or Apapa, to the exception of the marginal container traffic generated by LASH carriers. In other words assessing container traffic in KLT necessitates some thinking on the organisation of Lagos port as a whole, which makes the appreciation of such traffic an uneasy task.

Market knowledge indicates that an efficient West African container terminal equipped with RTGs and with normal dwell times can handle up to 25,000 TEU per hectare per annum. Tin Can Island Port has approximately 42 hectares exclusively dedicated to container traffic and, thanks to the reforms embarked upon in the last decade, is relatively well maintained and equipped; it should thus be able to handle close to 1,000,000 TEU per annum yet actual traffic is only about 625,000 TEU per annum, which it is actually not able to handle itself as most operators have recourse to off-dock terminals.

At first sight it seems that the abnormally long dwell time of laden import containers (22 days on average) and empty export containers (25 days on average) is the main cause for such low operational performance. However a closer look reveals that the main constraint on port operations is actually congestion on port access roads, which prevents containers from exiting the port and therefore creates premature saturation of the terminals.

Indeed if container dwell times were the main issue, off-dock terminals would thwart its negative effects by providing additional storage space for idle containers. Yet for instance Tin Can Island Container Terminal (TICT), operated as a consortium of France's Bolloré Africa Logistics and China's China Merchants, shows sub-optimal performance in spite of Bolloré's three inland off-dock terminals, which perfectly illustrates the limits of such an approach. In reality, since those off-dock terminals are linked to the main terminals *via* the same congested roads, they cannot improve evacuation of containers.

On the contrary KLT can be reached from Tin Can Island and Apapa by sea, which should allow excess containers to be scooped out of the main terminals bypassing the road, thus reducing congestion and improving general port performance. KLT can subsequently behave as an extension of existing terminals, thus allowing them to handle more traffic provided necessary investments are made to increase capacity.

### *(b)* Traffic assessment

#### ➢ *Methodology*

All calculations are based on the slot method, which is recommended by the United Nations Commission for Trade and Development (UNCTAD) and allows for an evaluation of future container flows according to a number of parameters:

T = S * 365 * C1 / (D * C2)

Whereby:

- T is the total container traffic per annum in TEU;
- S is the number of slots available on the terminal;
- D is the average container dwell time in days;
- C1 is the stowage ratio;

- C2 is the peak factor.

The methodology used to elaborate traffic forecasts is based on an assessment of the number of containers to be transferred from Tin Can Island to KLT in order to reach normal operational conditions on the main terminals (i.e. ending overuse of the facilities). While some additional traffic could be potentially generated by LASH carriers and/or Apapa terminals, it was conservatively decided to not take such traffic into account due to its relative insignificance and the uncertainty around it.

### ➢ *Initial traffic*

In order to assess initial traffic, the formula above was applied to Tin Can Island's most productive container terminal TICT in two different configurations:

- its actual configuration, with extra slots artificially created at off-dock terminals, on additional storage layers as well as on the quay platforms themselves;
- an optimal configuration, whereby the number of slots would actually correspond to the surface area available on the terminal.

The difference between the two traffic figures was considered as the number of containers which should be transferred to KLT in order for TICT to function properly and to comply with best international standards in port management. The initial number of containers to be transferred from TICT to KLT was thus estimated at 157,923 TEU.

***Fig. 28. INITIAL TRAFFIC ASSESSMENT – CASE OF TICT***

| | Parameters (initial value) | TICT (actual) | TICT (optimal) | To be transferred to KLT* |
|---|---|---|---|---|
| Laden imports | Peak factor | 1,0 | 1,2 | |
| | Stowage ratio | 0,9 | 0,8 | |
| | Number of slots | 13 800 | 9 500 | |
| | Average dwell time | 22,0 | 22,0 | |
| | **Annual traffic (TEU)** | **206 059** | **105 076** | **100 983** |
| Laden exports | Peak factor | 1,1 | 1,1 | |
| | Stowage ratio | 0,8 | 0,8 | |
| | Number of slots | 700 | 530 | |
| | Average dwell time | 10,0 | 10,0 | |
| | **Annual traffic (TEU)** | **18 582** | **14 069** | **4 513** |
| Empty exports | Peak factor | 1,1 | 1,1 | |
| | Stowage ratio | 0,8 | 0,9 | |
| | Number of slots | 14 500 | 8 500 | |
| | Average dwell time | 25,0 | 25,0 | |
| | **Annual traffic (TEU)** | **153 964** | **101 536** | **52 427** |
| | **Total annual traffic (TEU)** | **378 605** | **220 681** | **157 923** |

* The proportion of laden import, laden export and empty export traffic will be adjusted to reflect a more balanced approach at KLT. Notably KLT will most likely not handle laden exports.

*Source: Axelcium*

That figure was then extrapolated to Tin Can Island as a whole, leading to an estimated initial container traffic of 263,206 TEU at KLT.

### ➢ *Low Case*

In the Low Case the only growth captured by main Tin Can Island terminals as well as KLT are due to the reduction in average container dwell times, which accelerates the rolling of containers on the terminals and thus improves throughput figures. That case does not require much investment on the main terminals as it consists in a mere reallocation of traffic.

That scenario leads to an estimated container traffic of 387,708 TEU in 2027.

➢ ***High Case***

In the High Case KLT behaves as an extension of main Tin Can Island terminals and allows them to finally capture the growth they were so far not able to handle due to capacity constraints. That case assumes the realisation of quite heavy investments on the main terminals in order to handle such additional traffic (gantry cranes, reinforcement of quay walls, etc.).

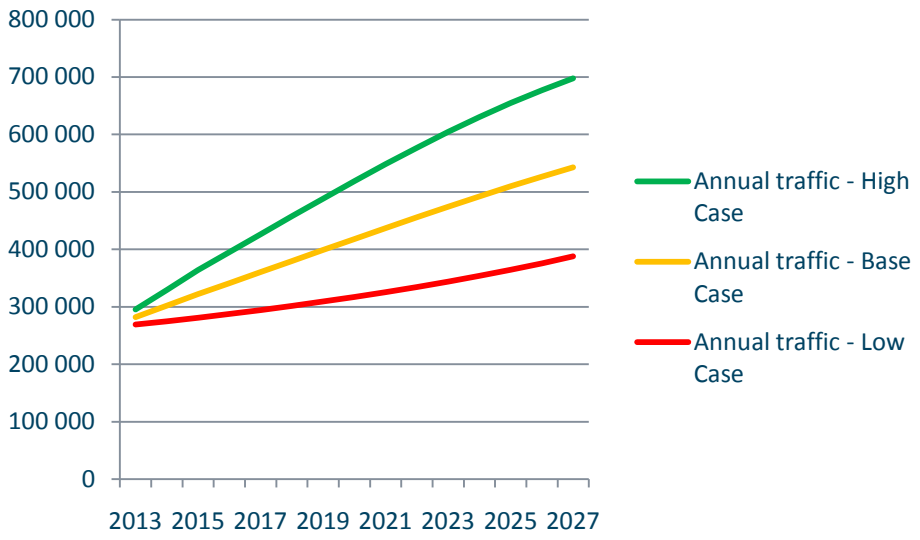
That scenario leads to an estimated container traffic of 697,572 TEU in 2027.

➢ ***Base Case***

The Base Case is constructed as an average of the Low Case and the High Case.

That scenario leads to an estimated container traffic of 542,640 TEU in 2027.

***Fig. 29. CONTAINER TRAFFIC FORECASTS (TEU)***




*Source: Axelcium*

*(c)* **Tariff setting**

The below tariff schedule used to elaborate revenue projections from container operations is based on actual prices practiced by off-dock terminal operators in the region of Lagos. It is divided in two categories:

- A handling charge per container, based on the type of the container (20' or 40', laden or empty), on which a conservative 30% discount was applied;

- A storage charge per TEU, based on the number of storage days and the type of TEU (laden or empty).

***Fig. 30. TARIFF SCHEDULE – HANDLING CHARGE***

| Handling (per container) | Base tariff | % Base tariff | KLT |
|---|---|---|---|
| 20' - Laden imports | 41 000 NGN | 70,0% | 28 700 NGN |
| 40' - Laden imports | 68 000 NGN | 70,0% | 47 600 NGN |
| 20' - Empty exports | 20 500 NGN | 70,0% | 14 350 NGN |
| 40' - Empty exports | 34 000 NGN | 70,0% | 23 800 NGN |

*Source: Axelcium*

***Fig. 31. TARIFF SCHEDULE – STORAGE CHARGE***

| Storage (per TEU) | | | |
|---|---|---|---|
| Laden | | Empty | |
| 0 days | to 3 days | 0 days | to 3 days |
| 0 NGN | | 0 NGN | |
| 4 days | to 14 days | 4 days | to 14 days |
| 1 500 NGN | | 750 NGN | |
| Over 14 days | | Over 14 days | |
| 3 500 NGN | | 1 750 NGN | |

*Source: Axelcium*

*(d)* **Revenue projections**

The level of revenues generated for NPA by container activities largely depends on the scope of the concession and the chosen structuring option. Please refer to **Section 7. Bankability assessment** for more details.

### 4.3.3 Technical options and key technical parameters

*(a)* **Stacking area**

The area dedicated to container activities in the recommended layout scenario represents 16.3 hectares on KLT I and 15.7 hectares on KLT II. On that surface the following works must be conducted:

- Site cleaning;
- Rehabilitation of stacking area (an estimated 15% of the surface is damaged);
- Construction of an additional 5.0 hectares of stacking area;
- Refurbishment of 2,240 m of gutters;
- Installation of 15 lighting masts;
- Installation of electrical network;
- Installation of water network;
- Construction of 2,100 m of block wall fences;

- Installation of two 200 m-long entry/exit gates.

### *(b)* Superstructures

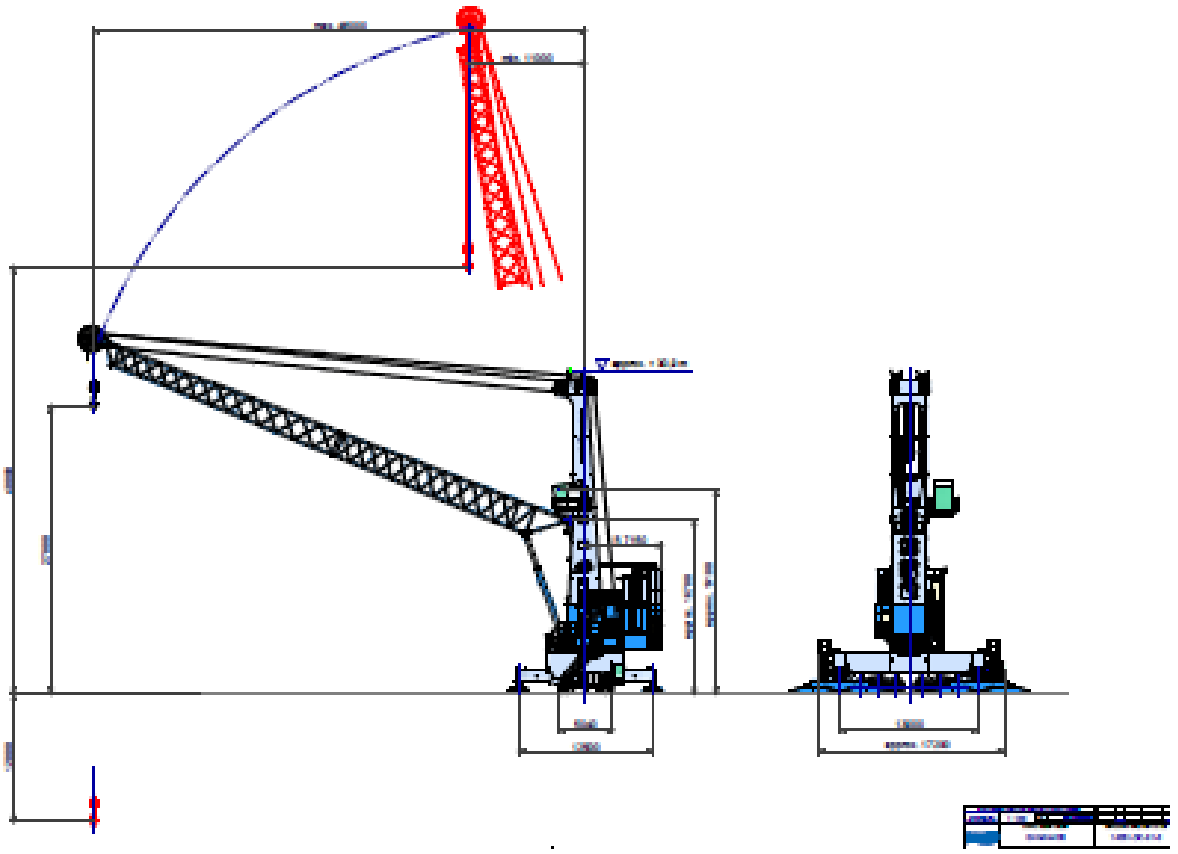
Several superstructures and buildings must also be set up to accommodate all stakeholders:

- Management office buildings: 100 m² on KLT I and 700 m² on KLT II;
- Customs office buildings: 400 m² on KLT I and 400 m² on KLT II;
- NPA office buildings: 200 m² on KLT I and 200 m² on KLT II;
- Mechanical workshops: 800 m² on KLT I and 800 m² on KLT II;
- Refectory/locker rooms: 200 m² on KLT I and 200 m² on KLT II;
- Generator houses: 150 m² on KLT I and 150 m² on KLT II.

### *(c)* Mooring posts

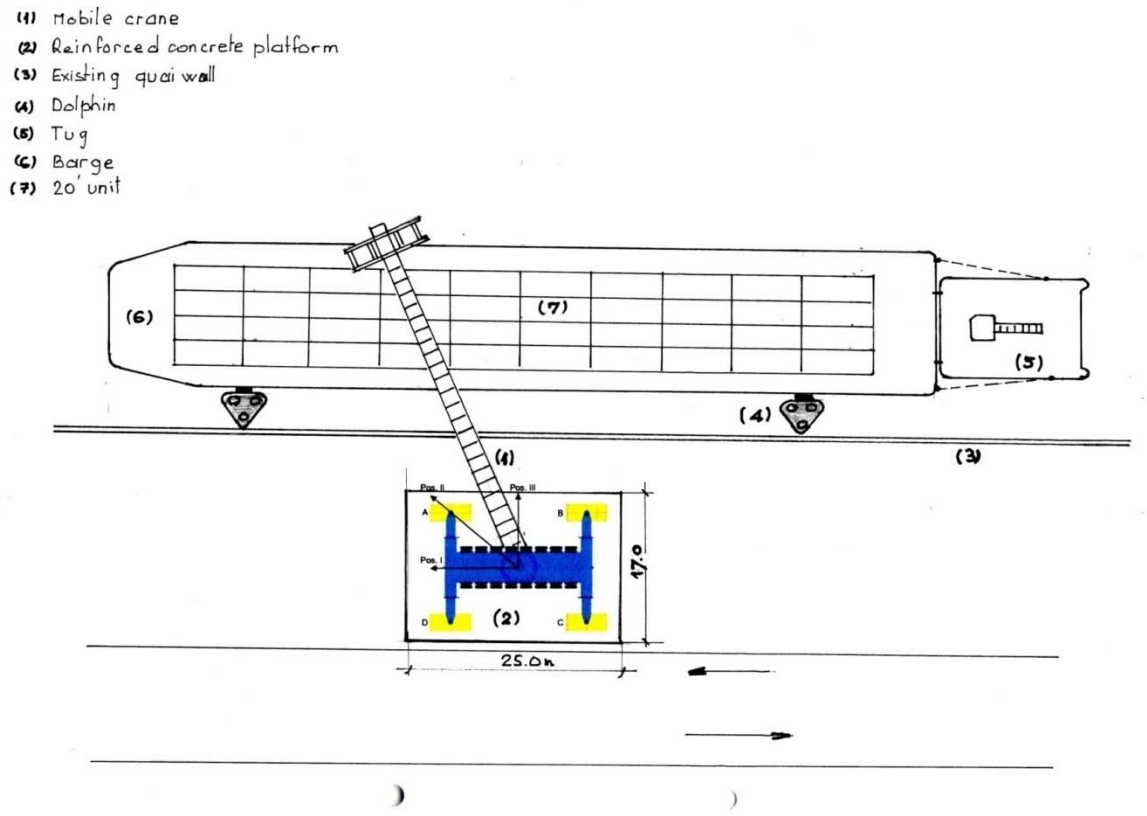
The transfer of containers from Tin Can Island to KLT will necessitate an initial number of two mooring posts, i.e. one on each side of the channel. Each mooring post will require the rehabilitation of a minimum of 70 m of quay wall. Mooring posts should be equipped with Gottwald HMK 4x06 mobile cranes with a handling capacity of 70,000 movements per annum to be installed on reinforced concrete platforms in order to minimise investments costs. One spare twin lift spreader should also be included for every two cranes in operation.

***Fig. 32. GOTTWALD HMK 4X06 CRANE***



*Source: Axelcium*

***Fig. 33. MOORING POST FOR CONTAINER BARGES AT KLT***




*Source: Axelcium*

The number of mooring posts might soon become the main constraint to the development of barge traffic at KLT. While there is sufficient space available on KLT to increase the number of mooring posts as necessary, the availability of space on main Tin Can Island terminals might become an issue as the level of traffic to be transferred rises. In order to overcome that problem it was consequently envisaged to double the number of mobile cranes allocated to each mooring post before opening a new one. This would allow for an increase in mooring posts' handling capacity from 70,000 to 100,000 movements per annum while minimising the investment in rehabilitation of quay walls.

*(d)* **Barges**

The initial fleet used for the transfer of containers from Tin Can Island to KLT should comprise three barges with a transport capacity of 100 TEU. Given the forecasted usage level of those barges, each barge should be accompanied by a tugboat.

***Fig. 34. CONTAINER BARGE WITH TUGBOAT***

*Source: Axelcium*

The number of barges must be properly calibrated to the handling capacity of the terminal equipment. A number of possible configurations were tested, the outcome of which was that the number of barges should be at least equal to the number of cranes installed on the terminal in order to ensure continuity of service.

*(e)* **Container transportation and handling equipment**

The terminal should be equipped with modern container transportation and handling equipment:

- Tugmasters: 3.5 per crane;

***Fig. 35. TUGMASTER***

*Source: Axelcium*

- 40’ container trailers: 1 per tugmaster and per crane;

- 40' container trailer

*Source: Axelcium*

- 45t reach stackers with a capacity of 45,000 movements per annum (4 movements required per laden import container handled);

***Fig. 36. 45T REACH STACKER***

*Source: Axelcium*

- 16t forklifts with a capacity of 40,000 movements per annum (2.2 movements required per laden import container handled).

***Fig. 37. 16T FORKLIFT***

*Source: Axelcium*

### *(f)* Other equipment

Terminal operations will require numerous additional equipments, such as:

- Tanker trucks (for crane and handling equipment refuelling): 2;
- Mobile workshop trucks: 2;
- Vans: 1 for every 150,000 TEU handled;

- Pick-up vehicles: 1 for every 60,000 TEU handled;
- Light vehicles: 1 for every 30,000 TEU handled;
- Maintenance tools and equipment: 2 sets;
- 500 kVA diesel generators: 2;
- 100 kVA diesel generators: 2;
- IT system and equipment: 2 sets.

Please refer to **Section 9.3 Appendix 3: Schedule of Capex** for details on the investment, maintenance and operation costs associated with all of the above infrastructure, superstructure and equipment items.

*(g)* **Staff**

Terminal operations will necessitate a complete team of staff. Each position was individually assessed in terms of number of corresponding staff (fixed or variable) and related salary package. The list of staff is presented in the table below.

## *Fig. 38. STAFF*

| Position | FTE | Salary package per FTE p.a. (EUR) | Salary package per FTE p.a. (NGN) | Comment |
|---|---|---|---|---|
| **Head office** | | | | |
| General Manager | 1,0 | 210 181 | 43 000 000 | Fixed |
| Operations Manager | 1,0 | 41 213 | 8 431 675 | Fixed |
| Secretary | 2,0 | 22 099 | 4 521 111 | Fixed |
| Driver | 2,0 | 11 682 | 2 389 939 | Fixed |
| **Finance, accounting and administration** | | | | |
| Chief Accountant | 1,0 | 33 788 | 6 912 520 | Fixed |
| Accountant | 1,0 | 22 099 | 4 521 111 | Fixed |
| Administrative Manager | 1,0 | 22 798 | 4 664 148 | Fixed |
| Invoicing Manager | 2,0 | 20 278 | 4 148 525 | Fixed |
| Import Delivery Manager | 2,0 | 19 421 | 3 973 326 | Fixed |
| Delivery Clerk | 2,0 | 9 178 | 1 877 659 | Fixed |
| Legal Advisor | 1,0 | 33 788 | 6 912 520 | Fixed |
| Claim Manager | 1,0 | 33 788 | 6 912 520 | Fixed |
| Safety/Security Officer | 1,0 | 33 788 | 6 912 523 | Fixed |
| **IT/Data** | | | | |
| Data/Tracking Manager | 1,0 | 33 788 | 6 912 523 | Fixed |
| Chef de salle | 1,0 | 19 421 | 3 973 326 | Fixed |
| Yard Planning Clerk | 1,0 | 11 344 | 2 320 857 | Fixed |
| Data Entry Clerk | 80 000 Con/FTE | 11 344 | 2 320 857 | 1,0 for every 80.000 containers |
| Delivery Clerk | 80 000 Con/FTE | 9 089 | 1 859 515 | 1,0 for every 80.000 containers |
| Empty Pole Assistant Manager | 100 000 Con/FTE | 19 007 | 3 888 589 | 1,0 for every 100.000 containers |
| Gate Control Clerk | 9,0 | 10 125 | 2 071 517 | 3,0 per gate |
| **Yard operations** | | | | |
| Assistant Operations Manager | 1,0 | 19 421 | 3 973 326 | Fixed |
| Yard Manager | 4,0 | 15 502 | 3 171 429 | Fixed |
| Tally Clerk | 1,5/RS & FL | 9 178 | 1 877 659 | 1,5 per reach stacker and forklift |
| Plant Assistant Manager | 2,0 | 19 421 | 3 973 326 | Fixed |
| Reach Stacker Operator | 2,5/RS | 11 344 | 2 320 857 | 2,5 per reach stacker |
| Forklift Operator | 2,5/FL | 9 178 | 1 877 659 | 2,5 per forklift |
| Tugmaster operator | 2,5/Tugmaster | 9 178 | 1 877 659 | 2,5 per tugmaster |
| **Shipping** | | | | |
| Shipping Manager | 1,0 | 33 788 | 6 912 520 | Fixed |
| Assistant Shipping Manager | 2,0 | 19 421 | 3 973 326 | Fixed |
| Ship Planning Clerk | 2,0 | 11 344 | 2 320 857 | Fixed |
| Captain | 2,5/Tug | 22 798 | 4 664 148 | 2,5 per tug |
| Executive Officer | 2,5/Tug | 19 421 | 3 973 326 | 2,5 per tug |
| Mechanical Engineer | 2,5/Tug | 11 861 | 2 426 646 | 2,5 per tug |
| Mechanic | 2,5/Tug | 9 848 | 2 014 699 | 2,5 per tug |
| Seaman | 2,5/Tug | 9 089 | 1 859 515 | 2,5 per tug |
| Crane Operator | 5,0/Crane | 10 855 | 2 220 857 | 5,0 per crane |
| **Workshop** | | | | |
| Workshop Manager | 1,0 | 22 798 | 4 664 148 | Fixed |
| Workshop Assistant Manager | 1,0 | 19 007 | 3 888 589 | Fixed |
| Workshop Procurement Manager | 1,0 | 19 007 | 3 888 589 | Fixed |
| Store Keeper | 2,0 | 11 344 | 2 320 857 | Fixed |
| Driver | 2,0 | 11 344 | 2 320 857 | Fixed |
| Mechanical Engineer | 1,0 | 11 861 | 2 426 646 | Fixed |
| Mechanic | 0,10/Machine | 9 848 | 2 014 699 | 1,0 for every 10 machines |
| Hydraulic Engineer | 0,04/Machine | 11 344 | 2 320 857 | 1,0 for every 25 machines |
| Boiler Maker | 1,0 | 9 089 | 1 859 515 | Fixed |
| Electrician | 0,04/Machine | 10 003 | 2 046 539 | 1,0 for every 25 machines |
| Welder | 1,0 | 11 861 | 2 426 646 | Fixed |
| Labourer | 0,07/Machine | 6 645 | 1 359 515 | 1,0 for every 15 machines |
| **Security** | | | | |
| Security Guard | 30,0 | 6 645 | 1 359 515 | Fixed |

*Source: Axelcium*

### *(h)* Overhead costs

Terminal operations also generate a number of other investment and operating costs, which are presented in the table below.

***Fig. 39. OVERHEAD COSTS***

| Overhead costs | Value in EUR or p.c. | Contingency | Value in NGN after contingency or p.c. |
|---|---|---|---|
| IT system & equipment | 25 000 | 0,0% | 5 114 650 |
| Telecommunications | 50 000 | 0,0% | 10 229 300 |
| Office supplies and stationery | 20 000 | 0,0% | 4 091 720 |
| Miscellaneous fees | 30 000 | 0,0% | 6 137 580 |
| Damages and litigations (% of turnover) | 1,00% | | |
| Civil liability insurance - First tier (% of turnover) | 0,95% | | |
| Civil liability insurance - Second tier (% of turnover) | 0,30% | | |
| Property insurance - Equipment (‰ of value) | 1,00% | | |
| Property Insurance - Buildings (‰ of value) | 0,28% | | |

*Source: Axelcium*

### *(i)* Project schedule

Given the limited scope of the works to be conducted on KLT, which consists for the most part in a rehabilitation and improvement of existing facilities, a construction period of one year only was planned. An operating period of 15 years was deemed sufficient to recoup the investment made by the concessionaire, which brings the total duration of the project to 16 years. That relatively short duration should allow NPA to swiftly adapt the orientation of the Kirikiri terminals to potential changes in the organisation of the container business in the Lagos area.

## 4.4 Environmental and social impact assessment

This section aims at providing an initial view of the impact the recommended layout scenario and the technical options might have on the environmental and social situation of the Kirikiri area.

### 4.4.1 Pollution

The envisaged refurbishment of the terminal should have a globally positive impact on pollution levels at Kirikiri.

Vessel traffic will most certainly largely increase, notably due to container barges, which could generate additional ship-generated spills and waste in the channel. On the other hand, the barging activity will require NPA to conduct an initial clean-up and thereafter a regular maintenance of the channel, including dredging, removal of rusting shipwrecks and collection of the largest solid waste items. Those actions should in the end leave the channel in a better position than it now is.

Air and noise pollution are to a large extent linked to the level of traffic, which could potentially increase as the area regains impetus and economic activities resume. Nonetheless the transfer of containers by barge should take thousands of trucks off the road and, at Lagos port level, should contribute to diminishing traffic on the access roads leading to the main terminals. The creation of a truck terminal should also improve circulation on the roads leading to the Kirikiri area and therefore shorten the amount of time each individual truck spends on the road with its engine running. This could also contribute to solving air and noise pollution issues insofar as a truck parked in a dedicated area waiting for its turn to enter the terminal obviously generates much less pollution than the same truck stuck in a traffic jam.

### 4.4.2 Safety

The proposed new organisation of the terminal should curb the gradual expansion of hazardous activities such as tank farms. The recommended layout scenario integrates safety constraints previously mentioned. It regroups all food-related industries in the same part of the terminal and introduces a clear separation between those activities, the tank farms and the truck terminal.

Generally speaking, NPA's legal and regulatory arsenal regarding safety issues seems to be in line with international standards. The question lies more in its capacity to monitor the situation on the ground and ensure tenants comply with those rules. As economic activities grow while the number of tenants decreases in the envisaged new terminal organisation, it should become both more critical and easier for NPA to monitor future tenants. The positive results achieved in the field of safety on main Tin Can Island terminals since their concessioning in 2006 should also allow NPA's environmental team to now focus more on the Kirikiri area.

### 4.4.3 Social issues

Social issues probably represent the most sensitive point when it comes to assessing the impact of the concessioning of KLT I & II. The recommended layout scenario takes into account all the issues previously mentioned. It aims at limiting the displacement of businesses currently operating onsite and promoting a revival of economic activity in the Kirikiri area for the benefit of the local population.

The creation of an integrated fishery terminal realises a long due promise made by former President Olusegun Obasanjo and, by rationalising and sharing costs, serves the double purpose of curbing potential opposition to the concessioning project from the local fishing community and promoting the revitalisation of a highly labour-intensive sector.

The continued operations of almost all currently active businesses on KLT should maintain existing jobs, while new activities should generate new work opportunities. For instance, the container terminal alone should create an additional estimated 250 direct full-time jobs right from the start of operations. The relocation of food stalls currently lined up right next to the road into dedicated areas, mostly on the fishery terminal and the truck terminal, should also greatly improve the working and living conditions of the local population.

Some opposition can be expected from truck owners and truck drivers associations, as the introduction of barges could appear to reduce the need to recourse to the services they

provide. However the barging option should allow main container operators on Tin Can Island and Apapa to actually increase their level of traffic to the benefit of all economic stakeholders, most especially those involved in the transportation of goods. The creation of a truck terminal and the enforcement of stricter queuing rules on the access roads should also change the way some of those firms involved do their business and could raise some opposition. It is however in all stakeholders' interest that those congestion issues be dealt with in a more efficient manner. It will be interesting for that matter to observe the way the truck terminal currently under construction on Tin Can Island will be endorsed by that community in order to draw lessons applicable to the Kirikiri area.

The concessioning of KLT I & II should eventually have a positive social impact, provided a proper consultation process is conducted to ensure the project is endorsed by local stakeholders.

# 5. RISK ANALYSIS

## 5.1 Methodology

### 5.1.1 Foreword

The purpose of the risk analysis is to identify, analyse and understand the key risks which may be encountered throughout the life of the project, from its initial implementation down to the end of the concession.

The concession of a port infrastructure is based on a complex financial and legal structure due to the diversity and number of players coming into consideration. The very nature of the infrastructure also requires long-term contractual commitments from stakeholders, which obviously increases the number and likelihood of realisation of the risks potentially occurring.

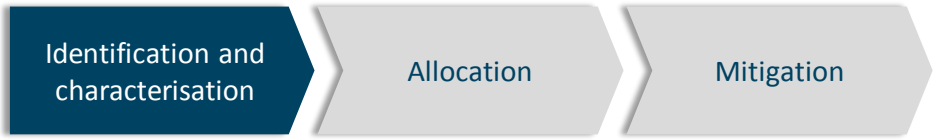
In order to ensure that the concession contract is balanced and viable and ultimately leads to a financial close, it is therefore important to firstly identify all of these risks and subsequently allocate each of them to the party best able to control and manage it thanks to specific mitigation instruments it has access to.

Risk management generally follows a three-step process:

- Identification and characterisation;
- Allocation;
- Mitigation.

### 5.1.2 Identification and characterisation

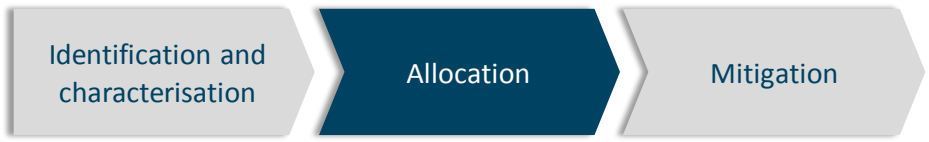
***Fig. 40.*** ***RISK ANALYSIS PROCESS – IDENTIFICATION AND CHARACTERISATION***




A comprehensive identification of the risks associated with the project should be conducted. Risks are best identified in a risk matrix listing all kinds of risks likely to occur during the project lifecycle.

### 5.1.3 Allocation

***Fig. 41.*** ***RISK ANALYSIS PROCESS – ALLOCATION***



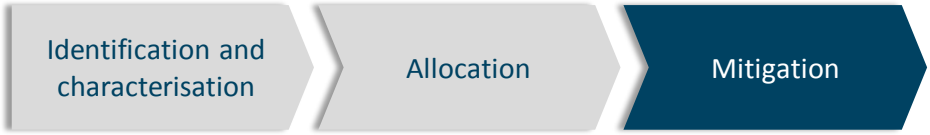

The identification of the risks and their allocation between the private sector and the public sector should comply with the following principle:

"Risks should normally be borne by the party best able to assess, control and manage them or by the party with the best access to the hedging instruments, the greatest ability to diversify the risks or the lowest cost of bearing them."

It is to be noted that each risk borne by the private concessionaire will require additional financial return (risk premium).

### 5.1.4 Mitigation

***Fig. 42.*** ***RISK ANALYSIS PROCESS – MITIGATION***




Mitigation strategies are developed to reduce the likelihood of risk occurring and/or reduce its potential impact. These strategies typically include a variety of measures which are specific to each risk: technical, operational, financial etc. The private partner and the public party conduct their own assessment, decide how the risk should be managed and take appropriate insurance policies or other measures accordingly. These measures can include but are not limited to:

- Political Risk Insurance (PRI) and other Partial Risk Guarantees (PRG);
- Financial instruments: swaps, futures, forwards, options and credit guarantees such as Partial Credit Guarantees (PCG) and Export Credit Agency (ECA) guarantees;
- Counterpart guarantees (performance bonds);
- Other commercial insurance.

Among risk mitigation tools, it is quite interesting to raise the key role the World Bank can play *via* specific instruments such as:

- The Partial Risk Guarantee, which covers specified risks arising from non-performance of sovereign contractual obligations or certain political force majeure events; they are particularly appropriate for non- or limited-recourse financial structures, such as Build-Own-Operate (BOT) schemes;
- The Partial Credit Guarantee, which covers all credit risks during a specified portion of a loan's term and typically extends maturities beyond what private creditors could otherwise provide, for instance by guaranteeing late-dated repayments or providing incentives for lenders to roll over short-term loans; they are typically used for public projects involving sovereign borrowings.

The public sector has historically underestimated the impact and likelihood of risk occurrence, which has often resulted in unbudgeted cost overruns; the private sector generally assesses and manages risks in a more optimal manner. Therefore the risk analysis is a critical step in the identification of the most adequate project procurement.

## 5.2 Risk identification

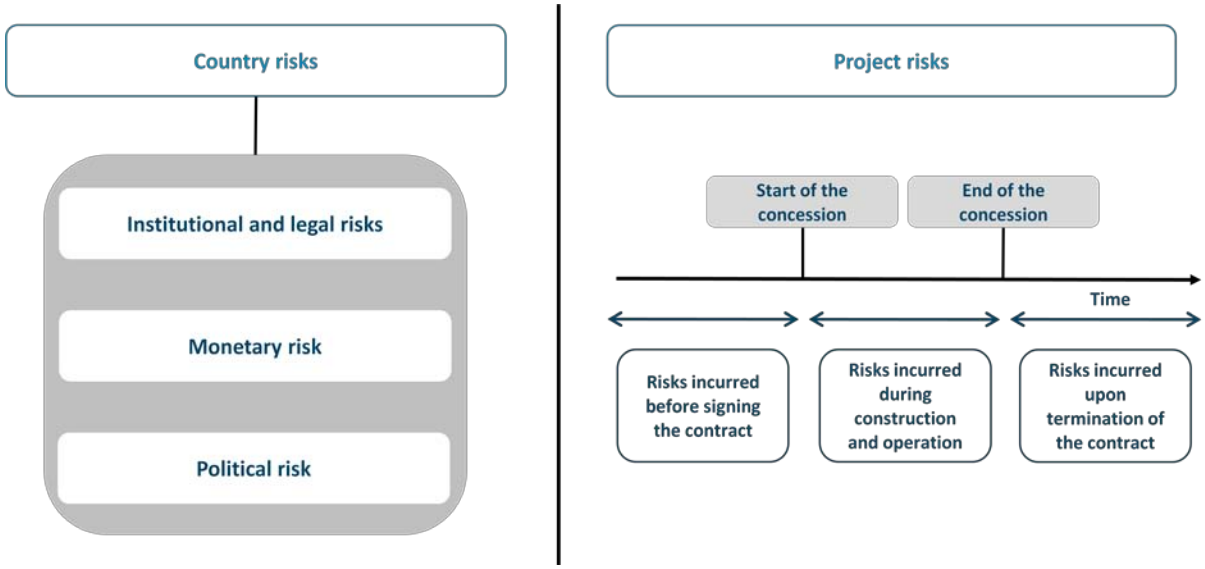
### 5.2.1 Foreword

The proposed concession project for KLT I & II generates a multitude of diverse and varied risks at different stages of the project lifecycle. Risks are generally divided in two categories:

- Risks which are related to the project environment, commonly designated as country risks;
- Risks which are specific to the project, commonly designated as project risks.

The following chart shows a split of those risks by typology.

***Fig. 43.*** ***MAIN TYPES OF RISKS***




*Source: Axelcium*

### 5.2.2 Country risks

*(a)* **Definition**

The notion of country risk actually covers three types of risks:

- Institutional and legal risks, which might affect property rights through confiscation, expropriation or nationalisation, with or without compensation;
- Monetary risks, which might affect repatriation of benefits through wilful or unwilful restrictions on cross-borders financial transfers and currency conversions;
- Political risks, which might affect compliance by the State or public utility with its public commitments, including financial commitments.

The various stakeholders will lay more or less importance on some of those risks:

- Lawyers will focus more on government fiat, while acknowledging that legal actions against foreign states are complicated in practice;

- Bankers and lenders will rather pay attention to government creditworthiness and monetary policies, even if sovereign guarantees usually provide a sense of comfort;
- Insurers will be more vigilant against political risks, which by definition are difficult to assess and are sometimes assimilated to disaster risks.

### *(b)* Valuation method of country risk

There are several organisations specialising in country risk analysis with the purpose of informing all investors who wish to implement projects or trade with entities located in other countries. The advantage of such organisations is that they establish comparative rankings based on harmonised and objective criteria to measure the risk within a country and between countries.

The below country risk analysis is based on a selection of two ratings: Coface's *Country @rating*, published by the French ECA, and the World Bank's *Doing Business* database. The ratings assigned by those two organisations will be enriched by a summary of the ratings assigned by major international rating agencies.

#### ➢ *Coface rating*

The Coface defines its rating system as follows:

"The Country @rating assigned by Coface reflects the average level of non-payment risk presented by short-term business of a country. It indicates how a financial commitment of a firm is influenced by the economic, financial and political country outlooks.

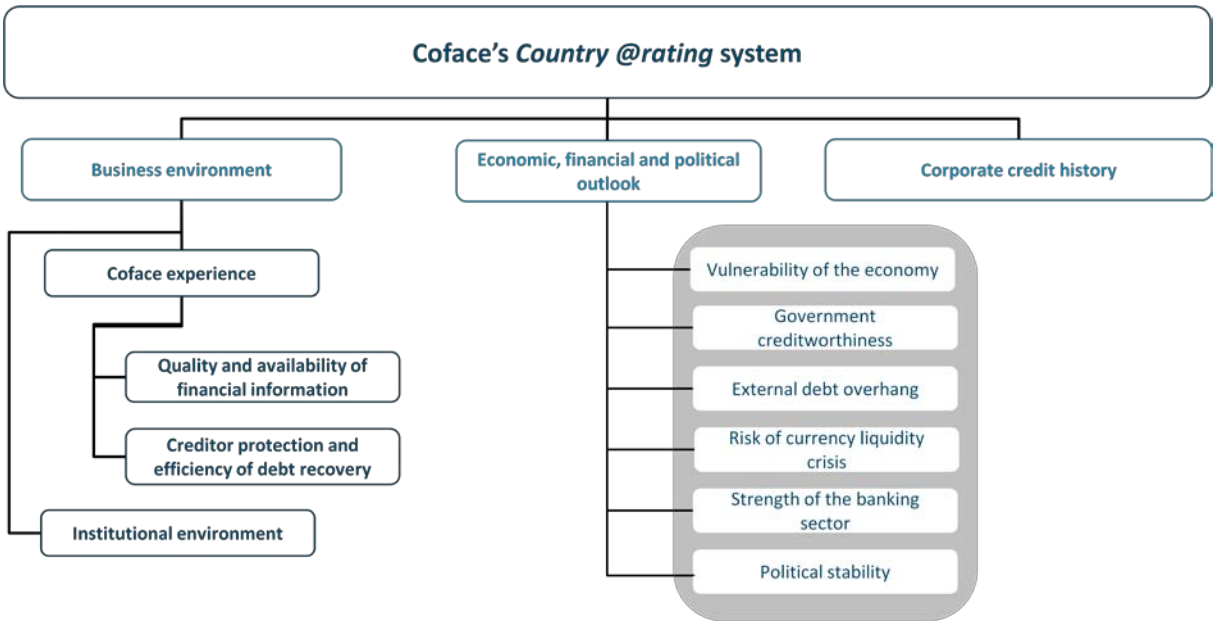
However, international traders know that there may be good firms in bad countries and bad firms in good countries, and that the global exposure depends at the same time on the specific characteristics of the company and those of countries in which it operates. The Country @rating grade completes quite naturally the @rating firm grade in order to better assess the overall risk of an operation."

*Country @rating* grades are established by Coface on the basis of a threefold expertise:

- Macroeconomics: assessment of the country's risk through a range of financial and political macroeconomic indicators;
- Business environment: the grade is calculated from both domestic and external sources;
- Microeconomics: statistical assessment based on personal database of 44 million firms worldwide and 50 years of experience guaranteeing payment flows between countries.

Coface proposes the following methodology to assess country risk:

***Fig. 44. COUNTRY @RATING BY COFACE***




*Source: Coface*

This methodology enables Coface to assign one of the seven country risk ratings as defined below:

***Fig. 45. COFACE RATING SCALE***

| Rating | Definitions |
|---|---|
| A1 | The political and economic situation is very good as is business environment quality. This has a positive influence on corporate payment behaviour. Average corporate default probability is very low. |
| A2 | The political and economic situation is good. The business environment though has a number of shortcomings. Average corporate default probability is low. |
| A3 | Changes in a generally good but somewhat volatile political and economic environment can affect corporate payment behaviour. The business environment has some shortcomings. Average corporate default probability is at a quite acceptable level. |
| A4 | The political and economic outlook is somewhat shaky. A relatively volatile business environment can affect corporate payment behaviour, although average corporate default probability remains acceptable. |
| B | Economic and financial uncertainties and an occasionally difficult business environment can affect corporate payment behaviour. Average corporate default probability is appreciable. |
| C | A very uncertain political and economic outlook and a business environment with many shortcomings can have a significant impact on corporate payment behaviour. Average corporate default probability is high. |
| D | A high-risk political and economic situation and an often highly difficult business environment can have a very significant impact on corporate payment behaviour. Average corporate default probability is very high. |

*Source: Coface*

### ➢ *Doing Business*

The World Bank has developed a database called *Doing Business* which contains a set of indicators measuring the quality of the business environment in many countries and regions worldwide. The World Bank describes its methodology as below:

"The Doing Business data are collected in a standardized way. To start, the Doing Business team, with academic advisers, designs a survey. The survey uses a simple business case to ensure comparability across economies and over time—with assumptions about the legal form of the business, its size, its location and the nature of its operations. Surveys are administered through more than 8,200 local experts, including lawyers, business consultants, accountants, freight forwarders, government officials and other professionals routinely administering or advising on legal and regulatory requirements. These experts have several rounds of interaction with the Doing Business team, involving conference calls, written correspondence and visits by the team. For Doing Business 2011 team members visited 33 economies to verify data and recruit respondents. The data from surveys are subjected to numerous tests for robustness, which lead to revisions or expansions of the information collected.

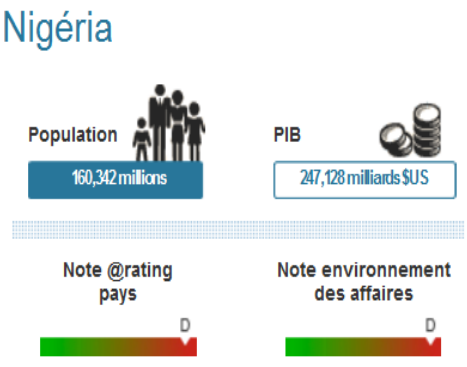
**How many experts does *Doing Business* consult?**

| *Indicator set* | *Contributors* |
|---|---|
| Starting a business | 1,406 |
| Dealing with construction permits | 605 |
| Registering property | 1,128 |
| Getting credit | 1,127 |
| Protecting investors | 874 |
| Paying taxes | 891 |
| Trading across borders | 1,279 |
| Enforcing contracts | 984 |
| Closing a business | 852 |
| Getting electricity | 602 |
| Employing workers | 862 |

The Doing Business methodology offers several advantages. It is transparent, using factual information about what laws and regulations say and allowing multiple interactions with local respondents to clarify potential misinterpretations of questions. Having representative samples of respondents is not an issue, as the texts of the relevant laws and regulations are collected and answers checked for accuracy. The methodology is inexpensive and easily replicable, so data can be collected in a large sample of economies. Because standard assumptions are used in the data collection, comparisons and benchmarks are valid across economies. Finally, the data not only highlight the extent of specific regulatory obstacles to business but also identify their source and point to what might be reformed."

### *(c)* Country risk in Nigeria

- ***Coface rating for Nigeria***




With more than 160 million inhabitants, Nigeria is the most populated African country. Nigeria is a major economic power in Africa with a Gross Domestic Product (GDP) of more than USD 247 billion in 2011, and an annual estimated growth of 7.3 % in 2011. Nigeria is also the biggest oil exporter in Africa, with the largest natural gas reserves in the continent and the eighth in the world. Though oil still represents more than 30% of Nigerian GDP, other sectors (especially agriculture, telecommunications, manufacturing and solid minerals) have experienced a growth rate of 9% between 2002 and 2009.

Nigeria is indeed making progress thanks to economic reforms strengthening the country's economic fundamentals. During the past few years the government has maintained prudent macroeconomic policies, financial institutions and, despite some slowness in their

implementation, is taking reforms to deeply transform the economic structure. Combined with high oil prices, the reforms undertaken delivered significant results such as improved macroeconomic indicators, reduced inflation and strong growth. The table below shows a selection of the most relevant economic indicators.

***Fig. 46. MAIN ECONOMIC INDICATORS FOR NIGERIA***

| | 2009 | 2010 | 2011 (estimated) | 2012 (forecast) |
|---|---|---|---|---|
| GDP Growth (%) | 7.0 | 7.8 | 7.3 | 6.9 |
| Inflation (annual average) | 11.5 | 13.7 | 10.9 | 10.0 |
| Budget Deficit / GDP(%) | - 5.3 | - 3.7 | - 3.3 | - 3.0 |
| Current Account / GDP (%) | 7.8 | 1.5 | 5.0 | 3.0 |
| Public Debt / GDP (%) | 15.3 | 17.5 | 16.5 | 16.0 |

*Source: Coface*

The huge hydrocarbon and arable land potential raises interest from Western economic players, especially in the United States. However some difficulties remain and the country will keep facing important challenges such as the North/South religious and economic division. Widespread corruption, high youth unemployment, high insecurity and frequent robbery, administrative inefficiency as well as terrorist threats in the Delta region and in the North-East of the country represent major challenges for Nigeria.

The lack of energy and transport infrastructures severely impairs the country's development, while the recent credit crunch hinders the development of firms and agriculture.

Current President Goodluck Jonathan, who enjoyed once again the confidence of the Nigerian people in April 2011, is determined to give adequate answers to these challenges. If he succeeds, the country will improve its business environment in a significant way. Nigeria's strengths and weaknesses are summarised in the table below.

***Fig. 47. NIGERIA'S STRENGTHS AND WEAKNESSES ACCORDING TO COFACE'S RATING***

| Strengths | Weaknesses |
|---|---|
| Significant oil and gas resources | Heavy dependence on oil revenues: 90% of exports, 20% of GDP and 80% of tax revenues |
| Large agricultural potential | Very limited refining capacity inducing expensive imports because they are subsidised (a quarter of the federal budget) |

| Strengths | Weaknesses |
|---|---|
| Very large population (162 million) | Diversification of production constrained by poor infrastructure |
| Prominent political role both at a regional and continental level | Ethnic and religious tensions fuelled by corruption |
| Low external debt | Overwhelmingly poor population, deficient health and education system |
| Banking sector on the recovery after having been rescued by government in 2008 | |

*Source: Coface*

Coface assigns a grade of D to Nigeria both for the *Country @rating* and the Business Environment rating. This rating is defined as follows by Coface:

"A high-risk political and economic situation and an often highly difficult business environment can have a very significant impact on corporate payment behaviour. Average corporate default probability is very high."

- ***Doing Business 2012***

The Nigerian business environment was also assessed by means of the indicators retained by the World Bank for its *Doing Business* ranking.

***Fig. 48. EASE OF DOING BUSINESS IN NIGERIA***

Ease of Doing Business in
Nigeria

This page shows summary *Doing Business 2012* data for Nigeria. The first table lists the overall "Ease of Doing Business" rank (out of 183 economies) and the rankings by each topic. The rest of the tables summarize the key indicators for each topic and benchmark against regional and high-income economy (OECD) averages.

ECONOMY OVERVIEW PRINT | EXCEL

| | |
|---|---|
| REGION | Sub-Saharan Africa |
| INCOME CATEGORY | Lower middle income |
| POPULATION | 158,258,917 |
| GNI PER CAPITA (US$) | 1,180.00 |

| DOING BUSINESS 2012 RANK | DOING BUSINESS 2011 RANK | CHANGE IN RANK |
|---|---|---|
| 133 | 133 | 0 |

| TOPIC RANKINGS | DB 2012 Rank | DB 2011 Rank | Change in Rank |
|---|---|---|---|
| Starting a Business | 116 | 108 | ↓ -8 |
| Dealing with Construction Permits | 84 | 83 | ↓ -1 |
| Getting Electricity | 176 | 176 | No change |
| Registering Property | 180 | 180 | No change |
| Getting Credit | 78 | 75 | ↓ -3 |
| Protecting Investors | 65 | 60 | ↓ -5 |
| Paying Taxes | 138 | 109 | ↓ -29 |
| Trading Across Borders | 149 | 149 | No change |
| Enforcing Contracts | 97 | 98 | ↑ 1 |
| Resolving Insolvency | 99 | 105 | ↑ 6 |

*Source: World Bank*

Nigeria is ranked at the 133rd place among the 183 countries considered by *Doing Business*, retaining the same place between 2011 and 2012. However that general overview should not occult the decrease in competitiveness observed for 5 of the 10 indicators used by *Doing Business*. Indeed the "Paying taxes" indicator went down 29 positions between 2011 and 2012 down to rank 138th; "Starting a business" decreased by 8 ranks down to 116th, while "Protecting investors" declined by 5 ranks down to 65th.

The "Getting electricity", "Registering property" and "Trading across borders" indicators are stable, respectively at ranks 176th, 180th and 149th, while "Enforcing contracts" and "Resolving insolvency" are the only two indicators which are improving, respectively by 1 rank up to 97th and by 6 ranks up to 99th.

Generally speaking the ranking confirms that Nigeria remains among the most challenging business environments worldwide in 2012.

## 5.3 Risk allocation

The tables below aim at listing all risks potentially incurred during the life of the project and suggesting an allocation thereof between the parties involved, as well as means to mitigate them.

### 5.3.1 Country risks

| Country risks | | | |
|---|---|---|---|
| **Risk typology** | **Generating factor** | **Risk allocation** | **Mitigation** |
| **Legal and institutional risk** | ▪ Change in law and regulatory environment (taxes, environmental standards, etc) | ▪ Concessionaire<br>▪ Insurers<br>▪ Contractor | ▪ Change in law clauses in the concession agreement<br>▪ Compensation mechanisms and risk and indemnities clauses in the concession agreement<br>▪ Recourse to Export Credit Agencies (Coface, Hermes, etc.) and/or other insurance providers (e.g. MIGA); these contracts generally include insurance against regulatory changes.<br>▪ Insurance policies and government guarantees covering the risk of change in taxation<br>▪ Renegotiation and termination clauses in the concession agreement |
| | ▪ Change in general legal framework directly and specifically affecting the project company | ▪ Government<br>▪ Insurers | ▪ Comprehensive and rigorous concession agreement covering as many potential events as possible<br>▪ Clauses on the possibility of international arbitration in the concession agreement<br>▪ Insurance policy covering sovereign and/or sub-sovereign risk (Coface, MIGA, etc.) |
| **Monetary risk** | ▪ Inflation | ▪ Concessionaire | ▪ Indexation of rates, charges and subsidies on inflation |
| | ▪ Interest rates fluctuation | ▪ Concessionaire | ▪ Recourse to hedging instruments (futures, swaps, options with caps and floors) in case of hard currency financing |
| | ▪ Exchange rates fluctuation | ▪ Concessionaire<br>▪ Government<br>▪ Customers | ▪ Recourse to hedging instruments<br>▪ Transfer of risk to customers thanks to hard currency pricing (the project generates revenues in foreign currencies) or index-based rate policy based on a pass-through clause<br>▪ Transfer of risk to government thanks to exchange rate guarantee over the term of the concession to be awarded by local monetary authorities on request of the Ministry of Finance<br>▪ Recourse to local capital |

| Country risks | | | |
|---|---|---|---|
| **Risk typology** | **Generating factor** | **Risk allocation** | **Mitigation** |
| | ▪ Non-convertibility or non-transferability | ▪ Concessionaire<br>▪ Insurers | ▪ Compilation of historical data on global market risk and country risk (rating agencies, international organisations, think tanks, etc.)<br>▪ Local government undertakings in relation to convertibility and cross-border transfers of funds<br>▪ Insurance policy covering non-transferability risk (Coface, MIGA, etc.) |
| **Political risk** | ▪ Breach or cancellation of contract, expropriation, creeping expropriation, failure to obtain or renew approvals, terrorism | ▪ Concessionaire<br>▪ Insurers | ▪ Insurance policy covering political risk (Coface, MIGA, etc.)<br>▪ Clause renegotiated with the concessionaire in the concession contract<br>▪ Clauses for early termination of the concession contract with compensation arrangements to the benefit of the concessionaire |
| **Force Majeure** | ▪ Flood, earthquake, riot, strike, etc. | ▪ Concessionaire<br>▪ Insurers<br>▪ NPA | ▪ Insurance policy covering floods, earthquake and other similar risks<br>▪ Risk of riot, war and hostilities usually borne by the concessionaire, unless Government is directly responsible or involved |

### 5.3.2 Project risks

| Project risks | | | |
|---|---|---|---|
| **Risk typology** | **Generating factor** | **Risk allocation** | **Mitigation** |
| **Risks incurred prior to financial close** | | | |
| **Delay in project preparation and implementation** | ▪ Strong opposition from local community, interest groups and/or current tenants | ▪ NPA | ▪ Consultation process with stakeholders and current tenants<br>▪ Future layout to improve the situation of all current tenants to the extent possible<br>▪ Upstream legal preparation (e.g. non-renewal of leases to be terminated) |
| | ▪ Delay in developing a business case | ▪ NPA | ▪ Careful planning of project preparation schedule<br>▪ Strong commitment from and coordination between all government entities involved<br>▪ Selection of competent and experienced advisers to bring in lacking skills |
| **Unsuccessful tender** | ▪ The project does not attract bidders<br>▪ The project does not attract the targeted bidders in terms of development policy, | ▪ NPA | ▪ Thorough upstream preparation of feasibility studies, tender documents, concession agreement, etc.<br>▪ Submission of a bankable Outline Business Case to the market<br>▪ Roll-out of a real project marketing campaign (advertisement in the general and specialised media, organisation of a press conference or a road show, setup of a data room) |

| Project risks | | | |
|---|---|---|---|
| **Risk typology** | **Generating factor** | **Risk allocation** | **Mitigation** |
| | experience, financial clout, etc. | | ▪ Inclusion of minimum requirements in terms of experience and/or financial solvency of bidders<br>▪ Setup of a very precise, clear and transparent tendering process<br>▪ All information available to be transmitted to the bidders in order to avoid adverse selection<br>▪ Bidders to be granted sufficient time to prepare a proposal |
| **Incapacity of the concessionaire to raise funding** | ▪ The concessionaire cannot find funding with the adequate terms and conditions. | ▪ Concessionaire<br>▪ NPA | ▪ Submission of a bankable Outline Business Case to the market<br>▪ Inclusion of minimum requirements in terms of experience and/or financial solvency of bidders<br>▪ Availability of NPA to provide assistance to the concessionaire and comfort to potential lenders as required |
| | ▪ The concessionaire cannot pledge the assets due to missing approval by NPA. | ▪ NPA | ▪ List of assets available for pledging to lenders clearly stated in the concession agreement<br>▪ Adequate protective provisions in the concession agreement<br>▪ NPA to provide formal approval to pledge the assets in due time |
| **Risks incurred during construction period** | | | |
| **Cost overrun** | ▪ Within the concessionaire's control (inefficient construction practices, etc.) | ▪ Concessionaire<br>▪ EPC contractor | ▪ Careful planning and project management<br>▪ Selection of a seasoned and competent project manager<br>▪ Choice of a reputable and internationally recognised EPC (Engineering, Procurement and Construction) contractor<br>▪ Turnkey contract with solid commitments from the EPC contractor (deposits, holdbacks, performance bonds)<br>▪ Clearly described indemnification mechanism in the EPC contract<br>▪ Equity participation of the EPC contractor in the concessionaire consortium |
| | ▪ Outside the concessionaire's control: change in the overall legal framework (taxes, laws, etc.) | ▪ NPA | ▪ Adequate protective provisions in the concession agreement |
| | ▪ Outside the concessionaire's control: government action or lack of action | ▪ NPA | ▪ Adequate protective provisions in the concession agreement |

| Project risks | | | |
|---|---|---|---|
| **Risk typology** | **Generating factor** | **Risk allocation** | **Mitigation** |
| | affecting the project (e.g. delays in securing approvals) | | |
| | ▪ Seismic risks | ▪ Concessionaire<br>▪ EPC contractor | ▪ Seismic study to be completed<br>▪ Introduction of seismicity coefficient in construction cost estimates of the EPC contractor and the concessionaire<br>▪ Force Majeure clauses in the concession agreement<br>▪ Adequate insurance policy |
| | ▪ Geotechnical risks | ▪ Concessionaire<br>▪ EPC contractor | ▪ Communication of all available geotechnical information to the concessionaire<br>▪ Geotechnical study to be completed<br>▪ Building design by a specialised firm<br>▪ Monitoring of degradation of platforms throughout the life of the concession<br>▪ Insurance policy covering geotechnical risks |
| | ▪ Miscommunication between the parties | ▪ Concessionaire<br>▪ NPA | ▪ Roles and obligations of the parties in terms of construction of infrastructures and superstructures and procurement of handling equipment to be clearly stated in the concession agreement<br>▪ Close monitoring of construction works by NPA<br>▪ Coordination between major stakeholders |
| **Delay in completion** | ▪ Wrong construction time estimations by suppliers | ▪ Concessionaire<br>▪ EPC contractor | ▪ Careful planning and project management<br>▪ Selection of a seasoned and competent project manager<br>▪ Choice of a reputable and internationally recognised EPC contractor<br>▪ Turnkey contract with solid commitments from the EPC contractor (deposits, holdbacks, performance bonds)<br>▪ Clearly described indemnification mechanism in the EPC contract<br>▪ Equity participation of the EPC contractor in the concessionaire consortium |
| | ▪ Unexpected events outside the concessionaire's control | ▪ Concessionaire<br>▪ EPC contractor | ▪ Turnkey contract with solid commitments from the EPC contractor (deposits, holdbacks, performance bonds)<br>▪ Clearly described indemnification mechanism in the EPC contract<br>▪ Setup of a project steering committee by public authorities to avoid the risk of administrative delays<br>▪ Coordination between major stakeholders |

| Project risks | | | |
|---|---|---|---|
| **Risk typology** | **Generating factor** | **Risk allocation** | **Mitigation** |
| **Failure of project to meet performance criteria at completion** | ▪ Quality shortfall, construction defects | ▪ Concessionaire<br>▪ EPC contractor | ▪ Careful planning and project management<br>▪ Selection of a seasoned and competent project manager<br>▪ Choice of a reputable and internationally recognised EPC contractor<br>▪ Turnkey contract with solid commitments from the EPC contractor (deposits, holdbacks, performance bonds)<br>▪ Clearly described indemnification mechanism in the EPC contract<br>▪ Equity participation of the EPC contractor in the concessionaire consortium |
| **Challenge on property and/or perimeter of the assets** | ▪ Unclear concession agreement<br>▪ Dissent on the interpretation of the concession agreement | ▪ Concessionaire | ▪ Layout map defining the perimeter of the concession to be included in the concession agreement<br>▪ Comprehensive and accurate inventory of assets granted, leased and/or sold as part of the concession to be included in the concession agreement |
| **Environmental risk** | ▪ Negative impact on fauna and flora | ▪ Concessionaire | ▪ Environmental Impact Assessment (EIA) study to be completed<br>▪ Project monitoring in compliance with local environmental regulatory framework |
| **Risks incurred during operating period** | | | |
| **Operating cost overrun** | ▪ Failure or delay in obtaining licenses, consents and permits | ▪ NPA | ▪ Coordination with all relevant government stakeholders to ensure timely approvals |
| | ▪ Change in prices of supplies | ▪ Concessionaire | ▪ Long-term procurement contracts<br>▪ Recourse to hedging instruments for major supplies (e.g. commodity hedges, options, futures, etc.) |
| | ▪ Change in staff-related costs | ▪ Concessionaire | ▪ Transfer of inflation risk to customers through CPI-based pricing or index-based rate policy based on a pass-through clause |
| | ▪ No delivery of supplies on the part of public authorities | ▪ NPA | ▪ Adequate protection clauses in the concession agreement for water and/or power |
| **Revenue risk** | ▪ Change in tariffs | ▪ Concessionaire | ▪ Financial regulation and renegotiation clauses in the concession agreement |
| | ▪ Higher than expected traffic level (exceeding handling capacity) | ▪ Concessionaire | ▪ Long-term agreement with existing Lagos port operators<br>▪ Financial regulation and renegotiation clauses in the concession agreement |

| Project risks | | | |
|---|---|---|---|
| **Risk typology** | **Generating factor** | **Risk allocation** | **Mitigation** |
| | ▪ Lower than expected traffic level | ▪ Concessionaire | ▪ Long-term agreement with existing Lagos port operators<br>▪ Financial regulation and renegotiation clauses in the concession agreement |
| **Technical risks** | ▪ Incorrect initial valuation of the assets made available to the concessionaire | ▪ NPA | ▪ Protection clauses in the concession agreement covering abnormal degradation of assets made available to the concessionaire due to hidden defects<br>▪ Warranties to be issued by NPA |
| | ▪ Poor maintenance of the concessionaire's assets | ▪ Concessionaire | ▪ Clearly described penalty mechanism in the concession agreement<br>▪ Close monitoring of contract by NPA<br>▪ Warranties to be issued by the concessionaire |
| | ▪ Poor maintenance of NPA's assets | ▪ NPA | ▪ Clearly described penalty mechanism in the concession agreement<br>▪ Warranties to be issued by the concessionaire |
| **Environmental risks** | ▪ Negative impacts on fauna and flora | ▪ Concessionaire (if not complying with the concession agreement)<br>▪ NPA | ▪ Environmental Impact Assessment (EIA) study to be completed<br>▪ Project monitoring in compliance with local environmental regulatory framework |
| | ▪ Increased traffic congestion | ▪ NPA | ▪ Creation of the truck terminal<br>▪ Strict access control at terminal gates<br>▪ Increased police surveillance on the roads |
| **Risks incurred upon termination** | | | |
| **Litigation on assets to be transferred** | ▪ Unamortised assets upon termination | ▪ Concessionaire | ▪ Concession agreement to clearly specify the assets to be retained by the concessionaire and those to be transferred to NPA, and at what cost, if any |
| **Operating interruption** | ▪ No private operator interested in taking over and NPA left without the human and financial resources to do so | ▪ NPA | ▪ Exit clauses in the concession agreement to allow sufficient time for alternatives to be designed and implemented |

# 6. ANALYSIS OF STRUCTURING OPTIONS

## 6.1 Initial thoughts

There are a wide range of PPP options which can be used in structuring the KLT I & II project. These options vary mainly by ownership of capital assets, responsibility for investment, assumption of risks and duration of the contract.

We have in our analysis taken into account NPA's ownership of KLT I & II and considered PPP options which optimise the use of existing assets at the terminals through improved operation and modernisation. The following PPP options have been considered:

- Concession;
- Management agreement;
- Joint venture agreement.

## 6.2 Evaluation of potential structuring options

### 6.2.1 Option 1 – Concession

NPA may grant a concession to a private sector operator (concessionaire) wherein the concessionaire will be responsible for the full delivery of services in a specified part of KLT I & II or the whole terminal. Rights granted under the concession may include development of terminal infrastructure, provision of terminal operating equipment, operation, maintenance and rehabilitation of the terminals.

The obligation to raise the capital required to build, upgrade or expand the terminals may be placed on the concessionaire. Furthermore, the obligation to construct structures such as the quay walls which are primarily the responsibility of NPA may be passed on the concessionaire and the cost set off against a longer concession term or tariffs payable to NPA under the concession. In addition, some or all of the demand and revenue risks of the terminal may be transferred to the concessionaire.

Depending on the amount of risks and obligations passed off by NPA to the concessionaire, the concessionaire may require a long-term concession to enable it to recover its investment and earn an appropriate return over the life of the concession.

As regulator, NPA would regulate the price and quality of service and determine performance standards which the concessionaire must comply with.

### 6.2.2 Option 2 – Management agreement

This consists of the hiring of a private company to manage a public utility. Under this option, NPA would be responsible for the finance, construction and/or rehabilitation of the infrastructure. The private sector participant will be engaged solely for the operation and maintenance of KLT I & II or any part of the terminal. Fees payable to the private sector participant may be set off against tariffs paid by users of the terminal assets.

The advantage of such an arrangement is the efficient management of the assets at KLT I & II and optimal use of the terminal area. However, the fact that NPA assumes the responsibility

for financing the development of the terminal infrastructure and purchase of required equipment does not make this a viable PPP option for NPA.

### 6.2.3 Option 3 – Joint venture agreement

NPA may enter a joint venture agreement with a private investor for the financing, operation and maintenance of the port terminals. NPA and the private investor will in this case partner to operate the terminals through a special purpose vehicle. All profits and risks arising from the joint venture will be shared by NPA and the private investor.

This option will require substantial investment by NPA and as such may not be a viable PPP option for NPA.

## 6.3 Recommended structuring option

Following our analysis of the aforementioned PPP options, our recommended structuring option involves a synergy of different PPP options.

A concession for the development of the container terminal at KLT I & II may be granted by NPA to an international container terminal operator. Taking into account the fact that all container traffic expected at KLT – to the possible exception of containers brought in on LASH barges – will be transferred from main port terminals, the interested candidates for operating container activities on KLT I & II will most likely be somehow linked to concessionaires currently operating those terminals. Interest from such parties is expected to be high as any container evacuated from those main terminals will allow the concessionaires to accommodate additional traffic and thus increase their profits.

The eventual number of Kirikiri container storage concession blocks will depend on those operators' willingness to form consortia and work together. The incentive to do so is high as a sufficient level of traffic must be reached to justify costs related to the operation of barges. NPA might find it useful to expect traffic commitments from interested candidates to ensure that such profitability threshold is reached, encourage associations of operators and guarantee usage of the area for its intended purpose.

Where it is discovered that the international container terminal operator(s) has (have) the required experience and ability to operate and manage the proposed truck terminal, the scope of the concession may be extended. Otherwise, a separate concession may be entered into with a private sector participant for the truck terminal.

Due to the fact that the cash flow from the operation of a fishing terminal will not be significant, NPA may enter into a management agreement with a private sector participant. This will ensure that there is a collective development of the fishing terminal, the related social benefits are effectively harnessed and that the overall development of KLT I & II is coordinated.

As earlier noted, the responsibility for any capital investment in the fishing terminal will have to be borne by NPA under a management agreement. A way around this is for NPA to pass off the investment required for the development of the fishing terminal to the container terminal concessionaire. It should be noted that such an arrangement will possibly impact on the cost of the concession and may necessitate NPA granting the concessionaire a longer term to recoup its investment or setting off the additional cost against fees payable to NPA.

As for other business units represented on the recommended layout scenario, such as Royal Salt, tank farms and marine activities, our recommendation is to have their presence onsite take the legal form of long-term leases if such is not the case yet. By providing more comfort to both parties and more visibility on future financial transfers between the lessor and the lessee, such agreements would most certainly leave both parties in a better position than the one currently prevailing.

# 7. BANKABILITY ASSESSMENT

## 7.1 Presentation of the Financial Model

This section aims at presenting and analysing the financial feasibility of the total Kirikiri rehabilitation and concessioning project on the basis of the technical and structuring options retained. For the purpose of assessing the project's bankability a Financial Model was designed which comprises the following modules:

- Input modules:
  - Traffic & Tariffs;
  - Capex & Opex inputs;
- Calculation modules:
  - Revenues;
  - Capex;
  - Equipment;
  - Assets;
  - Opex;
- Output modules:
  - Cash Flow Statement (Private Operator);
  - Financing Plan (Private Operator);
  - Financial Statements (Private operator);
  - Financial Analysis (Private Operator);
  - Cash-in/Cash-out (NPA).

An additional module entitled "Dashboard" allows the user to change a series of project parameters:

- Time schedule:

A table allows the user to change all time schedule assumptions: Reference year, Start of project period, Start of construction period, Duration of construction period, Start of operating period and Duration of operating period.

***Fig. 49. TIME SCHEDULE***

| Time schedule | |
|---|---|
| Reference year | 2012 |
| Start of project period | 31/12/2012 |
| Construction Period | |
| Start of construction period | 31/12/2012 |
| Duration of construction period | 1 year(s) |
| End of construction period | 31/12/2013 |
| Operating Period | |
| Start of operating period | 31/12/2013 |
| Duration of operating period | 15 year(s) |
| End of operating period | 31/12/2028 |
| End of project period | 31/12/2028 |
| Total duration of project period | 16 year(s) |

*Source: Axelcium*

- Capex scenario:

A table allows the user to indicate the scope of the Capex, i.e. the portions of the quay walls to be rehabilitated, and whether the costs for such works are to be borne by NPA or the private operator. By default, the Capex scenario activated is a total refurbishment of the 1,800 m of quay walls at the expense of the private operator.

***Fig. 50. CAPEX SCENARIO***

| Capex scenario | | | | |
|---|---|---|---|---|
| Quay walls | Project perimeter | Financing | Private Capex | NPA Capex MNGN |
| Quay wall (whole - 1050m + 750m) | In Scope | Private | 11 688 | 0 |
| Quay wall for containers (70m per post) | Out of Scope | Private | 0 | 0 |
| Quay wall for fishery terminal (400m) | Out of Scope | Private | 0 | 0 |
| Quay wall for Royal Salt (70m) | Out of Scope | Private | 0 | 0 |
| Quay wall for marine activities | Out of Scope | Private | 0 | 0 |
| | | | **11 688** | **0** |

*Source: Axelcium*

- Traffic scenario:

A table allows the user to choose between the Base Case, Low Case or High Case. By default, the traffic scenario activated is the Base Case. The financial impact of Low Case and High Case traffic assumptions is assessed in **Section 7.10 Sensitivity analysis**.

***Fig. 51. TRAFFIC SCENARIO***

| Traffic scenario | |
|---|---|
| Traffic Case | |
| Base Case | Scenario 2 |

*Source: Axelcium*

- Inflation:

A table allows the user to independently modify inflation rates for a series of revenue and cost items.

***Fig. 52. INFLATION***

| Inflation | |
|---|---|
| Tariff index | 10,0% |
| Cost index | 10,0% |
| Construction costs index | 10,0% |
| Equipment costs index | 10,0% |
| Staff expenditures index | 12,0% |
| Power index | 10,0% |

*Source: Axelcium*

- Currencies:

A table allows the user to independently modify the EUR / NGN exchange rate, the USD / NGN exchange rate and the output currency.

***Fig. 53. CURRENCIES***

| Currencies | | |
|---|---|---|
| EUR / NGN | 196,762 NGN | 19/07/2012 |
| USD / NGN | 160,347 NGN | 19/07/2012 |
| Output currency | NGN | |

*Source: Axelcium*

- Working capital:

A table allows the user to modify working capital assumptions.

***Fig. 54. WORKING CAPITAL***

| Working capital | |
|---|---|
| Inventory - No. of days of O&M costs | 15 days |
| Accounts Receivable - Number of days of sales | 30 days |
| Accounts Payable - No. of days of O&M Costs | 30 days |

*Source: Axelcium*

- Corporate tax:

A table allows the user to modify corporate tax assumptions.

***Fig. 55. CORPORATE TAX***

| Corporate tax | |
|---|---|
| Corporate tax | 30.0% |
| Losses carried forward | |

*Source: Axelcium*

- Dividend distribution:

A table allows the user to modify dividend distribution assumptions.

***Fig. 56. DIVIDEND DISTRIBUTION***

| Dividend distribution | |
|---|---|
| Dividend distribution | ☑ |
| Share of earnings distributed | 100.0% |
| First year of distribution | 2015 |

*Source: Axelcium*

- Tariffs:

A table allows the user to modify tariff assumptions. Please refer to **Section 4.3.2 (c) Tariff setting** for more details.

- Sources of funds:

A table allows the user to allocate the financing between different sources of funds: Equity, Shareholder loan contribution and Debt.

***Fig. 57. SOURCES OF FUNDS***

| Sources of funds | | | |
|---|---|---|---|
| Equity | 20,00% | | |
| Shareholder loan contribution | 10,00% | | |
| Debt drawings (construction period) | 70,00% | 16 162 | MNGN |

*Source: Axelcium*

- Financing during construction period:

A table allows the user to modify the characteristics of the debt facilities (up to 3) taken to finance initial investments: Name of credit facility provider, Share of debt funding provided, Commitment fee, Arrangement fee, Reference rate, Margin, Grace period, Repayment period, Repayment profile (Decreasing instalments / Equal instalments), Debt service reserve account (yes/no) and Level of provisioning of debt service reserve account.

***Fig. 58. FINANCING DURING CONSTRUCTION PERIOD***

| Financing during construction period | Facility 1 | Facility 2 | Facility 3 |
|---|---|---|---|
| Name of credit facility provider | AA | BB | CC |
| Share of debt funding provided | 100,00% | 0,00% | 0,00% |
| | 16 162 | 0 | 0 |
| Commitment fee | 2,00% | 2,00% | 2,00% |
| Arrangement fee | 0,25% | 0,25% | 0,25% |
| Reference rate | 3,15% | 3,15% | 3,15% |
| Margin | 7,00% | 7,00% | 7,00% |
| Interest rate | 10,15% | 10,15% | 10,15% |
| Grace period | 1 year(s) | 1 year(s) | 1 year(s) |
| Repayment period | 10 year(s) | 10 year(s) | 10 year(s) |
| Loan maturity | 11 year(s) | 11 year(s) | 11 year(s) |
| Repayment profile | Equal inst. | Equal inst. | Equal inst. |
| Value of payment | 2 647 | 0 | 0 |
| Year of first instalment | 2015 | 2015 | 2015 |
| Year of last instalment | 2024 | 2024 | 2024 |
| **Debt service reserve account** | | | |
| Debt service reserve account | | ☑ | 6 month(s) |

*Source: Axelcium*

- Shareholder loan:

A table allows the user to modify the characteristics of the shareholder loan: Interest rate, Repayment (yes/no) and Date of first repayment.

***Fig. 59. SHAREHOLDER LOAN***

| Shareholder loan | | |
|---|---|---|
| Interest rate | 10.00% | |
| Repayment | ☑ | 2015 |

*Source: Axelcium*

- Financing during operating period:

A table allows the user to modify the characteristics of the debt taken to finance expansion and renewal equipment: Self-financing (yes/no), Level of self-financing, Reference rate, Margin, Grace period, Repayment period and Repayment profile (Decreasing instalments / Equal instalments).

***Fig. 60. FINANCING DURING OPERATING PERIOD***

| Financing during operating period | | |
|---|---|---|
| Self-financing | ☑ | 40,00% Op.CF |
| Reference rate | 3,15% | |
| Margin | 17,00% | |
| Interest rate | 20,15% | |
| Grace period | 1 year(s) | |
| Repayment period | 10 year(s) | |
| Loan maturity | 11 year(s) | |
| Repayment profile | Equal inst. | |

*Source: Axelcium*

- Regulation & profit-sharing tools:

A table allows the user to modify the characteristics of the fees to be paid by the concessionaire(s) to NPA: Entry fee, Fixed concession fee and Variable concession fee.

***Fig. 61. REGULATION & PROFIT-SHARING TOOLS***

| Regulation & profit-sharing tools | Value / % | Indexation | Index | Frequency | Depreciation |
|---|---|---|---|---|---|
| Entry fee | 0 NGN | ☑ | | | 10 year(s) |
| Fixed concession fee | 787 046 760 NGN | ☑ | 5,00% | 1 year(s) | |
| Variable concession fee | 19 676 NGN/TEU | ☑ | 5,00% | 1 year(s) | |
| Start of indexation period | 2012 | | | | |

*Source: Axelcium*

- Cost of equity:

A table allows the user to modify cost of equity assumptions: Asset beta, Risk-free rate, Market premium and Country risk premium.

***Fig. 62. COST OF EQUITY***

| Cost of equity | |
|---|---|
| Asset beta | 0,794 |
| Risk-free rate | 3,15% |
| Market premium | 5,23% |
| Country risk premium | 20,00% |
| Unlevered cost of equity | 27,30% |

*Source: Axelcium*

- Leases:

In addition to revenues drawn from the future container terminal, NPA will continue collecting revenues from leases. A table allows the user to modify leases assumptions applicable to every unregulated business unit: Area and Rent/m². Rental prices have been differentiated depending on the activity considered and the type of plot required to conduct such activities (with or without an access to the channel, paved or unpaved area, etc.).

***Fig. 63. LEASES***

| Leases | Area | Rent/m² |
|---|---|---|
| Tank farms | 75 000 m² | 500 NGN |
| Truck terminal | 30 000 m² | 1 000 NGN |
| Fishery terminal | 90 000 m² | 800 NGN |
| Royal Salt | 42 000 m² | 1 071 NGN |
| Marine activities | 17 000 m² | 3 182 NGN |

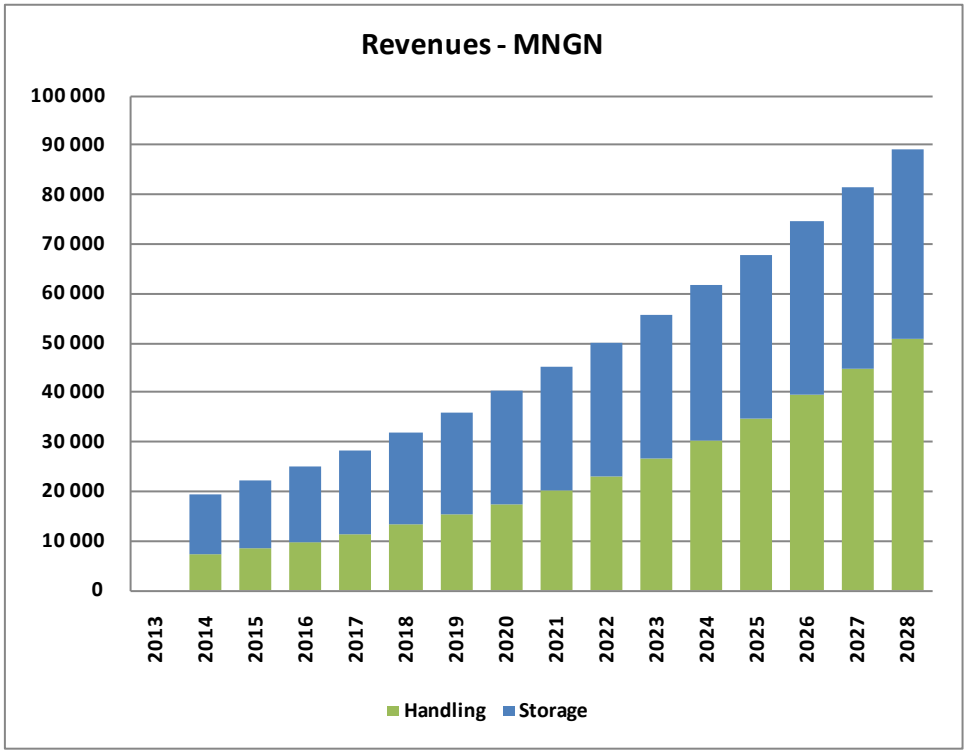
*Source: Axelcium*

Based on the above assumptions, the financial model is able to calculate the estimated revenues, Opex and Capex of the concessionaire and to produce its projected financial statements, as well as NPA's expected cash-in / cash-out.

## 7.2 Revenues

In the Base Case scenario, revenues show a constant positive evolution throughout the life of the concession, being directly linked to growing traffic figures and to a high inflation index.

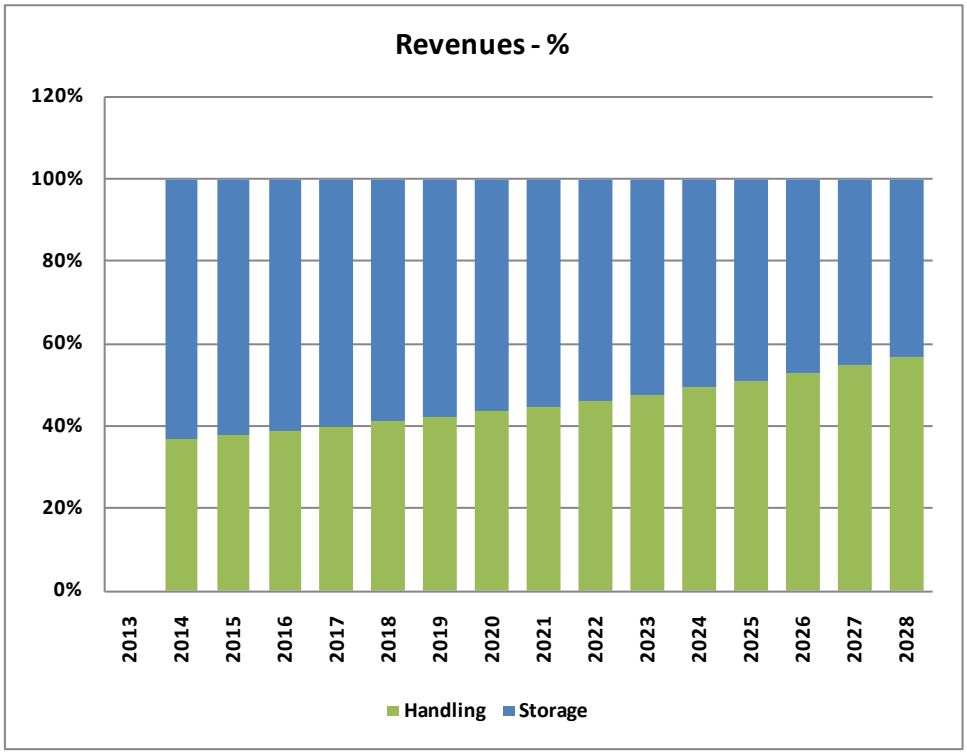
***Fig. 64. REVENUES***




*Source: Axelcium*

However the revenue structure varies significantly with time, as shown by the graph below.

***Fig. 65. REVENUE STRUCTURE***



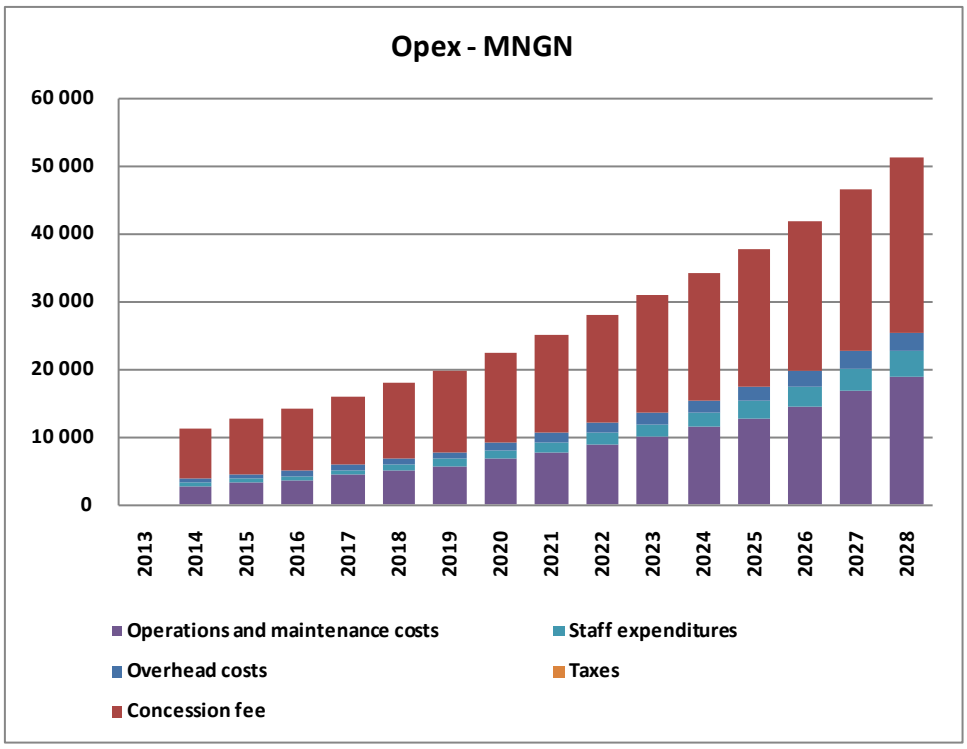

*Source: Axelcium*

Storage revenues, which in 2014 represent 63% of total revenues, account for a mere 43% thereof in 2028. This is due to the decreasing average dwell time of containers on the terminal.

## 7.3 Operating expenditures

Operating expenditures follow the exact same upward trend as most cost items are also directly or indirectly linked to the level of traffic and progress rapidly due to inflation.

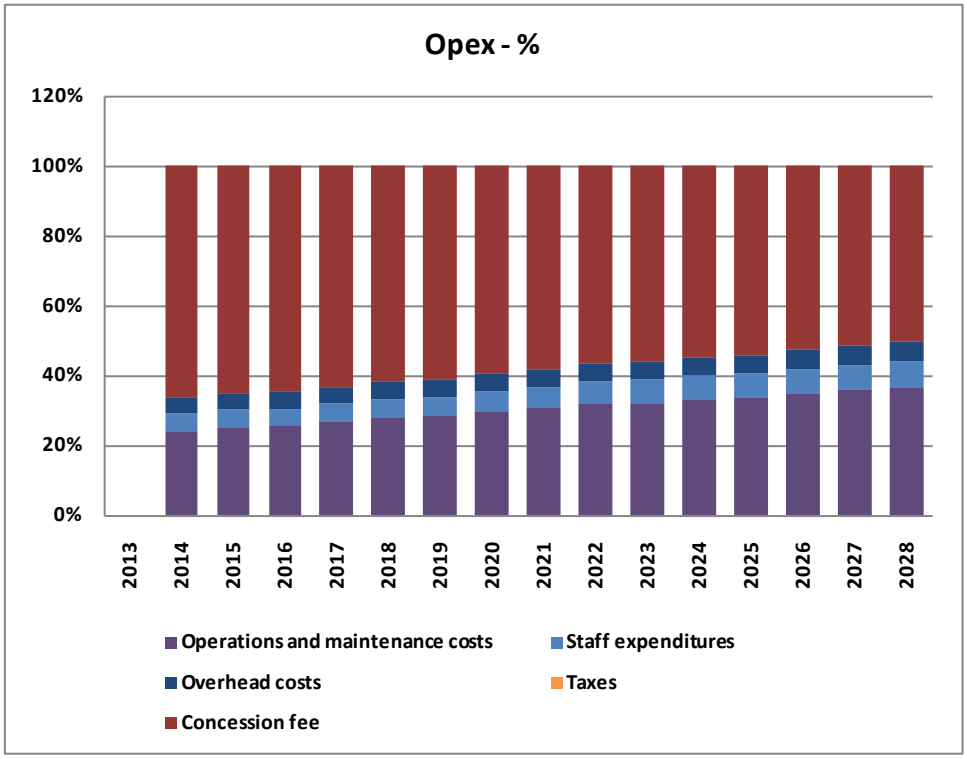
***Fig. 66. OPEX***




*Source: Axelcium*

Contrarily to the revenue structure, the Opex structure remains relatively constant throughout the life of the concession. The relative proportion of the concession fee reduces however as it is indexed at 5% per annum, compared to 10-12% for other cost items.

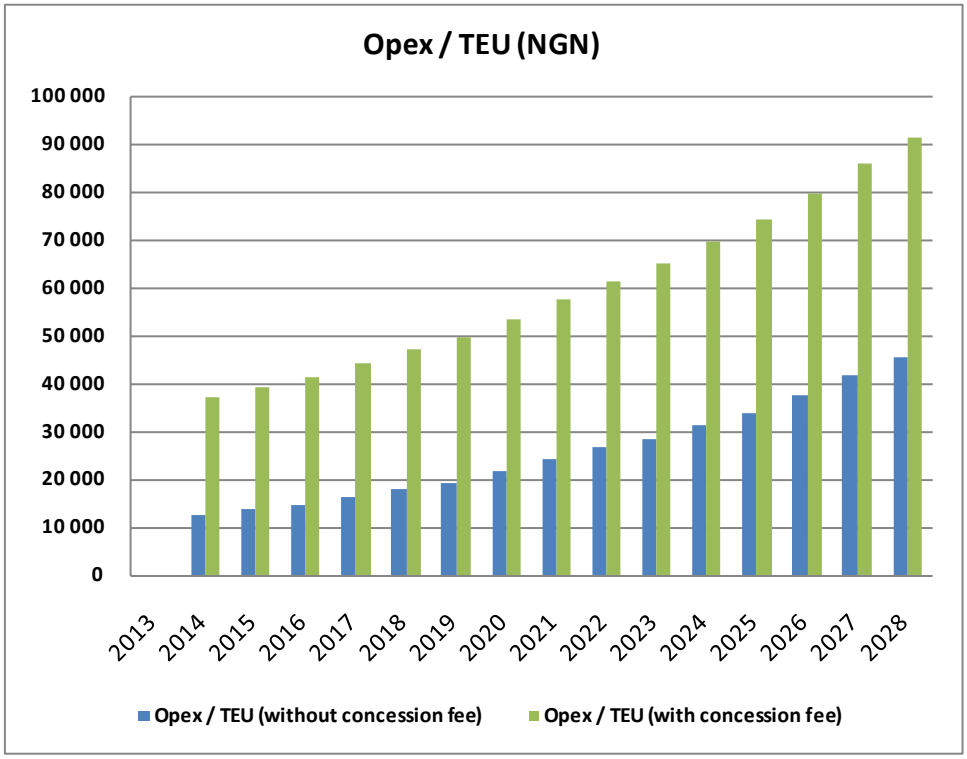
***Fig. 67. OPEX STRUCTURE***




*Source: Axelcium*

The concession fee, which is composed of a fixed yearly payment and a variable fee depending on the level of traffic handled by the concessionaire, initially represents 66% of total costs, while operations and maintenance costs, staff expenditures and overhead costs respectively account for 23%, 4% and 4% thereof. At the end of the forecast period, the concession fee represents only 50% of total Opex.

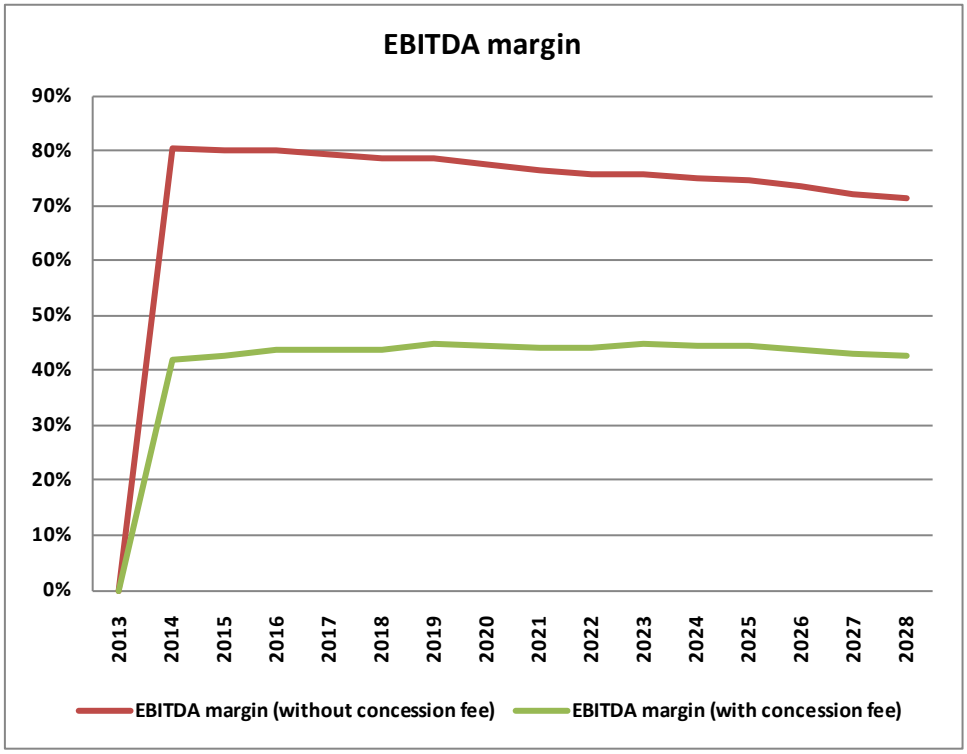
***Fig. 68. OPEX / TEU***




*Source: Axelcium*

The level of operating expenditures per TEU increases mostly as a result of automatic cost indexation.

*Fig. 69. EBITDA MARGIN*




*Source: Axelcium*

The EBITDA margin gradually decreases over the life of the concession, which is very unusual for an infrastructure project of that nature. This is mostly due to two distinct phenomena:

- The staff expenditures index is higher than the index used for tariffs and other costs; as a consequence, staff costs grow faster than revenues;
- The decrease in average container dwell times and the accelerated rotation of containers on the terminal have a negative impact on storage revenues while they do not reduce costs, which are mainly driven by barge transfers and handling.

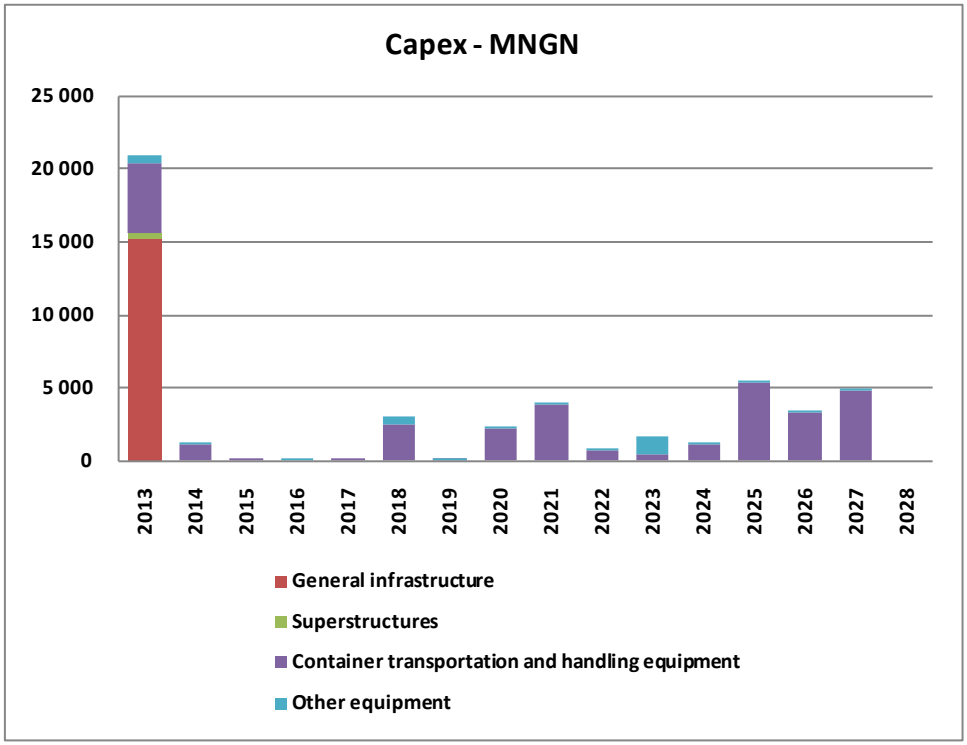
Operating profitability remains however at a satisfactory level, all the more as the high level of the concession fee leaves a buffer for adaptation and/or renegotiation to guarantee the concession's profitability over time.

## 7.4 Capex

The estimated initial investment amounts to about NGN 21 billion. The split of expected capital expenditures is as follows:

- General infrastructure: 72%;
- Superstructures: 2%;
- Container transportation and handling equipment: 23%;
- Other equipment: 3%.

*Fig. 70. CAPEX*




*Source: Axelcium*

The relatively high investments realised in 2014, 2018 and 2021 are due to the purchase of additional cranes and barges in order to accommodate increasing traffic, while other investment peaks can be explained by the renewal of obsolete equipment.

## 7.5 Financing plan

In order to finance such investments, an initial financing plan was designed which includes some equity financing, a shareholder loan and a 1+10-year maturity senior debt.

*Fig. 71. INITIAL SOURCES AND USES OF FUNDS*

| Initial sources and uses of funds (MNGN) | | | |
|---|---|---|---|
| Initial capex | 20 971 | Equity | 4 618 |
| Entry fee | 0 | Shareholder loan contribution | 2 309 |
| Working capital | 114 | Debt drawings (construction period) | 16 162 |
| Interim interests & fees | 1 184 | | |
| Build-up of debt service reserve account | 820 | | |
| **Total** | **23 088** | **Total** | **23 088** |

*Source: Axelcium*

That financing plan is typical of a non-recourse project finance structure and aims at maximising shareholder return while reassuring lenders with regard to sustainability of the project.

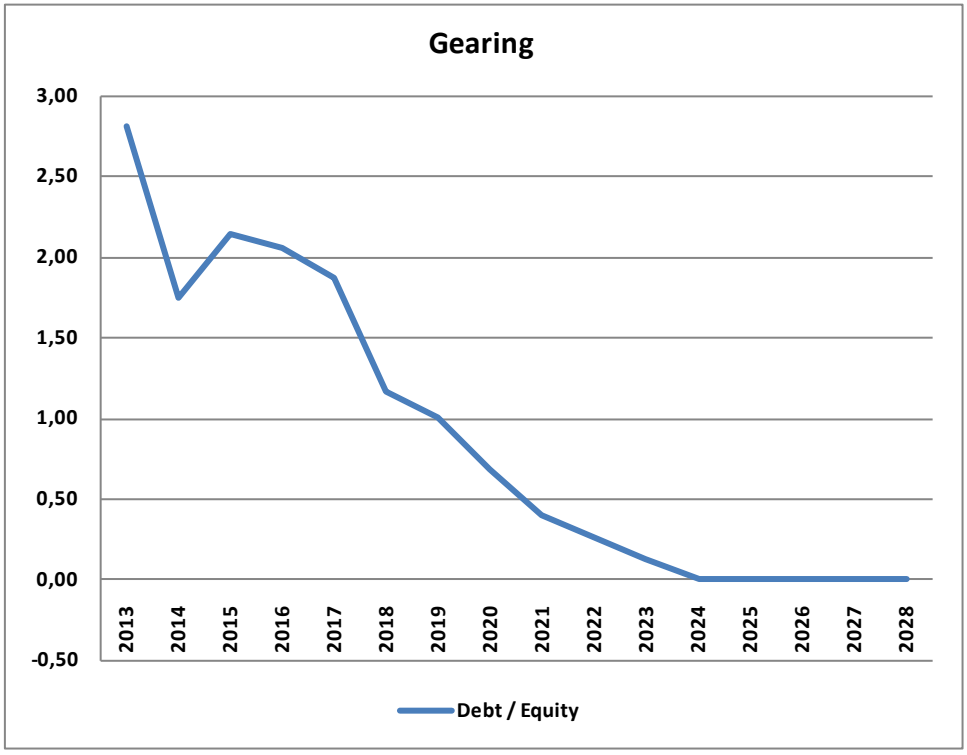
*Fig. 72. SOURCES AND USES OF FUNDS OVER LIFE OF THE CONCESSION*

| Sources and uses of funds over life of the concession (MNGN) | | | |
|---|---|---|---|
| Initial capex | 20 971 | Equity | 4 618 |
| Entry fee | 0 | Shareholder loan contribution | 2 309 |
| Working capital | 114 | Debt drawings (construction period) | 16 162 |
| Interim interests & fees | 1 184 | Debt drawings (operating period) | 0 |
| Build-up of debt service reserve account | 820 | Self-financing | 28 122 |
| Growth capex | 9 605 | | |
| Renewal capex | 18 517 | | |
| **Total** | **51 210** | **Total** | **51 210** |

*Source: Axelcium*

Additional investments will be refinanced by additional debt only as the excess cash generated is automatically redistributed to shareholders. That parameter can however be changed to include a certain level of self-financing.

*Fig. 73. GEARING*



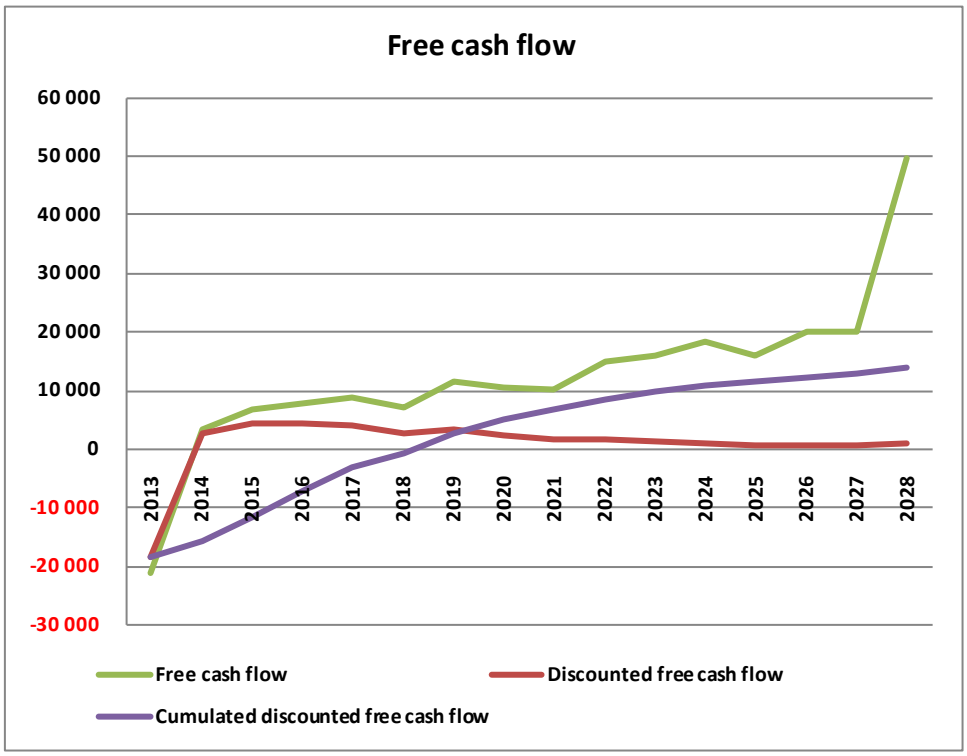

*Source: Axelcium*

The initial gearing of 2.3 corresponds to a 70%/30% debt/equity structure, which is usually acceptable for a project of that nature. That level rises to 2.8 in 2013 due to losses during the construction period and then again to 1.9-2.1 between 2015 and 2018 due to additional debt-financed investments in that period. The ratio then gradually decreases to 0 in 2024 as debt is being repaid.

## 7.6 Free cash flow

The free cash flow remains positive throughout the operating period.

***Fig. 74.*** ***FREE CASH FLOW***




*Source: Axelcium*

The free cash flow follows a general upward trend. The punctual drops observed throughout the operating period relate to investments for growth and/or renewal of equipment.

## 7.7 Financial statements

*Fig. 75. PROFIT & LOSS*

| | 31/12/2013 | 31/12/2014 | 31/12/2015 | 31/12/2016 | 31/12/2017 | 31/12/2018 | 31/12/2019 | 31/12/2020 | 31/12/2021 | 31/12/2022 | 31/12/2023 | 31/12/2024 | 31/12/2025 | 31/12/2026 | 31/12/2027 | 31/12/2028 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Profit & loss** | | | | | | | | | | | | | | | | |
| **Revenues** | **0** | **19 319** | **22 116** | **25 109** | **28 414** | **32 052** | **36 038** | **40 389** | **45 118** | **50 235** | **55 747** | **61 655** | **67 955** | **74 636** | **81 681** | **89 213** |
| Operating revenues | 0 | 19 319 | 22 116 | 25 109 | 28 414 | 32 052 | 36 038 | 40 389 | 45 118 | 50 235 | 55 747 | 61 655 | 67 955 | 74 636 | 81 681 | 89 213 |
| **Opex** | **0** | **11 211** | **12 691** | **14 101** | **15 955** | **17 966** | **19 894** | **22 383** | **25 155** | **28 051** | **30 827** | **34 291** | **37 747** | **41 861** | **46 539** | **51 163** |
| Operations and maintenance costs | 0 | 2 725 | 3 219 | 3 611 | 4 337 | 5 063 | 5 679 | 6 693 | 7 777 | 8 974 | 9 991 | 11 493 | 12 777 | 14 604 | 16 700 | 18 867 |
| Staff expenditures | 0 | 530 | 616 | 698 | 811 | 958 | 1 091 | 1 256 | 1 500 | 1 733 | 1 941 | 2 241 | 2 510 | 2 856 | 3 332 | 3 738 |
| Overhead costs | 0 | 533 | 602 | 672 | 752 | 881 | 975 | 1 121 | 1 319 | 1 454 | 1 589 | 1 750 | 2 065 | 2 329 | 2 674 | 2 824 |
| Taxes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Concession fee | 0 | 7 423 | 8 254 | 9 119 | 10 054 | 11 063 | 12 149 | 13 313 | 14 560 | 15 890 | 17 305 | 18 807 | 20 396 | 22 071 | 23 833 | 25 734 |
| EBITDA | 0 | 8 108 | 9 426 | 11 008 | 12 460 | 14 086 | 16 144 | 18 006 | 19 963 | 22 185 | 24 920 | 27 364 | 30 207 | 32 776 | 35 143 | 38 050 |
| Depreciation | 0 | 1 548 | 1 601 | 1 625 | 1 627 | 1 656 | 1 864 | 1 880 | 2 053 | 2 323 | 2 403 | 2 517 | 2 626 | 2 934 | 3 151 | 3 535 |
| EBIT | 0 | 6 560 | 7 825 | 9 384 | 10 833 | 12 430 | 14 280 | 16 126 | 17 910 | 19 861 | 22 517 | 24 847 | 27 581 | 29 842 | 31 992 | 34 515 |
| Interestx & fees | 1 184 | 1 640 | 1 640 | 1 538 | 1 426 | 1 302 | 1 165 | 1 015 | 849 | 666 | 465 | 244 | -0 | -0 | -0 | -0 |
| Shareholder loan interests & fees | 115 | 121 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Earnings before tax | -1 299 | 4 798 | 6 184 | 7 846 | 9 407 | 11 128 | 13 115 | 15 111 | 17 061 | 19 195 | 22 052 | 24 603 | 27 581 | 29 842 | 31 992 | 34 515 |
| Corporate tax | 0 | 1 439 | 1 855 | 2 354 | 2 822 | 3 338 | 3 935 | 4 533 | 5 118 | 5 758 | 6 616 | 7 381 | 8 274 | 8 953 | 9 597 | 10 354 |
| Net income | -1 299 | 3 359 | 4 329 | 5 492 | 6 585 | 7 790 | 9 181 | 10 578 | 11 943 | 13 436 | 15 436 | 17 222 | 19 307 | 20 889 | 22 394 | 24 160 |

*Source: Axelcium*

***Fig. 76. BALANCE SHEET***

| | 31/12/2013 | 31/12/2014 | 31/12/2015 | 31/12/2016 | 31/12/2017 | 31/12/2018 | 31/12/2019 | 31/12/2020 | 31/12/2021 | 31/12/2022 | 31/12/2023 | 31/12/2024 | 31/12/2025 | 31/12/2026 | 31/12/2027 | 31/12/2028 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Balance sheet** | | | | | | | | | | | | | | | | |
| **Assets** | | | | | | | | | | | | | | | | |
| Intangible assets | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tangible assets | 20 971 | 20 609 | 19 175 | 17 565 | 16 139 | 17 486 | 15 743 | 16 147 | 17 975 | 16 433 | 15 725 | 14 350 | 17 076 | 17 464 | 19 286 | 15 750 |
| Working capital | 114 | 1 517 | 1 725 | 1 972 | 2 217 | 2 486 | 2 809 | 3 132 | 3 486 | 3 855 | 4 292 | 4 713 | 5 207 | 5 698 | 6 201 | 0 |
| Debt service reserve account | 820 | 1 324 | 1 324 | 1 324 | 1 324 | 1 324 | 1 324 | 1 324 | 1 324 | 1 324 | 1 324 | -0 | -0 | -0 | -0 | -0 |
| Cash flow | -0 | 1 934 | 0 | 0 | 0 | 0 | 0 | -0 | 0 | -0 | 0 | -0 | 0 | -0 | 0 | -0 |
| Assets - Total | 21 904 | 25 384 | 22 224 | 20 860 | 19 680 | 21 295 | 19 876 | 20 603 | 22 785 | 21 611 | 21 340 | 19 062 | 22 283 | 23 163 | 25 487 | 15 750 |
| **Liabilities** | | | | | | | | | | | | | | | | |
| Share capital | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 | 4 618 |
| Shareholder loan | 2 424 | 2 545 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Retained earnings | -1 299 | 2 059 | 2 451 | 2 197 | 2 238 | 5 199 | 5 261 | 7 621 | 11 601 | 12 409 | 14 319 | 14 445 | 17 665 | 18 545 | 20 869 | 11 133 |
| Total equity | 5 743 | 9 223 | 7 069 | 6 815 | 6 856 | 9 817 | 9 879 | 12 239 | 16 219 | 17 026 | 18 937 | 19 062 | 22 283 | 23 163 | 25 487 | 15 750 |
| Financial debt | 16 162 | 16 162 | 15 155 | 14 046 | 12 824 | 11 479 | 9 997 | 8 364 | 6 566 | 4 585 | 2 403 | -0 | -0 | -0 | -0 | -0 |
| Liabilities - Total | 21 904 | 25 384 | 22 224 | 20 860 | 19 680 | 21 295 | 19 876 | 20 603 | 22 785 | 21 611 | 21 340 | 19 062 | 22 283 | 23 163 | 25 487 | 15 750 |

*Source: Axelcium*

***Fig. 77. CASH FLOW STATEMENT***

| | 31/12/2013 | 31/12/2014 | 31/12/2015 | 31/12/2016 | 31/12/2017 | 31/12/2018 | 31/12/2019 | 31/12/2020 | 31/12/2021 | 31/12/2022 | 31/12/2023 | 31/12/2024 | 31/12/2025 | 31/12/2026 | 31/12/2027 | 31/12/2028 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cash flow statement** | | | | | | | | | | | | | | | | |
| Opening cash balance | 0 | -0 | 1 934 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EBITDA | 0 | 8 108 | 9 426 | 11 008 | 12 460 | 14 086 | 16 144 | 18 006 | 19 963 | 22 185 | 24 920 | 27 364 | 30 207 | 32 776 | 35 143 | 38 050 |
| Variation of working capital | 114 | 1 403 | 208 | 247 | 245 | 268 | 323 | 323 | 354 | 369 | 437 | 421 | 494 | 492 | 503 | -6 201 |
| Operating cash flow | -114 | 6 705 | 9 217 | 10 761 | 12 215 | 13 817 | 15 821 | 17 682 | 19 609 | 21 815 | 24 483 | 26 943 | 29 713 | 32 284 | 34 640 | 44 252 |
| Corporate tax | 0 | 1 439 | 1 855 | 2 354 | 2 822 | 3 338 | 3 935 | 4 533 | 5 118 | 5 758 | 6 616 | 7 381 | 8 274 | 8 953 | 9 597 | 10 354 |
| Entry fee & intangible assets | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Capex | 20 971 | 1 187 | 166 | 14 | 201 | 2 581 | 109 | 179 | 3 598 | 339 | 0 | 423 | 0 | 284 | 522 | 0 |
| Renewal Capex | 0 | 0 | 0 | 0 | 0 | 422 | 12 | 2 105 | 283 | 441 | 1 695 | 719 | 5 353 | 3 037 | 4 451 | 0 |
| Cash flow before equity raising & debt drawing | -21 084 | 4 078 | 9 130 | 8 393 | 9 191 | 7 476 | 11 765 | 10 865 | 10 610 | 15 276 | 16 173 | 18 420 | 16 086 | 20 010 | 20 070 | 33 897 |
| Equity raising | 4 618 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shareholder loan contribution | 2 309 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Debt drawing | 16 162 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cash flow before debt service | 2 004 | 4 078 | 9 130 | 8 393 | 9 191 | 7 476 | 11 765 | 10 865 | 10 610 | 15 276 | 16 173 | 18 420 | 16 086 | 20 010 | 20 070 | 33 897 |
| Interests & fees | 1 184 | 1 640 | 1 640 | 1 538 | 1 426 | 1 302 | 1 165 | 1 015 | 849 | 666 | 465 | 244 | -0 | -0 | -0 | -0 |
| Repayment | 0 | 0 | 1 007 | 1 109 | 1 222 | 1 346 | 1 482 | 1 633 | 1 798 | 1 981 | 2 182 | 2 403 | 0 | 0 | 0 | 0 |
| Cash flow before DSRA allocation | 820 | 2 438 | 6 483 | 5 746 | 6 544 | 4 829 | 9 118 | 8 218 | 7 963 | 12 629 | 13 526 | 15 773 | 16 086 | 20 010 | 20 070 | 33 897 |
| Variation of debt service reserve account | 820 | 503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1 324 | 0 | 0 | 0 | 0 |
| Repayment of shareholder loan | 0 | 0 | 2 545 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cash flow before dividend distribution | -0 | 1 934 | 3 937 | 5 746 | 6 544 | 4 829 | 9 118 | 8 218 | 7 963 | 12 629 | 13 526 | 17 096 | 16 086 | 20 010 | 20 070 | 33 897 |
| Dividend | 0 | 0 | 3 937 | 5 746 | 6 544 | 4 829 | 9 118 | 8 218 | 7 963 | 12 629 | 13 526 | 17 096 | 16 086 | 20 010 | 20 070 | 33 897 |
| Closing cash balance | -0 | 1 934 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cash flow variation | -0 | 1 934 | -1 934 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*Source: Axelcium*

## 7.8 Financial analysis

### 7.8.1 Foreword

The concept of bankability covers two distinct notions:

- The notion of financial equilibrium: the project generates sufficient cash to allow the concessionaire to meet the financial constraints and covenants imposed by its creditors;
- The notion of financial profitability: the project generates sufficient cash to allow the concessionaire to make a decent return on its investment.

The objective of the section below is to assess as to what extent the project meets those two constraints, looking at specific financial indicators.

### 7.8.2 Financial equilibrium

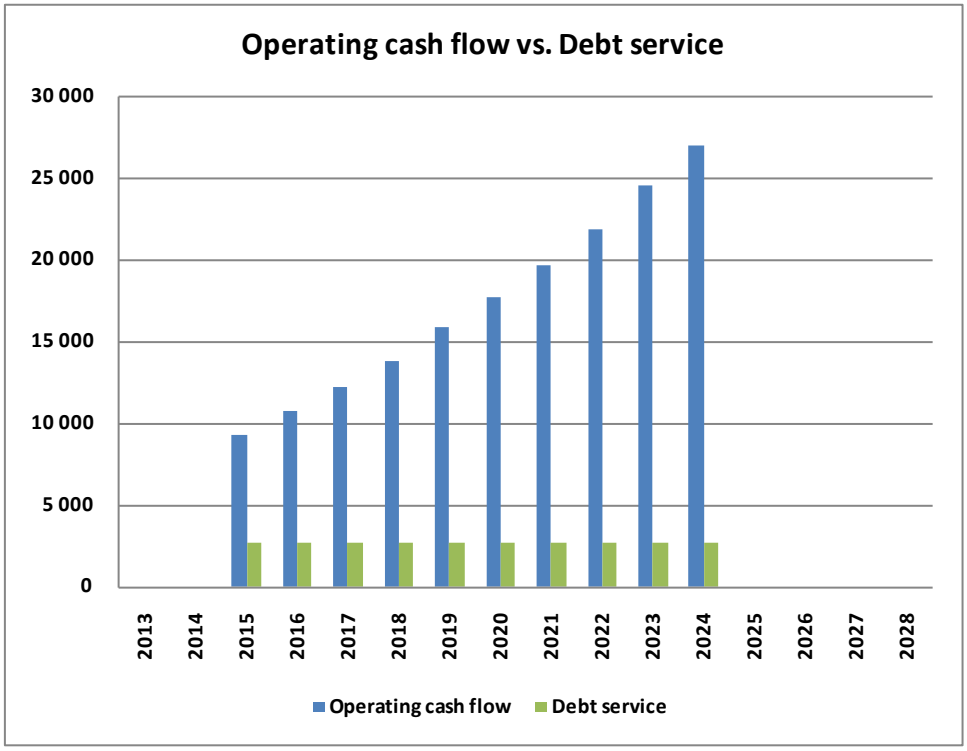
The project reaches financial equilibrium when, throughout the life of the concession:

- The level of cash remains positive;
- The Debt Service Coverage Ratio (DSCR), defined as Operating Cash Flow / Debt Service, remains above a minimum threshold imposed by creditors, usually around 1.3 for a project of that nature;
- The leverage remains at a sustainable level

At this stage those indicators have been calculated on an annual basis. Lenders usually request that they be compared against financial covenants on a more frequent basis – semi-annually or quarterly, depending on the terms and conditions of the loan agreement.

As shown by the cash flow statement above, the level of cash before dividend distribution remains positive throughout the life of the concession.

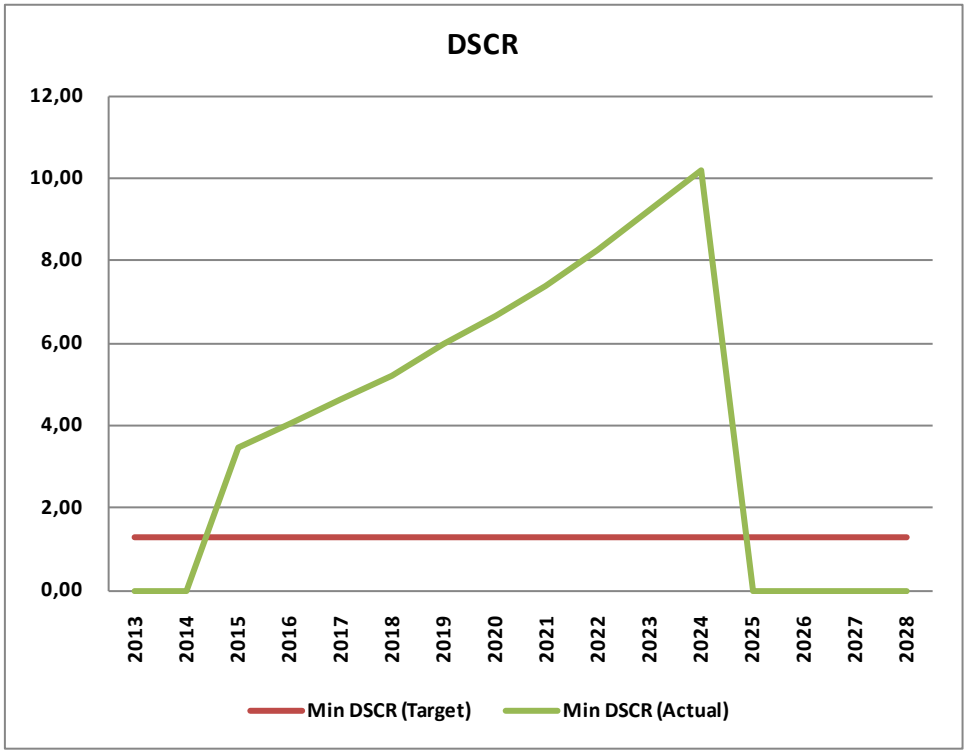
*Fig. 78. OPERATING CASH FLOW VS. DEBT SERVICE*




*Source: Axelcium*

The operating cash flow follows a sharp upward trend. Conversely debt service remains constant over time as self-financing is sufficient to cover growth investments and renewal of equipment. As from 2025 the initial debt is fully repaid.

*Fig. 79. DSCR*




*Source: Axelcium*

*Fig. 80. FINANCIAL EQUILIBRIUM INDICATORS*

| | |
|---|---|
| Min DSCR (Target) | 1,30 |
| Min DSCR (Actual) | 3,48 |
| LLCR | 8,06 |
| PLCR | 7,63 |

*Source: Axelcium*

The observed minimum DSCR is at 3.48, way above the minimum threshold of 1.30. The level of cash flow is largely sufficient to repay the debt.

The Loan Life Coverage Ratio (LLCR), which can be defined as the number of times the discounted cash flows before debt service can repay the outstanding debt balance over the scheduled life of the credit facility, is at 8.06, which is very satisfactory.

The Project Life Coverage Ratio (PLCR), which can be defined as the number of times the discounted cash flows before debt service can repay the outstanding debt balance over the scheduled life of the project, is at 7.63, which unusually enough is lower than the LLCR due to the decreasing storage revenues but remains very satisfactory.

In the Base Case the project seems to meet all financial equilibrium constraints.

### 7.8.3 Financial profitability

Financial profitability constraints can be understood as financial return expectations from the project's investors and lenders, i.e. the project should generate enough cash to ensure

that fund providers get an acceptable return on their investment, represented by the Weighted Average Cost of Capital (WACC).

The WACC was calculated using the Capital Asset Pricing Model (CAPM). It varies with time depending on the indebtedness of the concessionaire: the higher the level of debt, the higher the risk and therefore the higher the cost of equity. The WACC remains however relatively stable between 15.4% and 27.3% throughout the concession period.

The project's financial profitability is assessed by means of two financial indicators:

- The Internal Rate of Return (IRR), defined as the discount rate such that the sum of the project's discounted free cash flows equals zero, which measures the intrinsic profitability of the economic assets;
- The Net Present Value (NPV), defined as the sum of the project's discounted free cash flows using the WACC as discount rate.

In a regulatory approach and in order to reproduce the conditions of a free competitive market whereby operators cannot generate excessive profits, the NPV should be approaching zero, i.e. the IRR should be close to the WACC.

In the present case, the project's financial profitability indicators are as follows.

***Fig. 81. FINANCIAL PROFITABILITY INDICATORS***

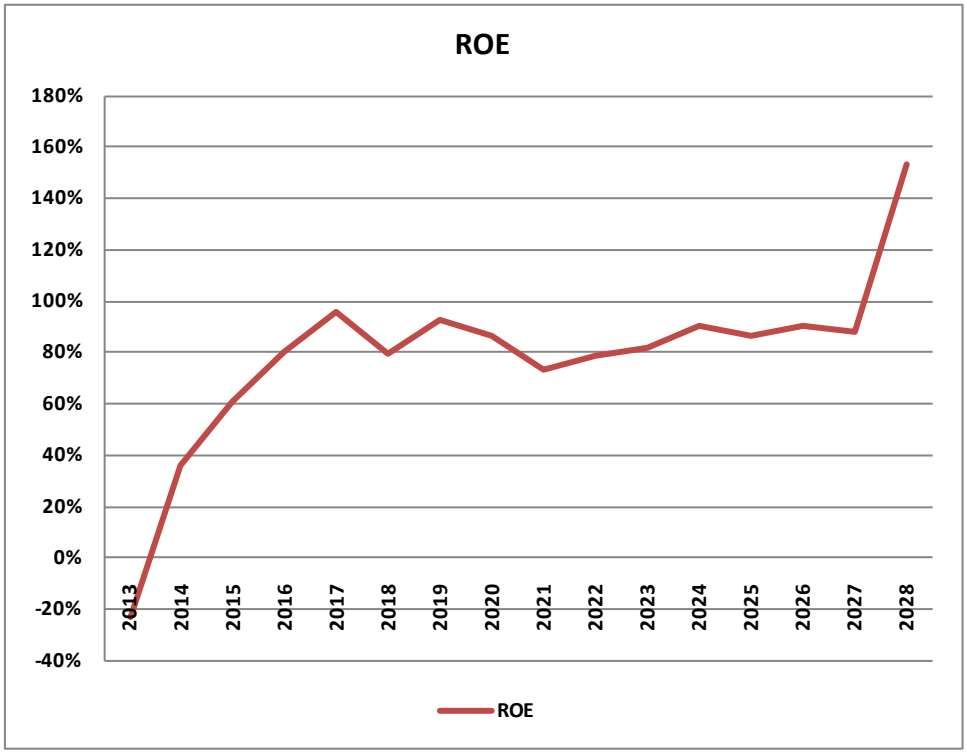
| | |
|---|---|
| WACC (c.e.) | 21,37% |
| Project IRR | 36,19% |
| Project NPV (MNGN) | 13 856 |
| Project NPV (MEUR) | 70 |
| Shareholder return | 60,45% |

*Source: Axelcium*

In the present case the IRR is quite significantly higher than the WACC. Indeed regulation should not put the project's bankability at risk but should guarantee that the project's financial equilibrium constraints be met, lest the project should not attract investors. In this case the level of the concession fee is to be negotiated with potential investors, the objective for NPA being to reduce the gap between the IRR and the WACC to a minimum.

The expected shareholder return is very high at 60.5%, as is the anticipated Return on Equity (ROE).

***Fig. 82. ROE***




*Source: Axelcium*

Indeed the project achieves a very high ROE between 36% and 96% during the first 12 years of operations.

## 7.9 NPA cash-in/cash-out

NPA will collect a concession fee from the concessionaire(s) but also rents from unregulated business units. Conversely NPA will continue to support some Opex, for instance infrastructure maintenance costs related to non container-dedicated quay walls. Depending on the Capex scenario retained, a certain portion of the initial investment will also have to be borne by NPA (the default Capex scenario has the private operator finance all the Capex).

*Fig. 83. NPA CASH-IN/CASH-OUT*

| Cash-In / Cash-out | MNGN |
|---|---|
| Entry fee | 0 |
| Concession fee | 229 971 |
| Lease | 9 172 |
| Total cash-in | 239 143 |
| Capex | 0 |
| Opex (maintenance costs) | 1 475 |
| Total cash-out | 1 475 |
| Balance | 237 668 |
| Capex / Entry fee | NA |

*Source: Axelcium*

Most revenues NPA can draw from KLT are derived from container activities. Out of the estimated NGN 239 billion NPA could collect from the Kirikiri area under Base Case traffic assumptions, a mere NGN 1.5 billion should be allocated to maintenance costs. In the default Capex scenario whereby no initial investment remains to be borne by NPA, the whole of the remaining sum could be devoted to rehabilitation or greenfield projects in other parts of Lagos or Nigeria as a whole.

## 7.10 Sensitivity analysis

A thorough sensitivity analysis was conducted in order to assess the importance of main financial model parameters on the project's bankability.

### 7.10.1 Distressed scenarios

The financial model was first tested with Base Case traffic assumptions in six distinct distressed scenarios.

***Fig. 84. DISTRESSED SCENARIOS***

| Sensitivity | Base Case | Tariff | Traffic | Infrastructure costs | Superstructure costs | Equipment costs | Opex |
|---|---|---|---|---|---|---|---|
| | | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% |
| **Private partner** | | **-10,0%** | **-10,0%** | **10,0%** | **10,0%** | **10,0%** | **10,0%** |
| WACC (c.e.) | 15,08% | 15,07% | 14,92% | 15,23% | 15,08% | 14,84% | 15,09% |
| Project IRR | 39,05% | 32,62% | 36,59% | 37,23% | 39,01% | 38,05% | 37,64% |
| Project NPV (MNGN) | 36 829 | 25 913 | 31 970 | 35 179 | 36 788 | 37 022 | 34 170 |
| Shareholder return | 68,36% | 55,09% | 62,76% | 64,48% | 68,26% | 66,61% | 65,55% |
| Concession Fee | 179 096 | 179 096 | 162 669 | 179 096 | 179 096 | 179 096 | 179 096 |
| Revenues | 729 677 | 656 710 | 656 710 | 729 677 | 729 677 | 729 677 | 729 677 |
| Capex | 49 092 | 49 092 | 47 090 | 50 613 | 49 129 | 52 521 | 49 092 |
| Opex | 179 862 | 178 221 | 164 262 | 179 862 | 179 864 | 180 279 | 197 849 |
| Minimum DSCR | 3,34 | 2,61 | 3,29 | 3,14 | 3,34 | 3,23 | 3,19 |
| **NPA** | | | | | | | |
| Entry fee | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Concession fee | 179 096 | 179 096 | 162 669 | 179 096 | 179 096 | 179 096 | 179 096 |
| Lease | 9 172 | 9 172 | 9 172 | 9 172 | 9 172 | 9 172 | 9 172 |
| Capex | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Opex | 1 475 | 1 475 | 1 475 | 1 475 | 1 475 | 1 475 | 1 623 |
| Capex / Entry fee | NA | NA | NA | NA | NA | NA | NA |

*Source: Axelcium*

*(a)* **Tariff**

A 10% cut in tariffs would have a notable impact on the project's bankability. The project IRR would be reduced by more than 6.4 percentage points down to 32.62%. The project NPV and shareholder return would go down from NGN 37 billion and 68.4% to NGN 26 billion and 55.1% respectively. The level of tariffs seems by far the most sensitive project parameter, which is a rather good sign as the market's high ability to pay should allow the concessionaire to easily raise tariffs should costs prove higher than expected.

*(b)* **Traffic**

A 10% diminution in traffic would have a lesser impact on revenues than the previous scenario as most costs would automatically adapt to the level of traffic: the variable concession fee would go down, as well as operating expenditures and, to some extent, capital expenditures. The project IRR would remain at a high level of 36.6%, while the shareholder return would still reach 62.8%.

*(c)* **Infrastructure costs**

An unexpected 10% increase in infrastructure costs would have a moderate impact on the concessionaire's financial situation. The project IRR would reach 37.2% and the shareholder return 64.5%.

*(d)* **Superstructure costs**

A 10% increase in superstructure costs would have virtually no impact on the concessionaire's financials as cost items from that category represent an insignificant proportion of costs. Superstructure costs are thus the least sensitive of all parameters tested.

*(e)* **Equipment costs**

A 10% increase in equipment costs would also have a moderate impact on the concessionaire's financial situation. The project would still achieve a satisfactory IRR of 38.1%, as well as a high shareholder return of 66.6%.

*(f)* **Opex costs**

Over the life of the concession, Opex costs weigh about 2.5 times more than Capex items on the concessionaire's profitability. A 10% increase in such costs would therefore have a more pregnant impact on the company's financials. In such a case the project IRR would indeed go down to 37.6% and the shareholder return to 65.6%.

### 7.10.2 Low Case

The financial model was also tested under Low Case traffic assumptions. The below indicators give a general overview of the main financial features of the project if such a scenario is realised.

***Fig. 85. FINANCIAL INDICATORS – LOW CASE***

| Financial analysis | | | |
|---|---|---|---|
| WACC (c.e.) | 20,16% | Min DSCR (Target) | 1,30 |
| Project IRR | 31,60% | Min DSCR (Actual) | 2,99 |
| Project NPV (MNGN) | 9 903 | LLCR | 6,77 |
| Project NPV (MEUR) | 50 | PLCR | 6,07 |
| Shareholder return | 52,98% | | |

*Source: Axelcium*

In the Low Case, shareholders still make a very high return of 53.0% on their investment, although that figure represents a 12.4% decrease from the return observed in the Base Case.

***Fig. 86. NPA CASH-IN/CASH-OUT – LOW CASE***

| Cash-in / Cash-out | MNGN |
|---|---|
| Entry fee | 0 |
| Concession fee | 177 070 |
| Lease | 9 172 |
| Total cash-in | 186 242 |
| Capex | 0 |
| Opex (maintenance costs) | 1 475 |
| Total cash-out | 1 475 |
| Balance | 184 767 |
| Capex / Entry fee | NA |

*Source: Axelcium*

Financial transfers to NPA would also be hit as the cumulated concession fees would be reduced by 23%.

The general financial structure would however remain perfectly viable as the DSCR reaches a low point of 2.99, which is still very comfortable in respect of standard covenants generally imposed by lenders.

### 7.10.3 High Case

Under High Case traffic assumptions, the financial situation of the project would be as follows.

***Fig. 87. FINANCIAL INDICATORS – HIGH CASE***

| Financial analysis | | | |
|---|---|---|---|
| WACC (c.e.) | 21,72% | Min DSCR (Target) | 1,30 |
| Project IRR | 40,39% | Min DSCR (Actual) | 3,96 |
| Project NPV (MNGN) | 18 987 | LLCR | 9,71 |
| Project NPV (MEUR) | 96 | PLCR | 9,27 |
| Shareholder return | 67,05% | | |

*Source: Axelcium*

In the High Case, the project IRR is almost twice as high as the WACC, which results in a significantly higher shareholder return of 67.1%.

***Fig. 88. NPA CASH-IN/CASH-OUT – HIGH CASE***

| Cash-in / Cash-out | MNGN |
|---|---|
| Entry fee | 0 |
| Concession fee | 282 872 |
| Lease | 9 172 |
| Total cash-in | 292 044 |
| Capex | 0 |
| Opex (maintenance costs) | 1 475 |
| Total cash-out | 1 475 |
| Balance | 290 569 |
| Capex / Entry fee | NA |

*Source: Axelcium*

NPA also benefits from the increased traffic, although to a lesser extent as the cumulated concession fee is up 23% only as compared to Base Case conditions.

High Case traffic assumptions therefore generate a situation whereby the concessionaire makes excessive profits at the expense of users and/or NPA. In order to remedy that situation, several options can be envisaged:

- NPA could impose lower tariffs on the concessionaire (tariff regulation);
- NPA could increase its share of the profits by raising the concession fee or introducing an entry fee.

# 8. CONCLUSION

## 8.1 Summary

The present Outline Business Case study seems to indicate that the envisaged project concept, being a combination of different independent business units, is economically, technically, legally and financially viable.

From an economic perspective, the project could contribute to reducing road congestion on the access roads to main port terminals at Apapa and Tin Can Island and address some of the challenges faced by most logistics operators, notably the lack of container storage area in the region of Lagos. It would thus provide a new useful purpose for the Kirikiri area, which should eventually leave all economic stakeholders in a better position. The endorsement of the new envisaged layout scenario by current tenants remains to be tested *via* an extensive stakeholder consultation process.

From a technical perspective, the project seems perfectly feasible and would greatly contribute to improving the dire general state of the Kirikiri area. The extent of the works to be conducted and the impact of those works on the environmental condition of the area remain to be confirmed by means of more advanced technical feasibility studies.

From a legal perspective, the institutional and regulatory framework seems favourable and current NPA commitments vis-à-vis current tenants should not represent a major constraint to the implementation of the project. The recommended mixed structuring option addresses specificities of each business unit and could be implemented in a relatively swift manner.

From a financial perspective, the project seems extremely profitable and should not require any government or NPA subsidy. The main questions lie with:

- The nature of the future concessionaire(s);
- Their ability to guarantee a certain level of traffic;
- NPA's ability to impose a regulation and profit-sharing mechanism.

While it is anticipated that the project should generate strong interest, engaging in preliminary talks with local and international container terminal operators, above all with those already present at Lagos port, will provide NPA with an immediate feel for the market's response to the project.

## 8.2 Future steps

Once the Outline Business Case process is completed, a number of actions should be taken by NPA in order to ensure that the project reaches implementation stage.

### 8.2.1 Technical evaluation of the condition of quay walls and channel

The exact condition of quay wall sheet piles remains unknown as erosion has not been regularly monitored. The same can be said with regard to the condition of the channel in terms of number of shipwrecks, accumulation of sediments, etc. As recommended by environmental auditor Labstaff Nigeria Ltd, NPA should have those infrastructures assessed by a specialised firm as soon as possible as this could have an impact on the level of

investment required to rehabilitate them and ultimately on the level of revenues NPA is expected to draw from the concessioning of KLT I & II.

### 8.2.2 Exploration of vessel-to-barge transshipment options

Although it is not vital to the feasibility of the barging project as a whole, vessel-to-barge transshipment would spare unnecessary handling movements for import containers to be ultimately stored at KLT; similarly, barge-to-vessel transshipment would make it possible to bring in empty containers from KLT at the last minute and load them directly onto the container vessel without having them transit on the platform. That technique would thus rationalise the use of mooring posts and handling equipment on main Tin Can Island container terminals.

At present transshipment is however not allowed at TCIPC as the Harbour Master is of the view that due to the limited width of the channel this could represent a navigation obstacle for other vessels trying to moor in Tin Can Island. While safety concerns must obviously prevail over other considerations, the possibility of such transshipment, at least for a couple of mooring posts located at the end of the quay walls, should be assessed in more details as this could greatly improve the efficiency of the envisaged barge transfer system and thus make the project even more attractive.

### 8.2.3 Consultation with stakeholders

Given the number of economic stakeholders impacted by the future organisation of KLT I & II and their conflicting interests and views with regard to the purpose to be assigned to the Kirikiri area, the consultation phase is particularly key to the success of the project and should be kick-started as soon as possible. Indeed NPA could face some initial opposition to the concessioning plan and such consultation process could give NPA the opportunity to outline the project's benefits and contribute to securing stakeholder endorsement.

Amongst stakeholders NPA should rapidly engage with, Apapa and Tin Can Island container operators are to be given particular attention as only they can ultimately provide the sufficient level of traffic to make container operations at KLT viable. Such discussions will give NPA much more indications as to the willingness of existing operators to:

- Dedicate some space or time slots for barges berthing at their main terminals in exchange for increased storage space offered at KLT;
- Form one or two consortia to operate the additional storage space and/or the container barges;
- Accept some form of regulation and/or profit-sharing.

Answers to those questions will be largely determined by negotiation and will ultimately condition the success of the project. It is therefore absolutely essential those operators be associated with the project development as from the Full Business Case stage.

### 8.2.4 Notification of lease terminations

As soon as there is more visibility on the project implementation schedule, NPA should start notifying those tenants which are not expected to fit in the future design of the terminal that

their lease will be terminated or that their TOL will not be renewed. Anticipation in taking those actions will guarantee that the area is legally and physically available for the future concessionaire to take over as soon as all conditions precedent included in the concession agreement are met.

### 8.2.5 Recruitment of Transaction Adviser

In order to ensure smooth transition between the OBC and FBC/transaction stages, NPA should rapidly engage in the process of selecting a Transaction Adviser. The role of the Transaction Adviser should be to:

- Assist NPA for discussions with existing terminal operators;
- Complete the Full Business Case study;
- Help with communication and marketing of the project;
- Prepare draft tender documentation, including technical specifications and the concession agreement;
- Assist with assessing technical and financial bids;
- Facilitate negotiations with the preferred bidder until signature of the concession agreement;
- Provide support with raising finance for the public side of the investment, if any.

## 8.3 Project implementation schedule

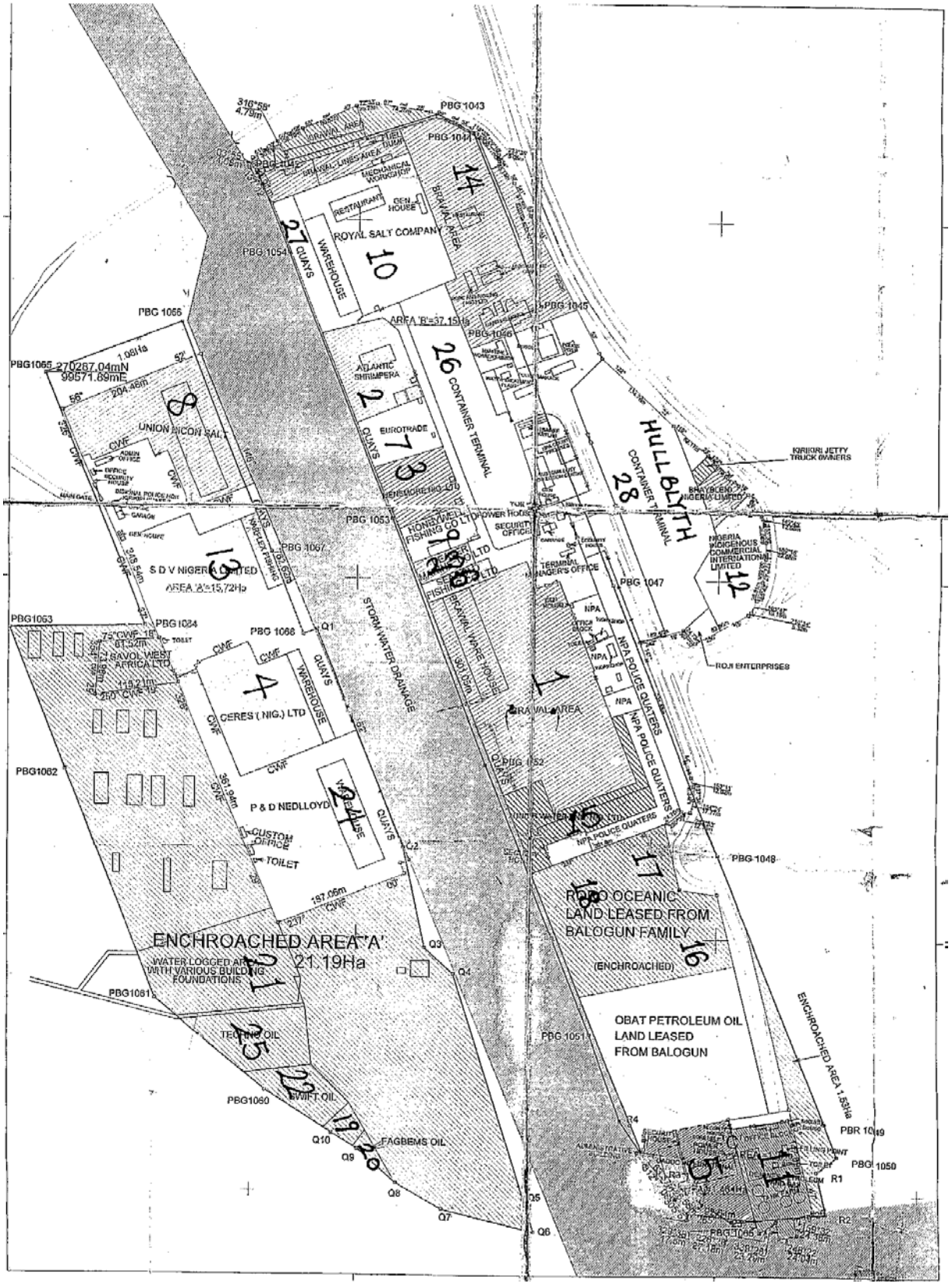
***Fig. 89.*** ***PROJECT IMPLEMENTATION SCHEDULE***

| Activities | July 2012 | August 2012 | Sept. 2012 | October 2012 | Nov. 2012 | Dec. 2012 | January 2013 | February 2013 | March 2013 |
|---|---|---|---|---|---|---|---|---|---|
| Elaboration of Outline Business Case | | | | | | | | | |
| Consultation with stakeholders | | | | | | | | | |
| Recruitment of Transaction Adviser | | | | | | | | | |
| Assessment of quay walls | | | | | | | | | |
| Elaboration of Full Business Case | | | | | | | | | |
| Preparation of tender documents | | | | | | | | | |
| Call for expression of interest | | | | | | | | | |
| Evaluation of expressions of interest | | | | | | | | | |
| Prequalification of bidders | | | | | | | | | |
| Call for tender | | | | | | | | | |
| Evaluation of bids | | | | | | | | | |
| Selection of preferred bidder | | | | | | | | | |
| Negotiation with preferred bidder | | | | | | | | | |
| Signature of concession agreement | | | | | | | | | |
| Arrangement and negotiation of funding | | | | | | | | | |
| Financial close | | | | | | | | | |

*Source: Axelcium*

# 9. APPENDICES

## 9.1 Appendix 1: Schedule of leases



| S/NO | NAME & ADDRESS OF LESSEES | LOCATION OF LESSSESS | EXTENT OF LAND | LEASE PERIOD | EFFECTIVE DATE | EXP. DATE | REVIEW PERIOD | APPROVED USER | RENT P/A (N) | REMARK |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Brawal Shipping Ltd KLT 1, Apapa, Lagos | W/H at KLT Stacking Area 'A' 'B' 'D' | 6000M2<br>96067M2<br>4547.51M2<br>4202.2M2 | 2YRS<br>2YRS<br>2YRS<br>2YRS | 11-01-08<br>11-01-08<br>11-01-08<br>11-01-08 | 31/10/2010<br>31/10/2010<br>31/10/2010<br>31/10/2010 | 2YRS<br>2YRS<br>2YRS<br>2YRS | Stacking<br>Storage<br>Office<br>& W/H | 14,400,000.00<br>9,606,670.00<br>4,547,510,00<br>4,202,200.00 | |
| 2. | Atlantic Shrimpers KLT 1 P.O. Box 553 Apapa, Lagos | Paved Stacking Area @ KLT 1 TOL | (includes area held on licence) | 5YRS | 01-01-06 | 31/12/2010 | 3YRS | Cold storage & Office, Parking | 4,301,161.50 | |
| 3. | Hensmor Nigeria Limited | Paved Area @ KLT 1 | 9,750M2 | 3YRS | 15/6/2002 | 14/12/2002 | 3YRS | Storage Tanks | 1,072,500.00 | Subjudice |
| 4. | Ceres Nigeria Limited 52, Burma Way, Yaba, Lagos | Stacking Area | 22000M2 | 5YRS | 01/01/97 | 31/12/2002 | 3YRS | Vegetable Oil Factory | 18,700,000.00<br>3,432,000.00<br>On Offer Letter | Under process of recovery |
| 5. | Daddo International Limited 13A Elato Opebi Street, V/I, Lagos | Land Lease @ KLT | 1.804HA | 21YRS | 29-04-11 | 28-04-12 | | Storage/W/H Repair of fishing facilities | 15,334,000.00 | |
| 6. | Seagold Fishing Co. KLT 1 | Paved Area @ KLT 1 | 2385M2 | 5YRS | 01-01-08 | 31/12/2013 | 3YRS | Storage | 2,027,250.00 | |
| 7. | Barnarly Nigeria Limited (Formerly Eurotrade Nigeria Limited) | Land Lease @ KLT 1 Quay (Exc. Use | 6604.61M12<br>507.96M1 | 5YRS | 07/01/09 | 30/6/2014 | 3YRS | Storage | 3,303,305.00<br>2,538,900.00 | |
| 8. | Union Dicon Salt P.O. Box 3208 | W/H @ KLT 11 | 600M2<br>5699.25M2<br>10396M2<br>0.405HA | 5YRS | 11-01-89 | | 3YRS | Salt Factory | 5,100,000.00<br>4,818,650.00<br>5,150,000.00<br>3,792,084.00 | |
| 9. | Tikko Marine Service 13, Agoro Odiyan Street, Off Adeola Odeku Street, Victoria Island, Lagos | W/H @ KLT 1 Paved Area @ KLT 1 Unpaved Area | 4461.27M2 | 5YRS | 15-08-10 | 14-08-11 | 3YRS | Fishing Operation | 3,792,084.00 | |
| 10. | Royal Salt Limited 14, Ademola Street South West Ikoyi Lagos | W/H @ KLT 1 Paved Area @ KLT 1 Unpaved Area | 6000M2<br>20328M2<br>1888M2 | 5YRS<br>5YRS<br>5YRS | 02-01-08<br>02-01-08<br>02-01-01 | 31-1-2013<br>31-1-2013<br>31-1-2013 | 3YRS<br>3YRS<br>3YRS | Salt Factory<br>Stacking<br>Stacking | 12,000,000.00<br>17,278,8000<br>944,000.00 | |
| 11. | Dee Jones Fisheries Limited 36, Orishe Street Ikeja P.O. Box 5262 | Land Lease @ KLT 1 | 1.462HA | 2YRS | 01-07-12 | 30-06-14 | 5YRS | Warehouse Maintenance Depot & Office | 21,930,000.00 | |
| 12. | N.I.C.E. Limited | Land Lease @ KLT 1 | 11,217.40 | 5YRS | 12-01-07 | 30-11-12 | 3YRS | Factory | 5,608,700.00 | |
| 13. | S. D. V. Nigeria Limited | Land Lease @ KLT II | 4.307 | 2YRS | 03-08-11 | 03-07-13 | 2YRS | Off-Dock Containers | 36,609,500.00 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 26 Creek Road Apapa, Lagos | | Hectares | | | | | | | |
| 14. | Brawal Shipping Nig. | Land Lease @ KLT 1 | 4.07Ha | 21YRS | 06-01-99 | 31-05-2020 | 5YRS | Office dvt etc | 8,150,000.00 | |
| 15. | Underwater Engineering<br>44, Kofo Abayomi Avenue, P.M.B 1171 Apapa, Lagos | Paved Area @ KLT 1<br>Unpaved Area @ KLT 1<br>Quya Apron | 2419.96M2<br>1319.04M2<br>3167.718M2 | 2YRS | 09-01-08<br>09-01-08<br>09-01-08 | 31-08-2010<br>31-08-2010<br>31-08-2010 | 3YRS<br>3YRS<br>3YRS | Office/Storage of Materials for repairs of Boats, Barges, Tugs & Vessels | 21,996,740.00 | |
| 16. | Confluence Oil & Gas Limited<br>16C, King Perekunl Street, Port Harcourt, GRA Phase II | Bare land @ Kirikiri Phase 1 KLT | 1.3HAC | 5YRS | 11-01-08 | 31-10-2013 | 3YRS | Electrical Equipment Production and Office Use | 2,600,000.00<br>1,300,000 On Offer Letter | |
| 17. | Glantre (Nig.) Limited<br>15, Olukole Street, Surulere, Lagos | Land Lease @ KLT Phase 1 | 1.3Hactares | 5YRS | 11-01-09 | 31-10-2014 | 3YRS | Warehouse & Stacking Area for Oil and Gas | 2,600,000.00 | |
| 18. | Eletra Holding Limited<br>34, Warehouse Road Apapa Lagos | Land Lease @ KLT Phase 1 | 1.4Hactares | 5YRS | 11-01-09 | 31-10-2014 | 3YRS | Electrical Equipment Production | 2,800,000.00 | |
| 19. | Bovas Oil | Land Lease @ KLT II | Unpaved Stacking Area (11,500M2) | 5YRS | 12-01-09 | 30-11-2014 | 3YRS | Petroleum Product Tank Farm | 5,750,000.00<br>1,784,812.50 On Offer Letter | |
| 20. | Fatbgams Petroleum Company Limited<br>100, Abeokuta Ibadan Road<br>Car Wash | Land Lease @ KLT II | Unpaved Stacking Area (8778.74M2) | 5YRS | 12-01-09 | 30-11-2014 | 3YRS | Petroleum Products Tank Farm | 4,389,370.00 | |
| 21. | Index Petroleum | Land Lease @ KLT II | Unpaved Stacking Area (7,825.00M2) | 1YR | 01-01-10 | 31-12-2010 | 3YRS | Petroleum Products Tank Farm | 3,912,500.00<br>821,437.50<br>On Offer Letter | |
| 22. | Swift Oil Limited (term of lease not stated in agreement) | Land Lease @ KLT II | Unpaved Stacking Area (11,000M2) | 5YRS | 01/01/10 | 30-12-2014 | 3YRS | Petroleum Products Tank Farm | 5,500,000.00 | |
| 23. | Ladol Intl. Log<br>1601 Adeola Hopewell, Victoria Island | KLT I | 1200M2 | 2YRS | 01-08-11 | 31-7-12 | 2 YRS | Storage | 1,020,000.00 | |
| 24. | Sageto Ltd. | Land lease KLTII | 3,000M2 | 2YRS | 15-10-11 | 14-10-13 | 2YRS | Storage | 6,000,000 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 25. | Royal Salt | | Stacking area | | | | | | | |
| 26. | Royal Salt | | Quays area | | | | | | | |
| 27. | HullsBlyth | | | | | | | | | |

## 9.2 Appendix 2: Schedule of Temporary Occupation Licenses

| S/N | NAME OF TENANTS | LOCATION | AREA | COMMENCEMENT DATE | APPROVED USER | RENT PER ANNUM |
|---|---|---|---|---|---|---|
| 1 | Messrs. Douglas Ejoor | Space for repair of vehicle at KLT II | 594.36m$^2$ | 01-01-96 | Repairs of vehicle | N505,206.00 |
| 2 | Karflex Fisheries Ltd. | Space for repairs of boat at KLT II | 324m$^2$ | 04-01-00 | Container space | N275,400.00 |
| 3 | Hycent Aniedu | Space for vehicle repairs at KLT II | 752.96m$^2$ | 01-01-88 | Repairs of vehicles | N695,840.00 |
| 4 | Mansco Mechanical Engr. Co | Space for vehicle repairs at KLT II | 517m$^2$ | 01-01-99 | Repairs of vehicles | N439,450.00 |
| 5 | Mrs. E.E. Taiwo | Container space for office at KLT II | 18m$^2$ | 07-01-01 | Container space | N15,000.00 |
| 6 | Access Bank | Containerized office | 162.40m$^2$ | 11-01-03 | Banking office | N162,400.00 |
| 7 | Dalia Farms & Fisheries | Space within the terminal at KLT II | Fishing Jetty | 01-01-02 | Fishing operation | N76,500.00 |
| 8 | Kpandu Fisheries Ltd. | Information not provided | Information not provided | 01-01-08 | Fishing operation | N321,656.25 |
| 9 | Savol West Africa Ltd. | Paved Stacking Area KLT II | 2,016m$^2$ | 08-01-09 | Stacking container | N1,713,600.00 |
| 10 | ORC Fishing | Space for fishing operation | 1400m$^2$ 1200m$^2$ | 09-01-09 | Fishing terminal | Cancelled N1,020,000.00 |
| 11 | Master Marine | Stacking area at KLT II | 400m$^2$ | 05-01-09 | Fish & Dry dock | N340,000.00 |
| 12 | Bridge Deck Marine Ltd. | Fishing | 130m$^2$ | 05-01-09 | 31/4/10 | N110,500.00 |
| 13 | Hammanton Sage Investment | Pave Land Adjoining Warehouse of Ceres at KLT II | 300m$^2$ | 05-01-07 | Fishing operation | N255,000.00 |
| 14 | Aibob Fisheries | Stacking area at KLT II | 312.50m$^2$ | 01-01-09 | Fishing operation | N265,625.00 |
| 15 | Chizor Iyke Agency Nig. Ltd. | Container pace at KLT I | 15m$^2$ | 03-01-10 | Business centre | N60,000.00 |
| 16 | Diyefibs General Contractor | Container space at KLT II | 15m$^2$ | 03-01-10 | Mini Canteen | N60,000.00 |
| 17 | Comet Shipping Agencies (Nig.) Limited | Paved stacking area, Warehouse Quay Apron | 3,000m$^2$ | Information not provided | Storage of container and vehicles | N17,734,750.00 |
| 18 | Ngozi Nnabugwu | Unpaved space | 15m$^2$ | Information not provided | Information not provided | N60,000.00 |
| 19 | Mrs. Elizabeth Tekura | Containerised space at KLT I | 18m$^2$ | 01-01-01 | Container office | N15,300.00 |
| 20 | New Moon Nig. Ltd. | Containerised space at KLT I | 16.51m$^2$ | 01-03-08 | Container office | N33,020.00 |
| 21 | Alhaji Alisokoto Raba | Containerised space at KLT I | 100m$^2$ | 08-01-04 | Stocking and sales of cement | N85,000.00 |
| 22 | Aimie & Satchel Ltd. | Unpaved stacking area KLT I | 2606.84m$^2$ | 02-01-09 | Stacking of container | 1,303,420.00 |
| 23 | HullBlyth Shipping Ltd. | Paved stacking area at KLT I | 35.820m$^2$ | 02-01-09 | Container storage | Single rate |
| 24 | BMG Resource | Containerised space at KLT I | 15m$^2$ | 05-01-09 | DTI office | N30,000.00 |
| 25 | Standards Organisation of Nigeria | Containerised space at KLT I | 15m$^2$ | 10-01-09 | DTI office | N60,000.00 |
| 26 | Aero Maritime | Land space for | 161.6m$^2$ | 01-01-83 | Workshop office | N137,360.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Nig. Ltd. | parking office and plant equipment at KLT I | 8,354m$^2$<br>29.28m$^2$<br>2,297.24m$^2$ | 01-01-90<br><br>01-01-90 | | N7,100,900.00<br>N24,888.00<br>N1,952,654.00 |
| 27 | Royal Salt | Unpaved space | 1,500m$^2$ | 22-08-11 | Storage | N750,000.00 |

## 9.3 Appendix 3: Schedule of Capex

| Asset Class | Quantity | | | Unit Price (EUR) | Unit Price (NGN) | Total price | Economic depreciation | Maintenance (NGN) | | Operational Costs (NGN) |
|---|---|---|---|---|---|---|---|---|---|---|
| | KLT I (16,3 ha) | KLT II (15,7 ha) | Total | | | | | Quantity | Cost | Cost |
| General infrastructure | | | | | | 16 181 | | | | |
| Site cleaning | 162 500 m² | 157 000 m² | 319 500 m² | 0,80 /m² | 157 /m² | 50 | 1 year(s) | | | |
| Gutters | 1 040 ml | 1 200 ml | 2 240 ml | 75,00 /ml | 14 757 /ml | 33 | 50 year(s) | | | |
| Construction / Rehabilitation of stacking area | 66 875 m² | 23 550 m² | 90 425 m² | 110,00 /m² | 21 644 /m² | 1 957 | 50 year(s) | 32 000 m² | 108,22 /m² | |
| Lighting masts | 6 | 9 | 15 | 110 000 | 21 643 786 | 325 | 30 year(s) | 15 | 7 171 964 /y | |
| Electrical network | 162 500 m² | 157 000 m² | 319 500 m² | 10,00 /m² | 1 968 /m² | 629 | 30 year(s) | | | |
| Water network | 162 500 m² | 157 000 m² | 319 500 m² | 2,00 /m² | 394 /m² | 126 | 30 year(s) | | | |
| Block wall fence | 1 000 ml | 1 100 ml | 2 100 ml | 40,00 /ml | 7 870 /ml | 17 | 50 year(s) | | | |
| Reinforced concrete platform for crane (per crane) | 425 m3 | 425 m3 | 850 m3 | 350,00 /m3 | 68 867 /m3 | 59 | 50 year(s) | 850 m3 | | |
| Quay wall for fishery terminal | 400 ml | 0 ml | 400 ml | 30 000,00 /ml | 5 902 851 /ml | 2 361 | 50 year(s) | 400 ml | 59 028,51 /ml | |
| Quay wall (whole) | 1 050 ml | 750 ml | 1 800 ml | 30 000,00 /ml | 5 902 851 /ml | 10 625 | 50 year(s) | 1 800 ml | 59 028,51 /ml | |
| Quay wall for Royal Salt | 70 ml | | 70 ml | 30 000,00 /ml | 5 902 851 /ml | 413 | 50 year(s) | 70 ml | 59 028,51 /ml | |
| Quay wall for marine activities | 50 ml | | 50 ml | 30 000,00 /ml | 5 902 851 /ml | 295 | 50 year(s) | 50 ml | 59 028,51 /ml | |

| Asset Class | Quantity | | | Unit Price (EUR) | Unit Price (NGN) | Total price | Economic depreciation | Maintenance (NGN) | | Operational Costs (NGN) |
|---|---|---|---|---|---|---|---|---|---|---|
| | KLT I (16,3 ha) | KLT II (15,7 ha) | Total | | | | | Quantity | Cost | Cost |
| Superstructures | | | | | | | | | | |
| Management office building | 100 m² | 700 m² | 800 m² | 500,00 /m² | 98 381 | 79 | 30 year(s) | 800 m² | 2 951,43 /m² | |
| Customs office building | 400 m² | 400 m² | 800 m² | 400,00 /m² | 78 705 | 63 | 30 year(s) | | | |
| NPA office building | 200 m² | 200 m² | 400 m² | 400,00 /m² | 78 705 | 31 | 30 year(s) | | | |
| Entry/exit gate | 200 ml | 200 ml | 400 ml | 300,00 /ml | 59 029 | 24 | 30 year(s) | 400 ml | 983,81 /ml | |
| Mechanical workshop | 800 m² | 800 m² | 1 600 m² | 300,00 /m² | 59 029 | 94 | 30 year(s) | 1 600 m² | 1 967,62 /m² | |
| Refectory/locker room | 200 m² | 200 m² | 400 m² | 300,00 /m² | 59 029 | 24 | 30 year(s) | 400 m² | 1 967,62 /m² | |
| Generator house | 150 m² | 150 m² | 300 m² | 200,00 /m² | 39 352 | 12 | 30 year(s) | 300 m² | 1 967,62 /m² | |
| Fuel station | 1 | 1 | 2 Unit | 10 000 / Unit | 1 967 617 | 4 | 30 year(s) | | | |

| Asset Class | Quantity | | | Unit Price (EUR) | Unit Price (NGN) | Total price | Economic depreciation | Maintenance (NGN) | | Operational Costs (NGN) |
|---|---|---|---|---|---|---|---|---|---|---|
| | KLT I (16,3 ha) | KLT II (15,7 ha) | Total | | | | | Quantity | Cost | Cost |
| Container transportation and handling equipment | | | | | | | | | | |
| 45t Reach stacker | | | | 350 000 | 68 866 592 | | 7 year(s) | | 11 805 701 / Unit | 15 740 935 / Unit |
| 16t Forklift | | | | 285 000 | 56 077 082 | | 7 year(s) | | 6 886 659 / Unit | 10 821 893 / Unit |
| Tugmaster | | | | 125 000 | 24 595 211 | | 10 year(s) | | 2 410 331 / Unit | 3 098 997 / Unit |
| Mobile crane | | | | 3 750 000 | 737 856 338 | | 12 year(s) | | 49 190 423 / Unit | 36 400 913 / Unit |
| Barge | | | | 1 200 000 | 236 114 028 | | 30 year(s) | | 4 919 042 / Unit | 0 / Unit |
| Tug | | | | 1 600 000 | 314 818 704 | | 30 year(s) | | 12 592 748 / Unit | 29 514 254 / Unit |
| 40' Trailer | | | | 25 000 | 4 919 042 | | 20 year(s) | | 787 047 / Unit | 0 / Unit |
| Spare twin lift spreader | | | | 230 000 | 45 255 189 | | 8 year(s) | | 1 967 617 / Unit | 0 / Unit |
| Quay wall for containers (per mooring post) | | | 70 ml | 30 000,00 /ml | 5 902 851 | | 50 year(s) | | 59 028,51 /ml | 0 / Unit |

| Asset Class | Quantity | | | Unit Price (EUR) | Unit Price (NGN) | Total price | Economic depreciation | Maintenance (NGN) | | Operational Costs (NGN) |
|---|---|---|---|---|---|---|---|---|---|---|
| | KLT I (16,3 ha) | KLT II (15,7 ha) | Total | | | | | Quantity | Cost | Cost |
| Other equipment | | | | | | | | | | |
| Tanker truck (for crane and handling equipment refuelling) | 1 | 1 | 2 Unit | 100 000 | 19 676 169 | 39 | 15 year(s) | | 1 450 043 / Unit | 1 657 192 / Unit |
| Mobile workshop truck | 1 | 1 | 2 Unit | 60 000 | 11 805 701 | 24 | 15 year(s) | | 1 035 745 / Unit | 621 447 / Unit |
| Van | | | | 25 000 | 4 919 042 | | 7 year(s) | | 621 447 / Unit | 517 873 / Unit |
| Pick-up vehicle | | | | 20 000 | 3 935 234 | | 7 year(s) | | 725 022 / Unit | 580 017 / Unit |
| Light vehicle | | | | 30 000 | 5 902 851 | | 5 year(s) | | 621 447 / Unit | 517 873 / Unit |
| 500 kVA generator | 1 | 1 | 2 Unit | 130 000 | 25 579 020 | 51 | 15 year(s) | | 7 457 364 / Unit | 22 372 092 / Unit |
| 100 kVA generator | 1 | 1 | 2 Unit | 40 000 | 7 870 468 | 16 | 15 year(s) | | 3 107 235 / Unit | 7 457 364 / Unit |
| Maintenance equipment | 1 | 1 | 2 Unit | 4% | 8 | 0 | 10 year(s) | | | 0 / Unit |
| IT system & equipment | 1 | 1 | 2 Unit | 500 000 | 98 380 845 | 197 | 5 year(s) | | | 0 / Unit |