ALP Seminar Series

Nigeria's Power Privatisation

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1. Overview of Nigeria's Power Sector

Overview of Nigeria’s Power Sector

Key points

At 12kwh/Capita Nigeria has by far the lowest per Capita access to electricity among Emerging Economies. South Africa’s 478 kwh/Capita, is the highest in Africa

Nigeria’s target of 40,000MWs by 2020 translates to 100kwh/Capita

Introduction

- Nigeria has the largest population in Africa of over 160 million.
- Between 2005 and 2010 GDP per capita doubled, and GDP (US$1,700 per capita – 2011) has consistently grown year on year by about 6-8%. This is one of the fastest growth rates globally.
- By contrast, power production has lagged growth dramatically. At 1 2kw/h per capita, state owned ***available*** capacity of around 3,500MW out of 8,500MW ***theoretical***, and a penetration rate of less than 50% of population, power supply is massively lagging current demand (believed to be in excess of 20,000MW), so the 20,000MW of the private sector is not enough to bridge the difference.
- Nigeria target 40,000MW generating capacity by 2020 and will need to spend approximately $10bn per annum on the power sector for the next 10 years to achieve this.
- Nigeria has embarked on the privatisation of its power sector. It will develop its power sector incrementally, starting with the privatisation of its existing assets, the sale of state projects to the private sector, and the provision of additional power from the private sector.
- Enabling legislation and regulation is in place. The challenge will be the execution of a policy of such magnitude and significance.
- Though, the privatisation agency, the BPE, has experienced challenges with keeping to timelines and execution

Overview of Nigeria's Power Sector

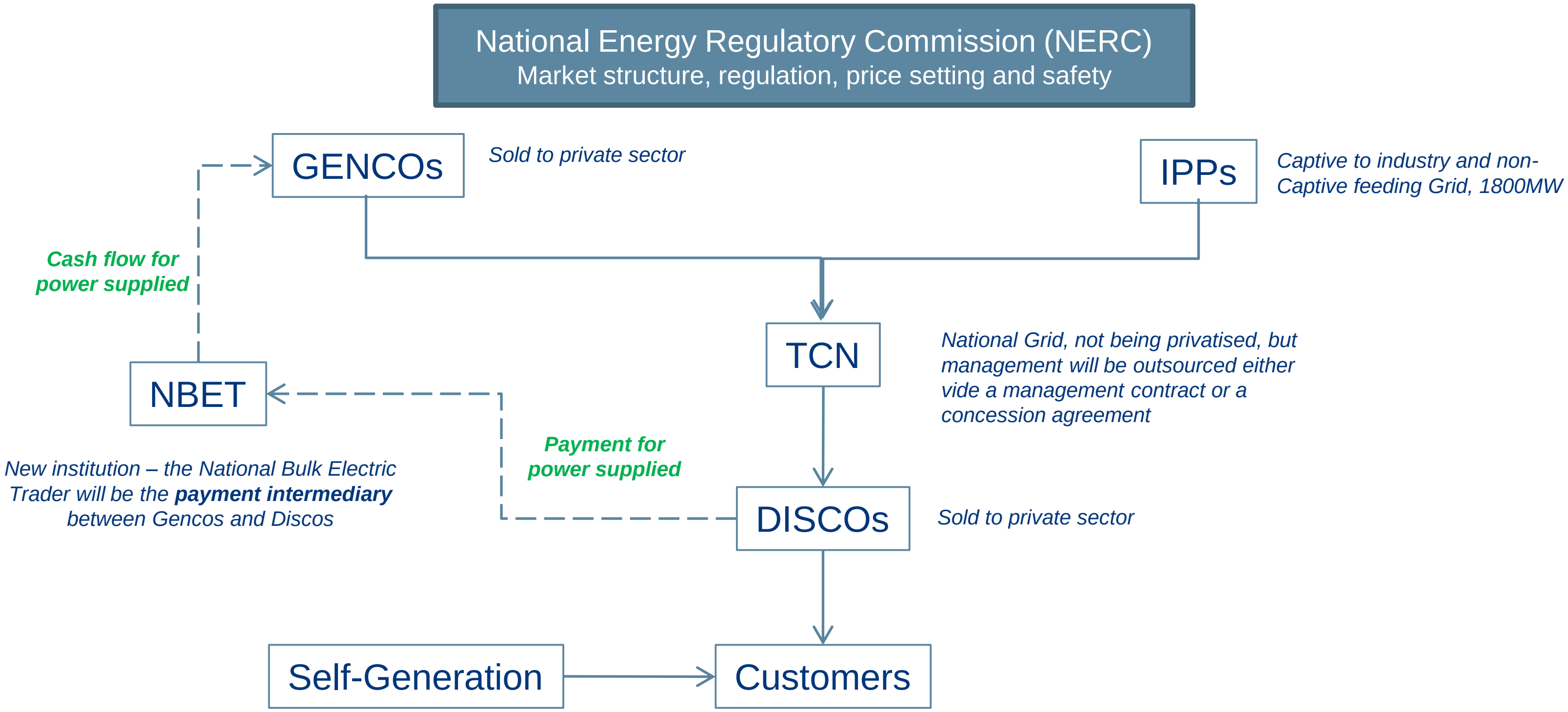
Key points

The current power set up in Nigeria is conventional, but is extremely inefficient, with poor availability, massive transmission losses, poor service and collection.

A modest improvement by the private sector on the current structure alone will represent a major step change in Nigeria.

PHCN Privatisation

- The privatisation process commenced in 2010 with the unbundling of PHCN and creation of Public Companies including Generating Companies ("Gencos"), Distribution Company ("Discos"), and the Nigerian Bulk Electricity Trading Company.
- In the post-privatized power sector NBET purchases power generated by the Gencos and Independent Power Producers at an agreed price stated in Power Purchase Agreements (PPA) and resells to the Discos who deliver the power to the end consumer.
- The National Energy Regulatory Commission ("NERC") regulates NBET and negotiates the PPA with the private generation companies on its behalf.



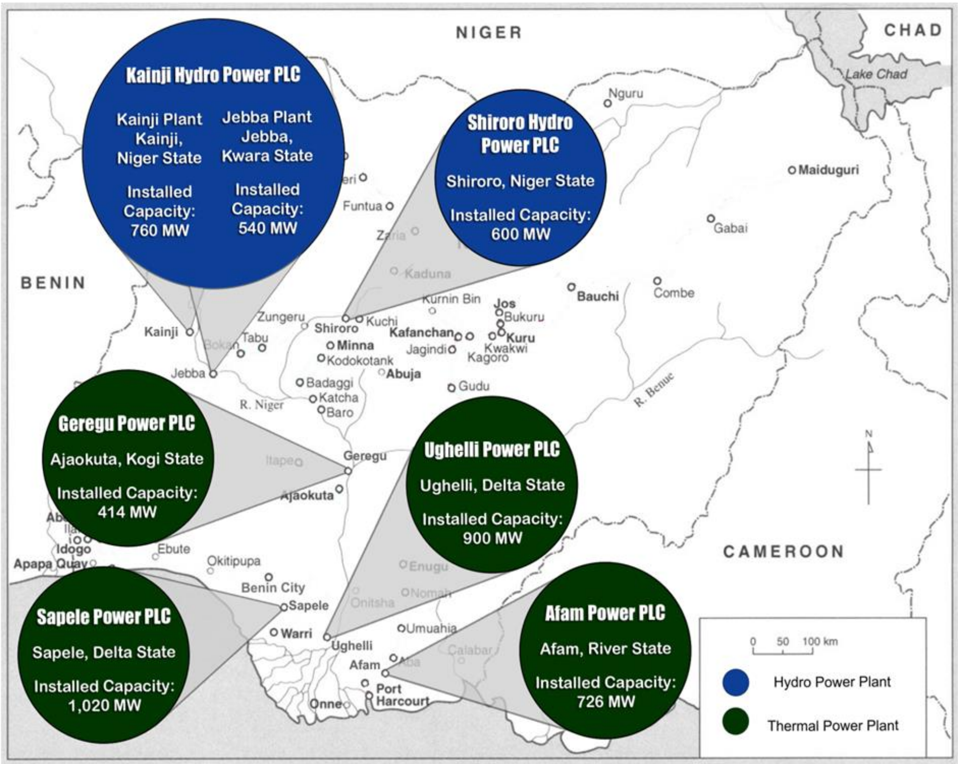
Overview of Nigeria’s Power Sector

Key points

Most public owned power generating facilities are highly inefficient, running at less than 40% of installed capacity. ATC&C (Aggregate , Technical, Commercial and Collection) losses more than 60%

Currently, power plants are prone to unplanned plant shutdowns.

Genco Privatisation



Name of GENCO	Installed Capacity (MW)	Availabl e Capacity (MW)	Private Participation
*Afam Power Plc	**776MW**	45MW	100% Equity
Geregu Power Plc	414MW	361MW	[51%] Equity
Sapele Power Plc	1,020MW	135MW	100% Equity
Ughelli Power Plc	900MW	228MW	100% Equity
** Kainji Power Plant	760MW	350MW	Long Term Concession
** Jebba Power Plant	578MW	482MW	Long Term Concession
Shiroro Power Plc	600MW	393MW	Long Term Concession

**Afam Power Plc is different from Shell Afam VI Power Station*
*** Kainji Power Plant and Jebba Power Plant are owned by Kainji Hydro Power Plc.*

Overview of Nigeria's Power Sector

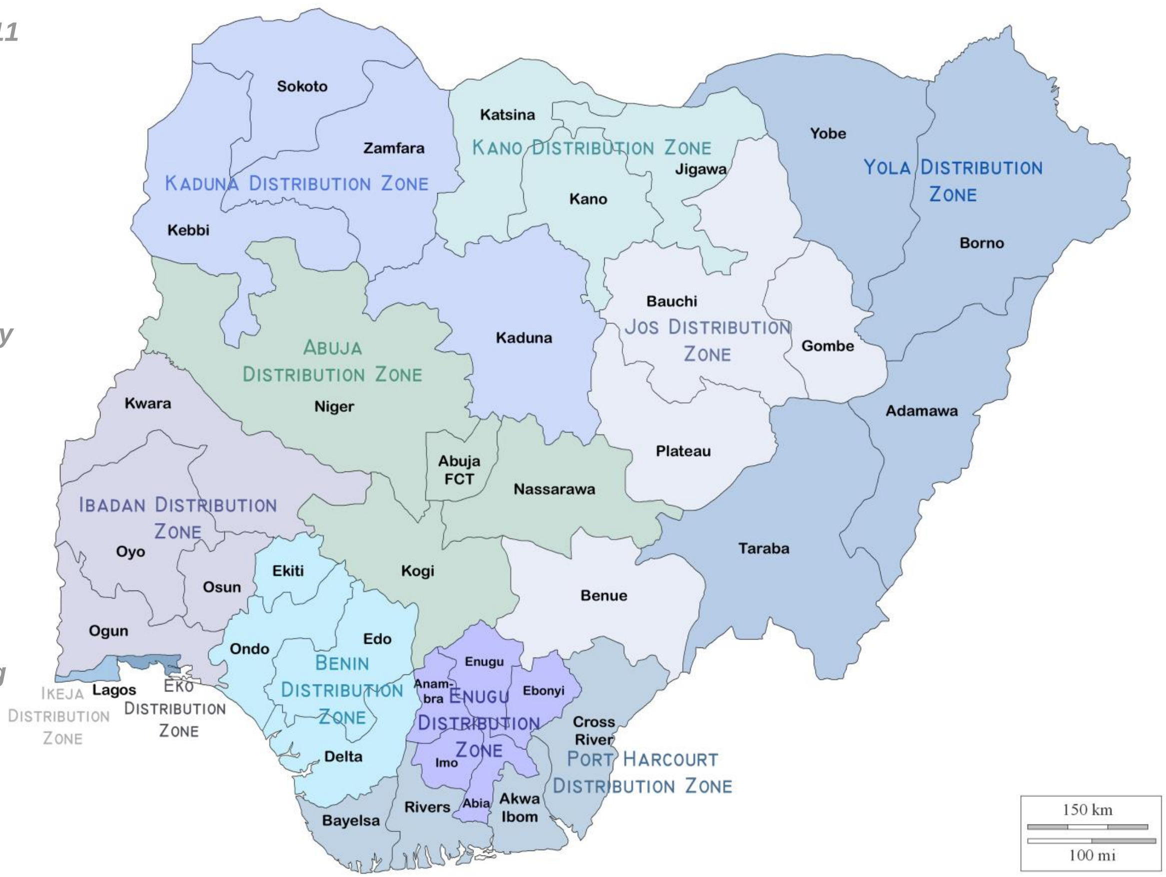
Key points

11 Distribution Zones covered by 11 DISCOS

Preferred Bidders will be allowed to own a maximum of 60% of the DISCO, while a 40% equity stake will be held by the Federal and State Governments

The DISCOs are mandated to list on the stock market in 3-5 years of commercial operation providing an exit for equity investors

Disco Privatisation: Distribution Coverage Zones



Company	Pop. Density	Notional Capacity MWh
Abuja	83/km2	1400
Benin	229/km2	1800
Eko	2483/km2	1400
Enugu	566/km2	1900
Ibadan	172/km2	2000
Ikeja	2,483/km2	2000
Jos	107/km2	700
Kaduna	113/km2	12000
Kano	291/km2	800
Port Harcourt	283/km2	1200
Yola	56/km2	300

Source: Nigerian Electricity Regulatory Commission (NERC), World Bank

2. Funding Requirements for Nigeria's Power Sector

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Funding Requirement for The Nigerian Power Sector

Key points

$7.6 Billion annual investment required to meet target of 40,000 MW by 2020

Power Infrastructure Funding gap is $3.5 Billion per Year

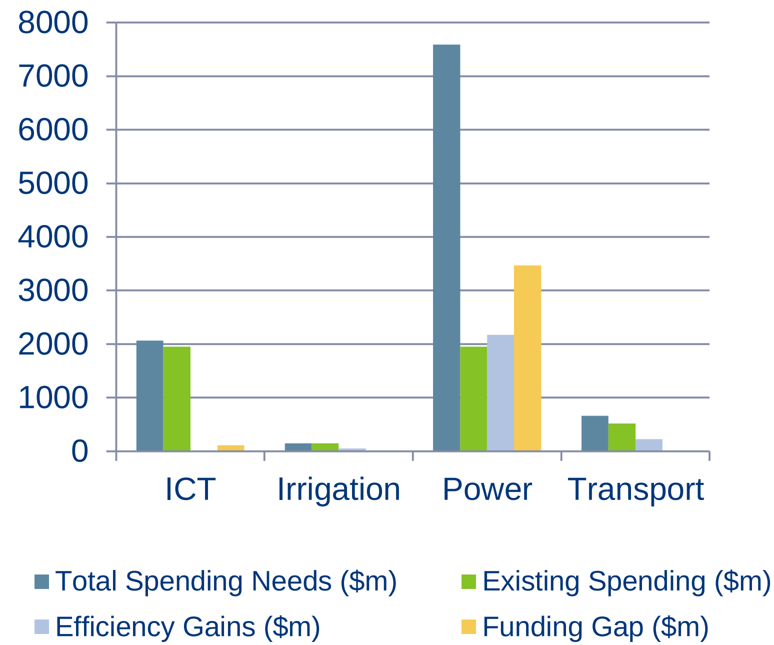
Within the Infrastructure sector power has the widest funding gap

Nigeria's Infrastructure Funding Requirement is $10bn / Year

Power Sector - $7.6 Billion and $3.5 Billion Annual Funding Requirement and Funding Gap Respectively

- Significant annual investments in the sector due to the huge deficit between and demand
  - Installed power capacity of 8,000MW and generating capacity of 3,500MW – 4,000MW for population of 164m;
  - South Africa generating capacity of approx. 35,000MW for population of 49m
- Low electricity outputs significantly impacts the cost of doing business as power comprises roughly 20%-25% of cost of manufacturing in Nigeria. Thus, development of the sector will remain key to achieving targeted economic growth rates.
- Compared with transport, Information Technology and other sectors. The power sector has the largest funding gap.

Power Sector Has The Largest Fund Requirements



Annual Capital Requirement By Usage

Source: World Bank and AFDB 2011 Reports

Funding Requirement for Discos

Key points

Billions of dollars required for capital expenditure in upgrading the Distribution Companies

c.$ 2 Billion Required Annual OPEX for Discos

PHCN Asset	Asset Valuation ($m)	60% Acquisition ($m)	30 % Equity Contribution for Acquisition ($m)	70% Debt Acquisition Financing ($m)	MYTO Suggested Average Capex (5yr) ($m)	Estimated Average Rehabilitation Capex (5yr Y-o-Y) (*$m)
Distribution Companies						
Abuja	274	164	49	115	179.5	550
Benin	215	129	38.7	90.3	341	600
Eko	225	135	41	94	230.5	3850
Enugu	210	126	38	88	133.5	1,100
Ibadan	282	169	51	118	217	1,100
Ikeja	220	132	40	92	299.5	2750
Jos	136	82	25	57	288	150
Kaduna	272	163	49	114	29	500
Kano	228	137	41	96	149	1650
Port-Harcourt	207	124	37	87	25	500
Yola	99	59	18	42	88	100
Total	**2,368**	**1,420**	**428**	**993**	**1,980**	**12,850**

Commentary

- Approx. $1.4billion required to complete the acquisition of Discos
- Approx. US$2 billion required for capital expenditure post acquisition
- Estimated CAPEX over the next 5+ years of US$13 billion to enable Nigeria to achieve 40,000MW
- Other segments of the power sector require funding to upgrade equipments:
  - Transmission Company of Nigeria: US $5 billion over next 5 to10 years

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Funding Requirement for Gencos

Key points

Significant capital requirements for Gencos

c.$ 1.5 Billion Required Annual OPEX for Gencos

PHCN Asset	Asset Valuation ($m)	60% Acquisition ($m)	30 % Equity Contribution for Acquisition ($m)	70 %Debt Acquisition Financing ($m)	Estimated Average Capex (5yr Y-o-Y) ($m)
Generation Companies					
Ughelli	200	120	60	140	370
Kainji	350	210	105	245	400
Sapele	100	60	30	70	300
Geregu	400	240	120	280	138
Shiroro	300	180	90	210	200
Afam	40	24	12	28	100
Total	**1,390**	**834**	**417**	**973**	**1,508**

- More than $800million required to complete the acquisition of Gencos
- Quantum of finance required for capital expenditure post acquisition - $1.5 billion

3. Nigeria’s Power Sector: The Financiers Perspective

Nigeria’s Power Sector: The Financiers Perspective

Key points

Financiers analyze the various project risks to determine the bankability of power projects

Key Investment Considerations For Financiers

Risk	Considerations
Sponsor Risk	- Sponsors with proven track record, strong financial and technical capabilities are preferable. Most sponsors do not have the requisite financial strength and technical experience. In addition, concerns exists regarding the consortium members of the bidders.
Technical Risk	- Both Gencos and Discos have significant challenges in terms of upgrading of their facilities after years of poor maintenance. The main technical focus is the reduction of ATC&C losses (Aggregate, Technical , Commercial and Collection losses) - Strength and experience of technical partners is important in upgrading and maintaining the asset - Unsuccessful upgrading of the grid would mean new power from the Gencos cannot be received and transmitted to the Discos
Regulatory Risk	- Nigeris has a poor history of regulation. The commercial viability of the sector is hinged on the effectiveness of regulatory environment. - NERC need independence and the ability to set tariffs that will enable the sector to develop.
Financing Risk	- Sponsors looking to leverage their existing assets to raise equity to fund acquisition. As a result debt to equity ratios for the sector as a whole is likely to be high - Greater amounts of pure equity will de-risk the sector
Market Risk	- Successful implementation of the Multi Year Tariff Order (MYTO) pricing model would ensure power producers and distributors get a fair price (cost reflective). - Key concern for Discos is the effective collection of tariffs from end users. Prepaid meters wiil assist in addressing this concern - The World Bank PRG covering NBET’s PPA with Gencos provides significant comfort to Gencos investors

Risk Indicator

- High (red)
- Medium (yellow)

Nigeria's Power Sector: The Financiers Perspective

Key points

Financiers analyze the of various project risks to determine the bankability of power projects

Key Investment Considerations For Financiers - *Continued*

Political Risk

- The privatisation process is driven primarily by the Government policy. Continuity of these policies is key to continued development of the sector.
- To mitigate this risk investors can seek political risk cover. e.g. World Bank's Multilateral Investment Guarantee Agency, World Bank Partial Risk Guarantee.

Credit Risk

- Acquisition funding and capex funding to be secured by power assets, cash generated from power generation and distribution
- Key concern for Discos is the timing of commercial and collection losses
- Key concern for Gencos is the strength of NBET – which has been mitigated by the World Bank Partial Risk Guarantee (PRG).

Currency Risk

- Projects that take loans denominated in USD to take advantage of low interest rates will be exposured to currency risk. This risk is Inherent in any transaction where there is Naira revenue and Dollar funding. A weakening Naira would result in higher tariffs.

Environmental Risk

- Nigeria has weak record of sustainable development in the energy industry particularly Oil and Gas sector. Regulation would have to be improved to manage greenhouse emissions from power plants as new plants are built and come on stream
- Appropriate operational, health nd safety guidelines would have to be drafted and enforced by the various Discos to protect their staff and enhance public safety

Risk Indicator

High

Medium

Commentary

- The objective of the Financier is to promote development whilst generating returns for its shareholders.
- Risk evaluation is an important exercise in determining the bankability of any power project to
- Risk specific to Nigeria's Power Sector can be summarised under themes: Sponsor, Technical, Regulatory, Market, Financing, Credit and Environmental

4. Financing Sources

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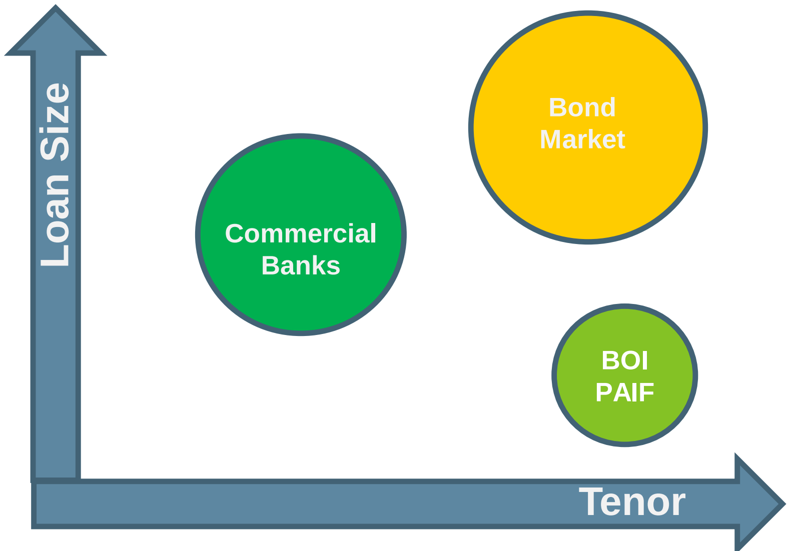
Financing Sources

Key points

The various local sources of finance available to power projects depending on individual project specifics

Local Sources of Debt Funding

Comparing Local Financing Options



Commercial Banks

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- Strong appetite for power projects
- Good understanding of local market dynamics
- Lend in Naira thus projects can match currency of revenue with currency of debt loan

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- Preference for short term loan generally less than 5 - 7 years
- More expensive pricing due to high cost of funds
- Lack of experience in funding projects of this nature
- Ability to participate in the financing of power projects is restricted by limited balance sheet sizes.

Bond Market

Infrastructure / Project bonds could be issued in the Nigerian Debt Markets by the privatized power company to raise finance.

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- Medium to long term funding
- Projects can secure finance at moderate pricing
- Funding can be structured to match project needs
- Bullet payment of bond on maturity reduces financial burden compared to Bank debt.

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- Stringent requirements of SEC or regulatory body must be fulfilled

BOI CBN Intervention Fund

N300 Billion Power and Airline Intervention Fund by the Bank Industry to fast-track the development of power and aviation Projects

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- Good understanding of local market dynamics and strong support for the power sector
- Provides low priced facility – Single digit interest rate
- Lends in Naira
- Provide long tenured facilities – up to 20 years

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- Current fund is almost fully disbursed and due to expire

Financing Sources

Key points

DFI's provide subordinated loans and could lend in local currency

Multilateral agencies provide guarantees and insurances which improves project attractiveness.

International Sources of Fund

International Commercial Banks

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- Have capacity to finance large projects
- Offer lower pricing depending on project economics

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- Many have traditionally been reluctant to manage currency and term risk, thus may have lower appetite for power projects in Nigeria.
- Usually provide currency in foreign currency, thus the project been financed is exposed to exchange risk
- Longer execution time

Multilaterals and DFIs

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- DFI's service the investment shortfalls of developing countries. Examples include African Export-Import Bank, African Development Bank, IFC
- Provides options for disbursing facilities in tranches and provide subordinated loans
- Some DFI's have ability to provide local currency
- Multilateral Agencies provide insurance and guarantees against political risk. This makes deals more attractive to investors

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- DFI's often have onerous documentation and auditing requirements, which may lengthy negotiations and timeline to close

Offshore Institutional Investors

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- Have some market appetite for infrastructure deals in emerging markets.
- The provision of World Bank PRG in to the Gencos is attractive to non-EM dedicated funds with an interest in power and infrastructure

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- Investor concerns over enforcement risk of the legal documents often need to be addressed

International Bond Investors

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- Provide tenors of 5 - 10 years
- Issuing a Eurobond provides access to international bond investor pool

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- Require clear, identifiable, steady cashflows from the underlying project
- Require issuing company to be rated by an international rating agency
- Require credit enhancements such as an FGN Guarantee or other political risk insurance

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