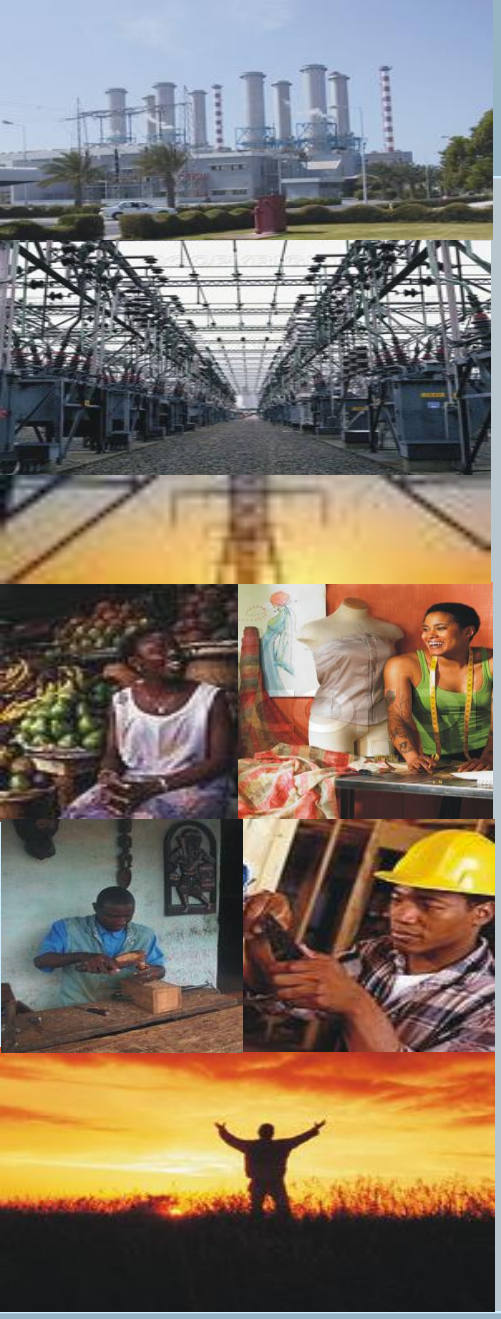

GEOMETRIC POWER limited

Challenges of Power in Nigeria
issues in projects development, risk, financing & Operation

by

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Geometric Power Limited

Nigerian Peoples Forum

State of the Nation Conference: Power

10 October 2008

The State of Power in Africa

- Total installed capacity on the continent is 103,000 MW (representing less than 5% of the world's installed capacity)
- Constant Power Shortages (demand far outstrips supply)
- Low electricity production per capital/Huge suppressed demand for power
- Regional grid interconnectivity initiatives in place

Africa's energy landscape is undergoing transformation and conditions are propitious for credible long term investors

"Our goal is to develop and invest in sustainable power projects that make economic and environmental sense and at the same time have positive socio-economic impact within the community thereby empowering the people." **The People of Geometric Power**

A look at Nigeria and other nations

COUNTRY	POPULATION	GENERATION CAPACITY (2001 -2002)	PER CAPITA POWER CAPACITY (Watts/person)	PER CAPITA CONSUMPTION (Kwh/person/Yr)	GDP (Billions of $)
USA	297.6 million	848,300 MW	2,889.30	12,465.94	11,750
GERMANY	82.6 million	115,000 MW	1,392.25	6,209.40	2,362
UK	59.7 million	76,300 MW	1,265.90	5,742.50	1,782
S. AFRICA	42.7 million	44,650 MW	1,046.70	4,243.60	491.40
BRAZIL	179.1 million	86,020 MW	480.30		1,492
CHINA	1,300 million	338,300 MW	260.00	1,120.30	7,262
INDIA	1,086 million	115,520 MW	106.31	582.00	3,319
GHANA	20.7 million	1,762 MW	85.12	334.26	48.27
NIGERIA	137.3 million	4,000 MW	29.133		125.70

Source: www.cslforum.org

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Regional Infrastructure

Regional Grid Interconnectivity

- Southern African Power Pool (SAPP) - 1995
- West African Power Pool (WAPP) – 2006
- North African Power Pool (NAPP)
- Central African Power Pool (CAPP)

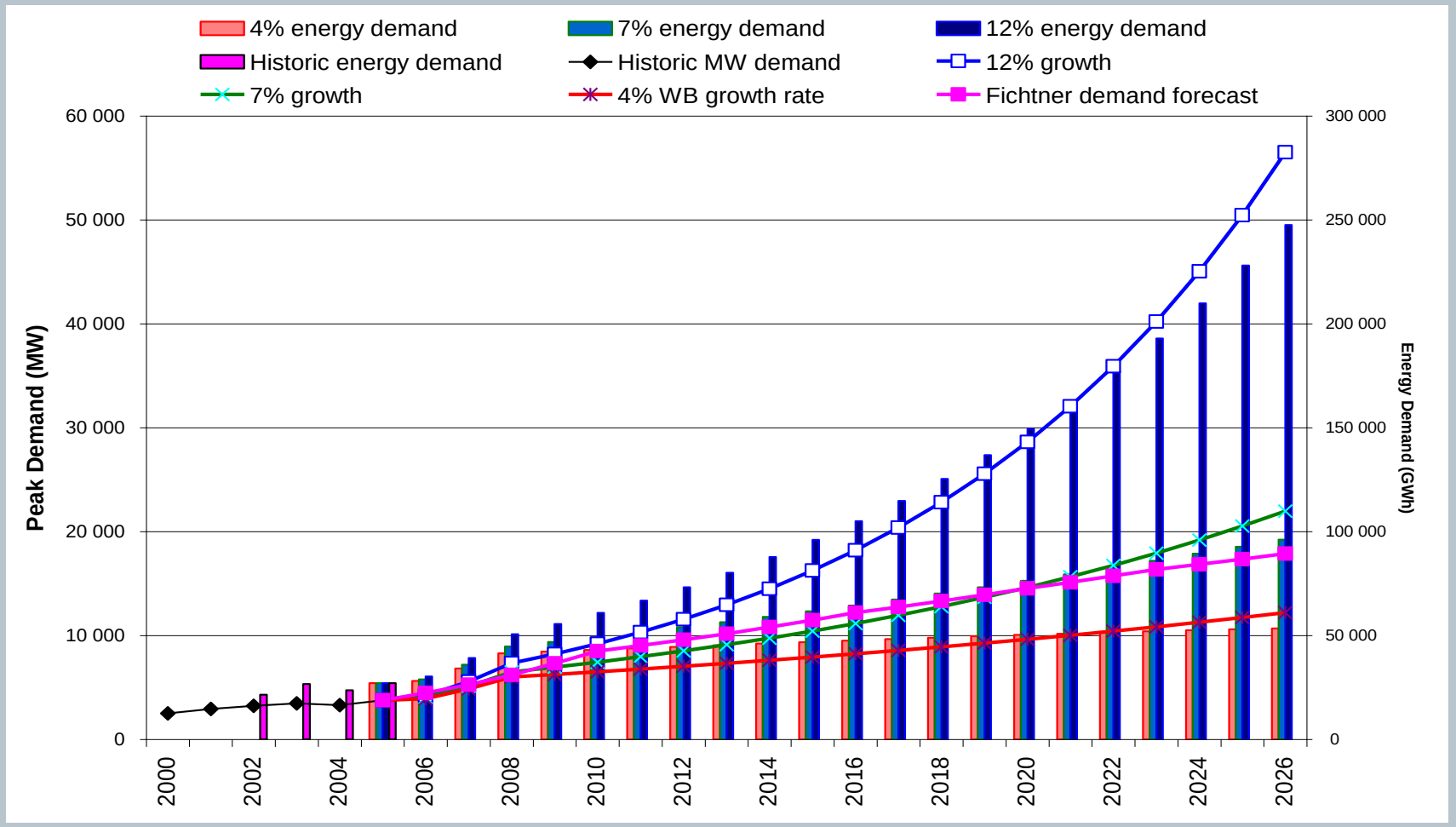
Regional Gas Pipelines

- West African Gas Pipeline (WAGP) – 2005
- Trans-Sahara Pipeline (TSP) - proposed

Cost of Self generation of Electricity in Nigeria

- Cost of electricity for large companies: N30 to N40 per KWH.
- Cost of electricity for smaller companies: over N40 per KWH.
- Cost of electricity for households: range from N40 to N70 per KWH.
- Electricity constitutes on the average, between 20 to 40% of the cost of production in a typical manufacturing company
- It costs a Nigerian company more that double what a company in emerging or developed nations pays for the same unit of electricity.

Nigerian Demand Projections



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Concerns of The Private Investor

- Custom Duties- duty waived on turbines but not on the accessories that make up more than 75% of the parts that make the turbines work!
- Stamp Duties Act –not investor friendly
- Demands of host communities
- Security – safety of expatriate and local employees
- Policy shifts
- New and/or increased taxes
- Dispute resolution and/or law enforcement
- Inflation and foreign exchange risk
- Cost of funds

Concerns of The Private Investor

- Civil unrests – communal clashes, hostilities, terrorism
- Confiscation, expropriation and nationalization
- Breach of obligations and/or agreements by government
- Fuel supply risk
- Change in policy and/or legislation

Factors that Enable and Attract Investment in power generation

1. Credit-worthy off-taker
2. Predictable and consistent policy
3. Transparency of regulator
4. Market-sensitive tariff
5. Attractive incentive package

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Existing and potential off-takers

- IPP to PHCN to PHCN DisCos
- IPP to NELMCO to PHCN DisCos
- IPP to Grid-connected DisCos which can be islanded

Why some IPPs require PPA guarantee

- DisCo should be credit-worthy, or
- Disco's off-take should be back-stopped with guarantee such as sovereign country and/or crude oil guarantee

Achieving disco credit-worthiness

- Professional Management via Management Agreement
- Professional Management via Concession
- Professional Management via Privatization

Aba IPP: A replicable model
Key Features

- $386 million (USD) project
- Funded by international and local investors
- Indigenous ownership and operation
- Project makes 100% of its benefits available to the surrounding community
- Nigeria's *only* independent power project without sovereign guaranty
- High socio-economic impact from reliable power supply

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Project Benefits

- Constant power supply guaranteed 95% of time versus 20%
- Power at about half the price of the true present cost
- Provide street lights and traffic lights in Aba
- Electrification of rural communities
- 60% of power produced earmarked to residences, commercial establishments and artisan industries
- Improved economic activity in Aba
- Regional and national multiplier effect

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Economic Savings to the Nation

- Savings to Nigeria in terms of displaced diesel fuel estimated at least US$200 million per year.
- Takes 100 tanker truck loads of diesel fuel off the roads every day
- Improved economic activity in Aba
- Provides an island of success

The Public Private Partnership

"There are some things which the private sector does best and others where the public sector has more to offer" Andrew Smith, Chief Secretary, Her Majesty's Treasury

- Project was developed with the Federal Government, IFC and World Bank but without any FGN funding input
- Government requested that domestic consumers be included in the power distribution supply
- World Bank and IFC are partners and financiers
- Consortium of local banks has fully arranged finance for construction

technical Overview

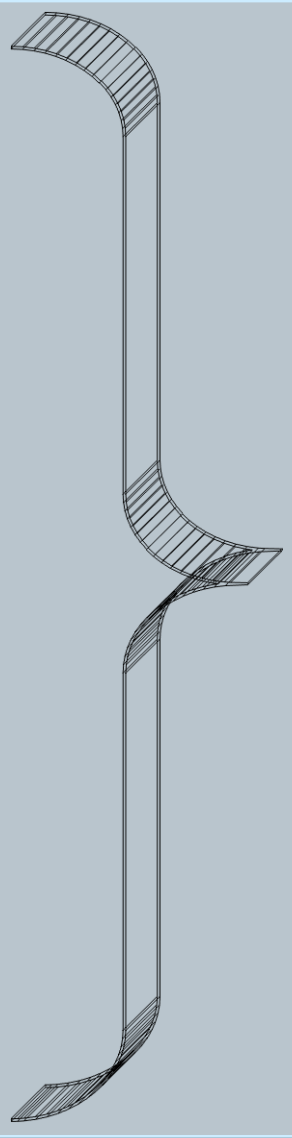
- **Power Station**
  - Installed capacity of 188 MW comprising 4 gas fired open cycle turbines with opportunity for expansion to 1000 MW
  - Group 5 of S. Africa is the EPC Contractor to construct, install and commission power plant on turnkey basis
  - GE is the power plant equipment supplier and will provide LTSA
  - GE provides engine replacement program

- **New Distribution Lines**
  - Up to 100 km private 33 KV and up to 10km private 11 KV distribution lines being constructed from power station to supply reliable power to GPAL Customers through seven distribution substations by ABB Powerlines

- **4 new Substations**
  - Four 2x15 MVA transformers constructed by Pauwels of Belgium

Geometric Power - Our Partners & Advisors

IFC	Senior Debt, Sub-debt and Equity
European Investment Bank	Senior Debt, Sub-debt and Equity
EAIF (FMFM)	Senior Debt & Sub-debt
Diamond Bank Plc	On-shore Arranger & Trustee
Stanbic IBTC Bank	On-shore Arranger
PB Power	Project Engineer
SNC Lavalin	Independent Engineer
KPMG	Financial Advisor
First Trustees	Security trustees
Dewey Ballantine	International Counsel
Paul Usoro & Company	Local Counsel
Chadbourne & Parke	Lender's Counsel
Gen. Electric/Group5	Power Station EPC
ABB Powerlines	Power lines EPC
Pauwels	Substation EPC
Shell Petroleum Dev. Co.	Gas Supply
OilServ	Gas Pipeline construction



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Achieving fast-track and credit worthiness

- Ring-fenced operation paradigm of DisCos: Concession or sale
- Standard PPAs based on NERC's MYTO and guidelines
- Convert government plants under construction to PPP power plants

Kaduna-kano-katsina (k3) power project

- Ring-fenced operation based on the Aba IPP model with power-exchange connection the national grid
- 1000 MW power plant to support the ring-fence in Phase I funded through private sector
- Construction of part of the Trans-Sahara pipeline under a PPP arrangement
- A 3-year joint project between Geometric Power, Alpine Investments, Federal Government of Nigeria, the World Bank, and host state governments

Kaduna-kano-katsina (k3) power project

- Power generation and distribution is today where telecom was in 1998
- Energy demand will double in less than 10 years and the supply is still very far behind
- Market volatility in Nigeria may be hedged with electricity investments
- Private sector investment and EPP arrangements will be the fastest way to achieve capacity sufficiency in power in Nigeria

Thank You.

Your questions, please.