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Nigeria is rapidly advancing and the opportunities are extensive. Key factors in this development will be the huge, young and urbanised population, large oil and gas reserves, an increasingly diversified economy and enormous transport infrastructure projects.

Things are looking bright for the future.

# A spotlight on Nigeria



### Country facts

**198m<sup>1</sup>**  
Population size (2017)

**+6.5%<sup>1</sup>**  
Population growth  
(2017)

**US\$376bn<sup>2</sup>**  
GDP (2017)

**US\$1,897**  
GDP per capita (2017)

**+2.7%<sup>3</sup>**  
GDP growth forecast 2017-2020  
(average yearly rate)

**3.30<sup>4</sup>**  
Global competitiveness index  
(global rank 2017/ 125)

1 Source: National Population Commission ('NPC').

2 Source: National Bureau of Statistics ('NBS').

3 Source: World Bank.

4 Source: The World Economic Forum ('WEF').

### Top exports



Petroleum oil and gas



Cocoa



Wood



Oil seeds



Raw hides and Leather

Source: Nigerian Export Promotion Council ('NEPC').

# Reversing Nigeria's infrastructure deficit and developmental challenges: the energy connection



**Professor Adeola Adenikinju**

Ph.D, fnaee  
Professor of Economics,  
Department of Economics,  
Research Professor, Centre for  
Econometrics and Allied Research,  
Director, Centre for Petroleum,  
Energy Economics and Law  
University of Ibadan, Ibadan, Nigeria  
Member, Central Bank of Nigeria  
Monetary Policy Committee

Quality infrastructure is an essential element for productivity and growth. For Nigeria, and indeed Africa, the need for adequate infrastructure – secure energy supply, efficient transportation, reliable communication systems, resilient sanitation and affordable housing – is particularly apparent. While Nigeria has basked under the glow of impressive economic growth over the past decade, serious infrastructural shortcomings have undercut business and economic growth, service delivery, trade and investment. Unless Nigeria and the rest of the continent urgently address the obvious infrastructure deficit, the full socio-economic development potentials of the African economy will continue to be constrained.

Most African countries are facing a substantial infrastructural deficit. The impressive growth performance of the continent in the past decade is in sharp contrast to the experience of the 1980s, which was largely termed the lost decade for Africa. The economic performance in the region started to turn for the better in the mid-1990s with improved policies and structural reforms. African countries recorded some of the fastest, most diversified and consistently high economic growth rates in the world during the past decade and the continent is also projected to grow at above the global average in the future. This evolution occurred in spite of the huge infrastructure challenges faced by most African nations.

Past and present efforts to address the continent's infrastructure gap have been constrained by budgetary challenges, limited and inconsistent foreign aid inflow, the weak capacity of the private sector to mobilise international finance in many of the countries, the small size of the domestic finance and capital markets, and even by many of the economies themselves. Yet these countries have no alternative but to upgrade, maintain existing infrastructure and invest in new ones in order to meet their development aspirations.

The improved macro-economic environment, governance and institutional indicators provide Africa with better outlook to attract investments from private sectors, development partners and multilateral institutions into infrastructural development, and reverse the existing inadequate state of transport networks, energy supply, information and communication technology ('ICT') that cut across Africa.

## The economic growth effect



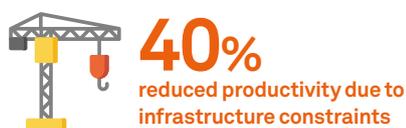
The rising focus on infrastructure development is critical for Africa to sustain its present impressive economic growth rates. Infrastructure is a critical productive input that impacts directly on economic growth and indirectly on the efficiency of other complementary factors of productivity. Investment in new infrastructure, infrastructure upgrades and maintenance has accounted for a significant share of GDP growth in the past decade. Countries with above average levels of infrastructure in Sub-Saharan Africa, and those that have invested significantly in their infrastructure development in recent years, have experienced accelerated growth, for example, Rwanda, Ethiopia, South Africa and Nigeria.

Across Africa, infrastructure contributed 99 basis points to per capita economic growth from 1990 to 2005, compared with 68 basis points for other structural policies. That contribution is almost wholly attributable to advances in the penetration of telecommunication services. On the other hand, poor power supply shaved 11 basis points from per capita growth for Africa as a whole and as much as 20 basis points for South Africa (Calderon, 2008).



## Cost of doing business effect

In Africa, the current state of infrastructure remains a major constraint to doing business, reducing firm productivity by about 40%, imposing extra burden on businesses through private provisions of power, security, water and roads (Escribano et al, 2008). Power ranks as the major business obstacle across most parts of the continent. Inefficient functioning of ports and associated customs clearance is also very significant. Other challenges include transport and ICT inadequacies.



## Human development effect

Development of infrastructure projects contributes directly to socio-economic development through creation of jobs, boosting farm and off-farm productivity and incomes, especially in the poor rural areas, thereby reducing poverty, and meeting other sustainable development goals, such as improved access to clean water, education, health, clean energy and better roads. Access to potable water can lead to reduction in diseases such as cholera and dysentery, which are leading causes of infant mortality. Road networks when constructed will also open up host communities and regional markets. Power is key to realising the human development goals agenda as per capita energy and power consumption is highly correlated with diverse indicators of quality of life.



## Diversification and industrialisation effects

No country can successfully transform its economy without appropriate complementary infrastructure. Good infrastructure networks link up agricultural raw materials that are largely based in the rural areas with the industries that are largely located in the urban centres. Power will allow rural farmers to better preserve their farm output and reduce post harvest losses. With reliable and stable power, manufacturers will be in a better position to compete with foreign producers in local and international markets. This will boost economic growth, employment and reduce poverty.

For countries with small markets, regional integration and cooperation will allow for economies of scale in infrastructure development by pooling resources together to create bigger markets that will be attractive to non-public sector investors. Regional integration would also contribute to reducing the regulatory burden facing domestic industries through harmonising policies and restraining unfavourable domestic policies. Furthermore, it would boost inter and intra-African trade, thereby accelerating industrialisation across the continent.

## The Nigerian connection

Nigeria, with a population of around 186 million (2016 estimate) and a GDP of US\$376 billion, is the most populous and largest African economy. The population is predominantly young and dynamic. The country sits astride a huge deposit of energy resources making it the largest producer and exporter of petroleum in Africa and among the top ten in the world. Oil and gas reserves are also large by regional and global standards<sup>1</sup>. According to the 2014 World Bank's Enterprise survey, the major obstacles faced by businesses operating in Nigeria are limited access to finance, poor infrastructure (especially power) and corruption. The value of Nigeria's total infrastructure stock (road, rail, power, airports, water, telecoms and seaports) represents less than 30% of GDP, far below the acceptable standard of 70%. Nigeria lags behind comparator countries like India, Brazil and South Africa, with total core infrastructure stock as a share of GDP at 58%, 47% and 87% in 2012, respectively (NPC, 2013).

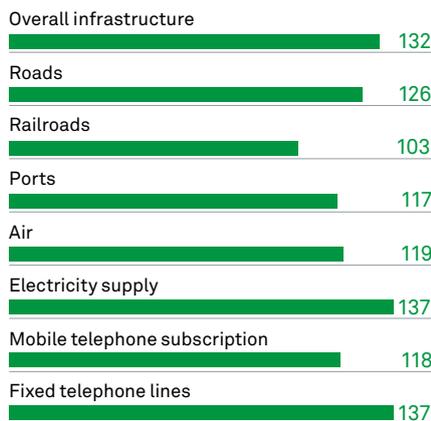
To bridge this gap, the current administration has launched a medium-term development agenda tagged the Economic Recovery and Growth Plan ('ERGP'). The Plan envisages that the Nigerian economy will attain a 5% annual economic growth rate by 2020. This growth target is, however, dependent on closing the massive infrastructure gap in the economy, especially power. Hence, the country will put preeminent attention to power and gas infrastructure in the development of the First Operational Plan for the Nigerian Integrated Infrastructure Masterplan ('NIIMP') which covers the period 2017-2021.

The NIIMP is a major government initiative developed to accelerate infrastructure development. Its primary objective is to raise national infrastructure stock / GDP ratio from 20-25% to 70% by 2043. According to the NIIMP, Nigeria spends US\$10 billion annually on infrastructure, half of which comes from the private sector. About 70% of infrastructure spending is distributed among ICT (28%), transport (23%) and energy (19%). The estimated cost for meeting the target of infrastructure stock/GDP ratio of 70% will require an annual investment expenditure of US\$100 billion over the 30-year period of the NIIMP. Government projected that 48% of this investment will be financed by the private sector. Partnership between the public and private sectors is therefore very important to deliver on the infrastructural goals set out in the ERGP and the NIIMP. Options available to complement government finance include public private partnership ('PPP') arrangements,

and privatisations of some assets like refineries, railways, airports, among others, and exploring the options presented by the public pension funds and the sovereign wealth funds ('SWF').

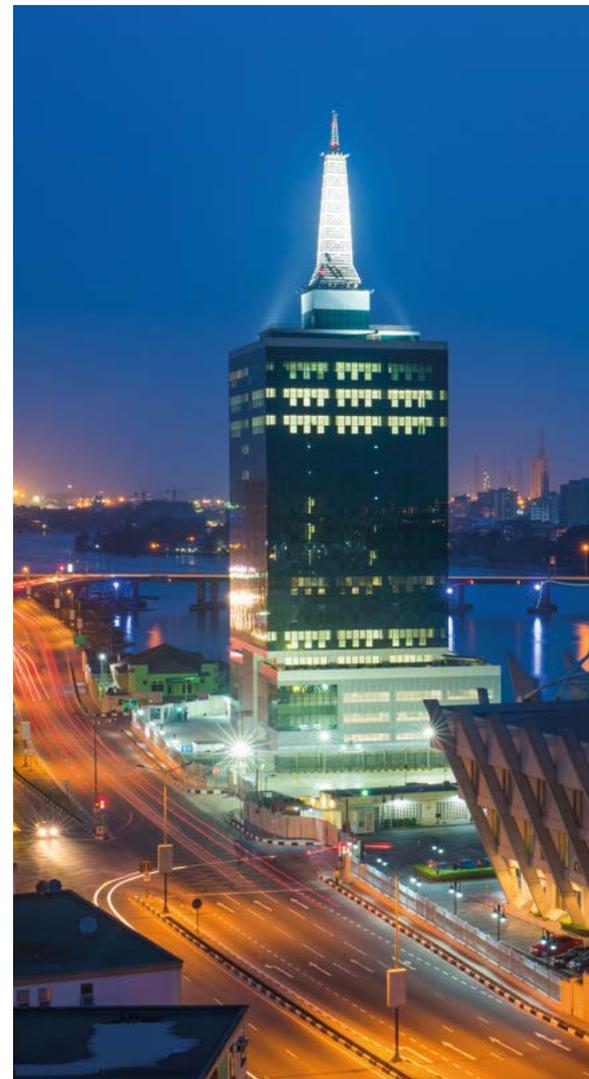
Power is by far the most binding constraint to doing business in Nigeria. Apart from being the most efficient form of energy, electricity is hugely important for production processes in all sectors of the economy. Other factors of production, capital machinery and equipment, computers, and even labour, depend on the availability of a reliable and quality electricity supply. Little wonder that Nigerian firms have no choice but to spend large investments on self generated provisions of power. The cost of this extra investment in power is heavier on small and medium scale enterprises than large enterprises.

### Doing business, Global ranking on quality of infrastructure



Source: World Economic Forum, Global Competitiveness Index Report, 2017-2018.

Only about 57% of Nigerians have access to on-grid power. Aliyu et al. (2013) pointed out that 60% of the time there is no access to power in Nigeria. Blackouts are commonplace and Nigerians are forced to rely on biomass fuel and petrol or diesel generators to make up for the unreliable power supply from the national grid<sup>2</sup>. The national average for power supply is around 35 hours a week. Nigerian households spend almost four times as much on fuel/electricity as they do on healthcare and only half as much of their fuel/electricity expenditure on education.



Grid supplied power in Nigeria has been so irregular that the economy has been described as a 'generator economy' (IseOlorunkanmi, 2014). A series of power sector polls conducted by NOI Polls Ltd for the second quarter of 2013 revealed that about 130 million, representing 81%, out of the 160 million Nigerians generated their own power through alternative sources to make up for irregular/non-existent power supply.

1 Current estimates show that Nigeria has over 37 billion barrels of oil reserves and 187 trillion cubic feet of proven gas reserves.

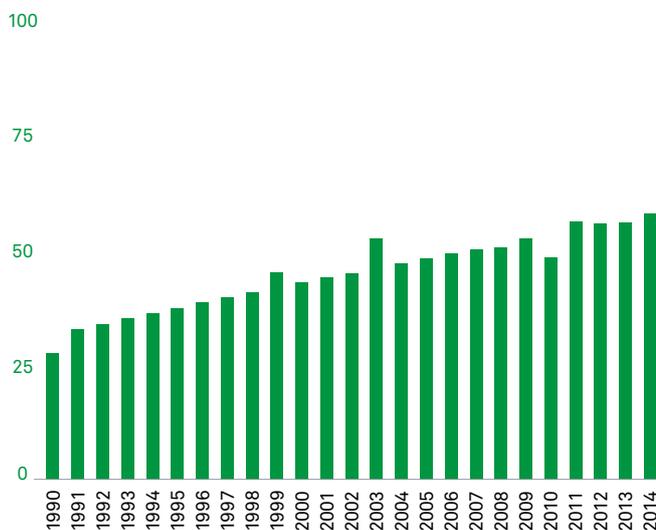
2 It is estimated that nearly US\$22 billion of foreign exchange is spent annually on the importation of diesel. This is a huge pressure on Nigeria's foreign reserves and exchange rate. Improved electricity supply locally will relieve this burden on foreign exchange as well as contribute to lower energy budgets for electricity consumers in the country. Household savings from high energy budgets can be spent on other human development needs.



## Transport

Nigeria's publicly owned and operated transportation infrastructure remains a major obstacle to economic development. While the Nigerian government has opened the ports for the private sector to manage and operate through concession agreements, the government still manages the rail and roads sector. A sound legal framework and policy reforms are needed to allow PPPs to move forward in the rail and roads sector. Of the 50,000 miles of road, only slightly more than 10,000 miles are paved, and many of these paved roads are in poor shape. Only five of Nigeria's 22 airports are currently able to receive international flights. The government is seeking to encourage private sector involvement in these major airports in a bid to revamp the aviation infrastructure in the country and better position it for business. Nigeria's railway network currently has eight lines that are collectively only about 2,000 miles long. These railways require major rehabilitation, modernisation, and expansion. The Chinese government is collaborating with the government to rehabilitate and expand the existing rail system.

Nigeria's access to electricity (% of population) 1990-2014



Source: World Bank Indicators, 2016.

Only  
**2,000 miles**  
of rail lines

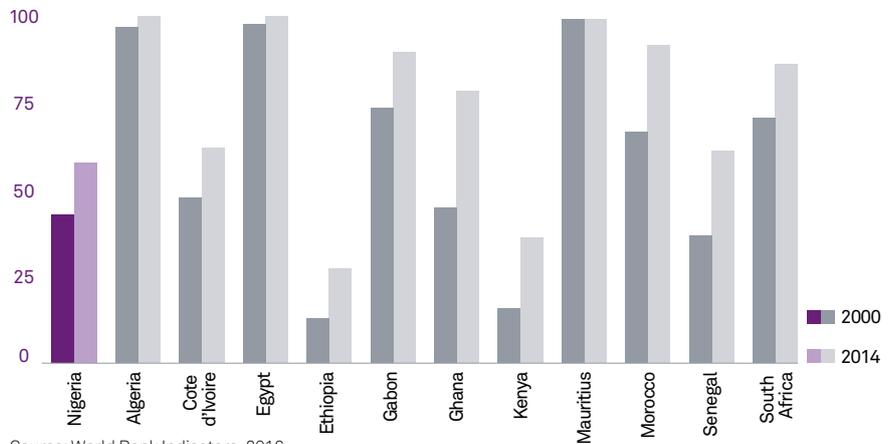
**5/22** airports  
are currently able to receive  
international flights

## Energy

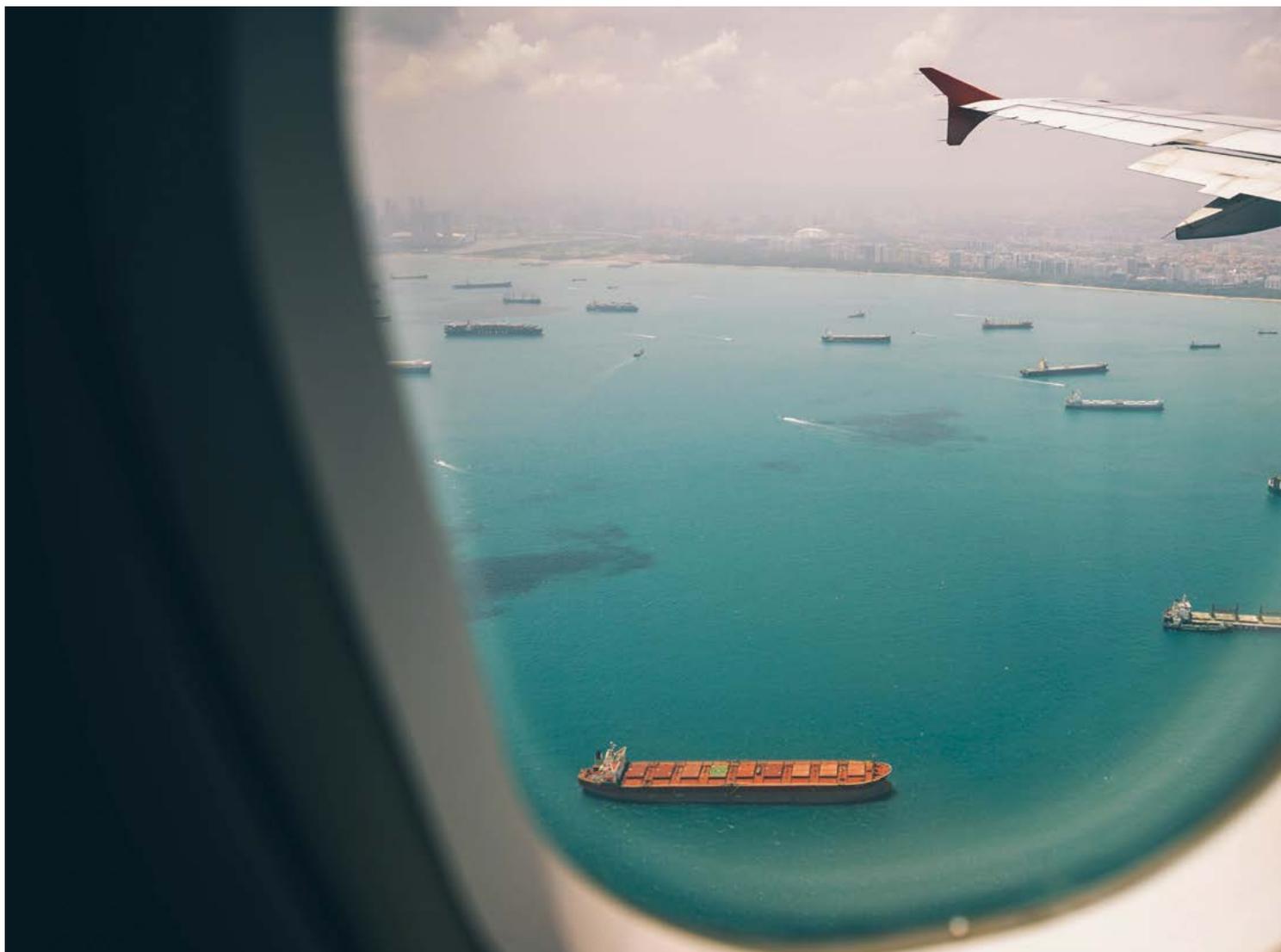
Access to reliable and affordable power is vital for businesses. Nigeria's manufacturing sector had an estimated self-generation capacity of 13.2GW in 2013 and spent over ₦213billion on private power generation over a three-year period. Nigeria's growth potential will remain unrealised if these power sector challenges are not addressed. Although Nigeria has 12.5GW of publicly installed generation capacity, less than 5GW is typically available on a regular basis (USAID Power Africa Factsheet, 2017).

Addressing the power deficits of Nigeria will require policy makers to address a number of challenges: electricity and gas pricing, gas-to-power infrastructure, technical and economic losses, weakness in power transmission and distribution networks, under-investment across the entire value chain, among others.

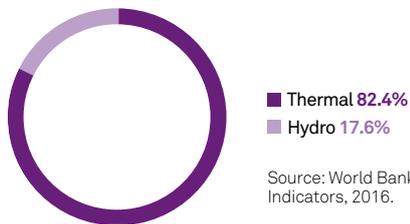
**Nigeria's access to electricity (% of population) 2000-2014, compared to other African countries**



Source: World Bank Indicators, 2016.



### Nigeria's installed power generation mix



Source: World Bank Indicators, 2016.

### Gas to domestic power pricing has improved (US\$/Mscf)



Source: NNPC; assumed 1 MMBtu equals 1 Mscf. Based on DSO pricing levels.

Experts' estimates of the value of investment needed to resuscitate and rehabilitate Nigeria's power sector range from US\$10 billion in the short term to US\$900 billion in the next 30 years.

The government has launched several initiatives to address the myriad of power problems, including inequality in rural-urban access. These include the 2017 Power Sector Recovery Programme ('PRSP'), which contains a series of policy actions, and operational, governance and financial interventions to be implemented by 2022. The programme aims to restore the financial viability of Nigeria's power sector, improve transparency and service delivery and reset the supply industry for future growth. The PRSP also focuses attention on the role of the private sector in closing the power supply gap across the country.

The link between the power and petroleum sector is very important in Nigeria. Currently, thermal plants (mainly gas fired plants) account for over 82% of power generation mix. This implies that upstream petroleum companies have a significant role to play in bridging the gas-to-power supply gap.

It is important to point out that most of the newly licensed power plants are gas fired plants and it is for this reason that the Domestic Supply Obligation ('DSO') was introduced. The DSO is a system that manages price increases to meet the market price and aims to guarantee gas supply to 'strategic sectors' of the economy which include power.

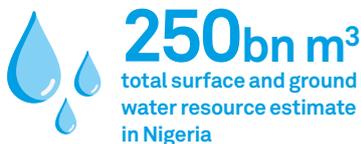


### Water

Water is central to human existence. Socio-economic development and environmental sustainability revolve around it. The total surface and ground water resource in Nigeria is estimated at above 250 billion cubic metres representing about 1,800 m<sup>3</sup>/capita/year of total renewable water resources, which is well above the 1,000m<sup>3</sup>/capita/year typically used to define water scarcity. Nigeria is NOT a water-poor country. There is more than enough water resource for domestic, industrial, agricultural, hydropower, transportation and recreational use. However, Nigeria is ranked as an Economic Water Scarce Country, because there is a lack of investment and proper management to meet demand.

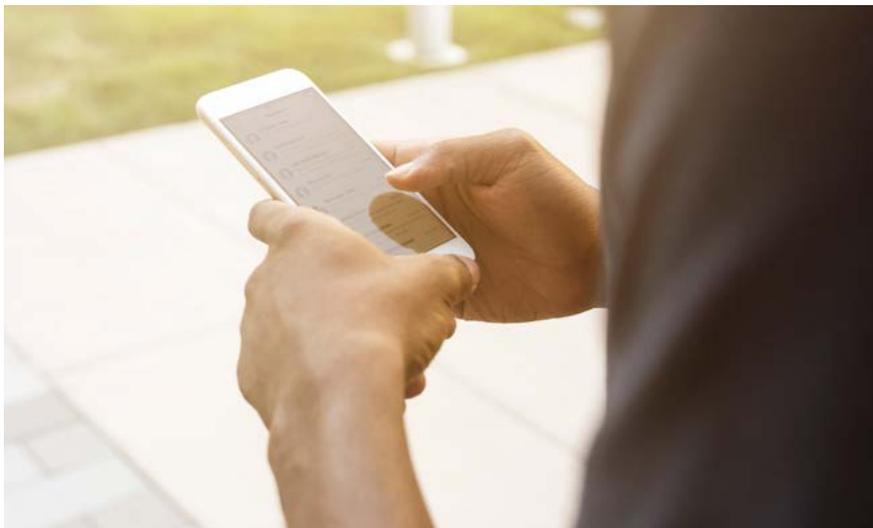
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National access to water supply was estimated in 2015 at 69%. This implies significant effort is required to ramp up the water supply system to meet the 100% water supply target envisaged by the SDG by 2030. Again, power provision is key to ensuring that clean water is available for Nigerians living in rural, semi-urban and urban areas of the country. The high rate of failure of solar powered borehole water across the country has to be urgently addressed, even as policy seems to favour non-grid power to meet the needs of the rural population.



### ICT

The ICT sector, buoyed by the telecommunication sub-sector, has recorded major advancement and growth. Liberalisation policies in the ICT sector have resulted in widespread, low-cost mobile services and major private investments in the development of a national fibre-optic backbone. The sector has attracted significant investment since it was liberalised in 2000 and, according to the Nigerian Communications Commission, investment in the sector is estimated at over US\$70 billion since 2000. This investment has created direct and indirect employment for Nigerians. However, quality of service delivery remains a major challenge as costs remain high due to energy challenges.



### Recent infrastructural developments

There are numerous developmental and infrastructural projects springing up across vital sectors of the nation's economy that can catalyse growth. These include:

#### Gas pipelines

Several gas pipeline projects have been approved by the Federal Executive Council to address local gas supply challenges in Nigeria and as part of the implementation of the First Phase of the Nigerian Gas Master Plan ('NGMP'). The very important 127 kilometre Obiafu-Obrikom-Oben ('OB3') gas pipeline will be the first gas pipeline to transport gas from the gas rich east of the country to the demand centres in the west of Nigeria. On completion in 2018, this pipeline system will transform the infrastructure landscape and boost the availability of gas to existing power plants and manufacturers. Various contract sums including US\$2.8 billion were approved for the construction of a 40-inch pipeline across 614 kilometres from Ajaokuta-Abuja-Kaduna-Kano. The project is slated for completion in 2019. Another contract has also been approved for the engineering, verification, procurement and construction of a 40-inch pipeline across 30 kilometres from Odidi-Warri gas pipeline expansion project to transport additional gas supply from upstream producers to various demand points at a cost of ₦7.7 billion and US\$56 million. These contracts will provide a massive boost to energy transportation networks that will benefit all sectors of the economy.

#### Mambilla Hydro Power project

The government has approved and awarded contracts for this US\$5 billion hydro power project which is expected to be operating in six years' time. The project is expected to expand the amount of power generated to the grid and also expected to drive the power mix and energy security of the country. ₦9.8 billion was allocated in the 2018 budget towards the Mambilla project.

#### Lagos-Calabar Railway

The US\$11 billion rail project, which is to be carried out in two phases, has been approved by the government. It will connect two major shipping and trading hubs: Lagos in the west with major eastern cities such as Enugu, Port Harcourt and Calabar.

#### East – West Road and Second Niger Bridge

Funds for these two critical infrastructural projects were included in the 2018 budget which earmarked ₦10 billion for the Second Niger Bridge and ₦17.82 billion for the completion of the East – West Road. Funding will come from issuance of government bonds and through PPP.

#### Infrastructure/Sukuk Bond

The use of Sukuk Bonds to raise funds to finance infrastructure is one of the innovative financing schemes undertaken in 2017. The ₦100 billion bond was oversubscribed and the proceeds are to be used to construct and rehabilitate 25 roads in Nigeria's six geo-political zones. These roads have been selected by the Federal Ministry of Power, Works and Housing ('FMPWH') because of their strategic economic importance.

#### Airport concession

The government has approved the concession of the Lagos and Abuja airports for the pilot phase which will ensure private sector involvement in the running of the airports. The 2018 budget also provides for the construction of a second runway at Abuja Airport.

#### Nigeria launches first African Sovereign Green Bond

The government has approved the raising of ₦10.6 billion green bonds to finance renewable energy projects to protect the environment. According to the Debt Management Office, the bonds would be used to finance three renewable energy projects: Renewable Energy Micro-Utilities Programme, Re-energising Education Programme and Afforestation Programme. The bonds will provide an alternative financing source for renewable energy projects in the country, help protect the environment and assist the country in meeting its commitment under the Paris Agreement on Climate Change.

#### Lekki Deep Seaport

Construction is expected to begin at the Lekki Deep Seaport in 2018, as project sponsors have opened discussions with domestic financial institutions and commercial lenders. Both the Nigeria Ports Authority and the Lagos State government have taken up equity participation. On completion in 2019, this multi-purpose deep sea port in the heart of the Lagos Free Trade Zone will be one of the most modern ports in Africa and will support trade across Nigeria and the entire West African region.

## Seplat's role

Following the implementation of the Domestic Supply Obligation in 2010, gas pricing has moved to commercial levels as the gas market transitions to a free market system. Seplat has been able to align its gas business with the broader needs of the Nigerian economy and emerge as a key strategic operator in support of the government's energy agenda. This has to be the template for future successful businesses in the energy space in particular, where the shared values of all stakeholders are integrated into the long-term business plans of the operating companies to deliver sustainable growth.

The demand for power is obvious for several decades to come in Nigeria and the government envisages that power generation will need to increase from the current level of less than 5GW to 30GW by 2030. Given the prolific reserves in the country, gas is the obvious fuel to underpin large-scale and grid based power generation for the long term. Against this current backdrop of a wide power supply deficit, of which inadequate gas supply is a major cause, Seplat is positioned to play a leading role in addressing the issue by boosting a reliable supply of processed gas to the domestic market which in turn can underpin increased power generation. Seplat has built an upstream portfolio with considerable gas reserves in the ground and has made substantial investments to increase midstream production and processing capacity to meet the growing local demand.

Seplat is well positioned to align its business plan with the needs of the Nigerian economy and to support the government's energy agenda

With further expansion of its already sizeable gas business planned, Seplat will not only make an increasing contribution to bridging the current power shortages in Nigeria, but at the same time will add momentum to the positive multiplier effects derived from increased electrification that can boost other sectors of the nation's economy: higher employment, higher industrial output, higher agricultural output and reduced imports which will lead to higher income, greater spending power and higher standards of living.

This will, however, require the expansion of current and development of new large-scale gas feedstocks and gas infrastructure projects which in turn will need substantial capital investments. The domestic capital markets alone will not be able to fund future capital requirements, meaning that access to the international capital markets and private sector participation are going to be integral to achieving success.

In April 2014 Seplat became the first, and to date only, Nigerian company to fully dual list on the Nigerian and London stock exchanges and raised US\$535 million in an IPO that



<5GW –  
30GW

government predicted  
electricity generation  
increase by 2030

ranked as the largest for a Sub-Saharan Africa company since 2008 and the second largest ever for a Nigerian company, demonstrating the international appetite for high quality indigenous Nigerian opportunities. Alongside this, Seplat has successfully accessed the debt capital markets and in January 2015 completed a US\$1 billion debt refinancing that attracted participation from numerous international banks in a revolving credit facility. This was followed in March 2018 by a further debt refinancing that saw Seplat make its debut rated bond issuance. With a foot in each of the domestic and international markets Seplat is clearly differentiated amongst indigenous peers and well positioned to access multiple forms of capital globally to fund future growth. In conclusion, Seplat represents a template and has set a precedent that other indigenous Nigerian companies should aspire to replicate and help position Nigeria and its vast array of opportunities as an attractive investment destination.

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