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14. ABSTRACT Nigeria has an electricity problem. Decades of neglect and mismanagement have left the nation with an anemic electrical power grid, one that is utterly incapable of powering the modern economy of Nigeria's aspirations. Recognizing that solving Nigeria's electricity woes are foundational to achieving the Nigeria Vision 20: 2020 socio-economic development goals, the Goodluck Jonathan administration has put electrical power sector reform among its highest priorities. The administration's ambitious reform plan is captured in the Roadmap for Power Sector Reform, a well-conceived framework to address the nation's electricity problems. However, the Roadmap faces significant endemic and systemic challenges – technical and fiscal constraints, fragile public support, political opposition, corruption, and criminal/security issues – that will blunt progress and cause Nigeria to fall short of its power sector reform goals.					
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“Nigeria’s Roadmap for Power Sector Reform – Will It Succeed?”

by

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**A paper submitted to the Faculty of the Naval War College in partial satisfaction of
the requirements of the Department of Joint Military Operations.**

**The contents of this paper reflect my own personal views and are not necessarily
endorsed by the Naval War College or the Department of the Navy.**

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Abstract

Nigeria has an electricity problem. Decades of neglect and mismanagement have left the nation with an anemic electrical power grid, one that is utterly incapable of powering the modern economy of Nigeria's aspirations. Recognizing that solving Nigeria's electricity woes are foundational to achieving the *Nigeria Vision 20: 2020* socio-economic development goals, the Goodluck Jonathan administration has put electrical power sector reform among its highest priorities. The administration's ambitious reform plan is captured in the *Roadmap for Power Sector Reform*, a well-conceived framework to address the nation's electricity problems. However, the Roadmap faces significant endemic and systemic challenges – technical and fiscal constraints, fragile public support, political opposition, corruption, and criminal/security issues – that will blunt progress and cause Nigeria to fall short of its power sector reform goals.

Introduction

The availability of reliable Electric Power to the homes and businesses of our citizens has been one item in our national life that we have approached with so much hope and yet experienced so much frustration over the past decades ... Our commitment is to bring an end to our nation's stunted growth and usher in the fresh air of prosperity by pursuing a new era of sector-wide reform which is driven by improved service delivery to every class of customers in the Nigerian electricity sector.¹

Dr. Goodluck Ebele Jonathan
President, Federal Republic of Nigeria

Nigeria has an electricity problem. Decades of neglect and mismanagement have left the nation with an anemic electrical power grid, one that is utterly incapable of powering the modern economy of Nigeria's aspirations. While government strategists envision a prosperous future characterized by a top 20 world economy that provides a high standard of living for all citizens,² Nigeria's electrical power network is decidedly third-world with an electrification rate hovering near 50%,³ a paltry annual per-capita electricity consumption of just 120 kWh (100 times smaller than the U.S.),⁴ and a highly volatile supply described as "epileptic."⁵ Indeed, Nigeria ranks 138 out of 144 on the World Economic Forum's *Quality of electricity supply* index.⁶

Recognizing that solving Nigeria's electricity woes are foundational to achieving the *Nigeria Vision 20: 2020* (NV 2020) socio-economic development goals, the Goodluck Jonathan administration has put electrical power sector reform among its highest priorities.⁷ The administration's *Roadmap for Power Sector Reform*, is bold and ambitious, promising nothing less than a total overhaul of power sector infrastructure, regulatory framework, management, operations, and even the markets themselves, all while committing to a growth

¹ The Presidency of the Federal Republic of Nigeria, "Roadmap for Power Sector Reform," 3.

² National Planning Commission, "Nigeria Vision 20: 2020 Economic Transformation Blueprint," 9.

³ International Energy Agency, *Energy for All: Financing access for the poor*, 11.

⁴ International Energy Agency, *IEA Statistics & Balances*.

⁵ The Economist, "Electricity in Nigeria: Let there be light."

⁶ Schwab, *The Global Competitiveness Report 2012-13*, 418.

⁷ Business Monitor International, *Nigeria Infrastructure Report Q4 2012*, 44.

timeline that only the United States and China have ever been able to achieve.⁸ However, the Roadmap is not without its opponents, and even supporters wonder if the administration can deliver, or if the plan will end up as yet another burnt-out-bulb in Nigeria's multi-billion naira trash heap of failed power sector initiatives. In the end, though the Roadmap is a well-conceived framework to address the nation's electricity problems, endemic and systemic challenges will blunt progress and cause Nigeria to fall short of its power sector reform goals.

Background

Put simply, electricity is the lifeblood for a modern economy. It lights cities, heats and cools homes, powers industry, improves healthcare, facilitates modernization and efficiency, enables basic services, and more. The World Bank asserts electrification is necessary for economic growth and vital to human development,⁹ while the World Economic Forum says lack of access to energy (particularly electricity) entrenches poverty.¹⁰ It is understandable, then, that provision of affordable, reliable electricity underpins Nigeria's growth agenda – it is a basic need that must be met if the country is to achieve broader socio-economic progress.

In this context, Nigeria's present electrical power situation is troubling. Installed generation capacity is 6 GW, but a number of factors limit delivered capacity to less than 4 GW.¹¹ By comparison, Brazil and Pakistan, Nigeria's population near-peers, field electrical generation capacities of 114 GW and 22 GW respectively while South Africa, with just over a quarter of Nigeria's population, has a generation capacity of 44 GW.¹² Additionally, the aforementioned electrification rate means some 85 million Nigerians lack access to

⁸ Nnaji, "Dismantling Barriers to Achieving our Power Sector Vision," 1.

⁹ World Bank, *Addressing the Electricity Access Gap*, 8.

¹⁰ World Economic Forum, *Energy Poverty Action*, 2.

¹¹ Nnaji, "Dismantling Barriers to Achieving our Power Sector Vision," 4.

¹² U.S. Energy Information Administration, *International Energy Statistics*.

electricity (some estimates exceed 100 million¹³). The situation is particularly acute for rural areas with up to 2000 communities lacking access to the grid.¹⁴

To make matters worse, blackouts and voltage irregularities are the norm. In fact, the situation is so bad that an emergency generator micro economy has blossomed as businesses and individuals seek to secure their own reliable supply of power. Some estimates indicate diesel generators account for as much as two-thirds of the electrical power consumed in Nigeria and this comes at a staggering cost of \$13 billion per year.¹⁵ The induced drag on industry is significant – industrial capacity utilization is a mere 30%.¹⁶

Sadly, Nigerians have had to live with electricity dysfunction for decades, despite many previous attempts to boost the power sector and billions of dollars applied to the problem.¹⁷ Now the Jonathan administration is weighing in with an ambitious new plan to fix Nigeria's electricity problems, once and for all.

The Roadmap

Enter the Roadmap for Power Sector Reform. Published in 2010 by the Presidential Action Committee on Power (PACP) and the Presidential Task Force on Power (PTFP), the Roadmap operationalizes the Electric Power Sector Reform (EPSR) Act of 2005, providing a comprehensive plan for breaking the power sector free from its decades-long malaise. It details actions to modernize and expand the power grid infrastructure (generation, transmission, distribution), fix fuel-to-power constraints,¹⁸ clean up and strengthen regulatory structure, and develop human capital. Additionally, the plan seeks to transform the industry

¹³ Business Monitor International, *Nigeria Power Report Q4 2012*, 25.

¹⁴ Nnaji, "Electric Power in Nigeria: The Sun on this Rubble."

¹⁵ Business Monitor International, *Nigeria Power Report Q4 2012*, 27.

¹⁶ Bureau of African Affairs, "Background Note: Nigeria."

¹⁷ Rice, "Nigeria power rates to rise up to 88%."

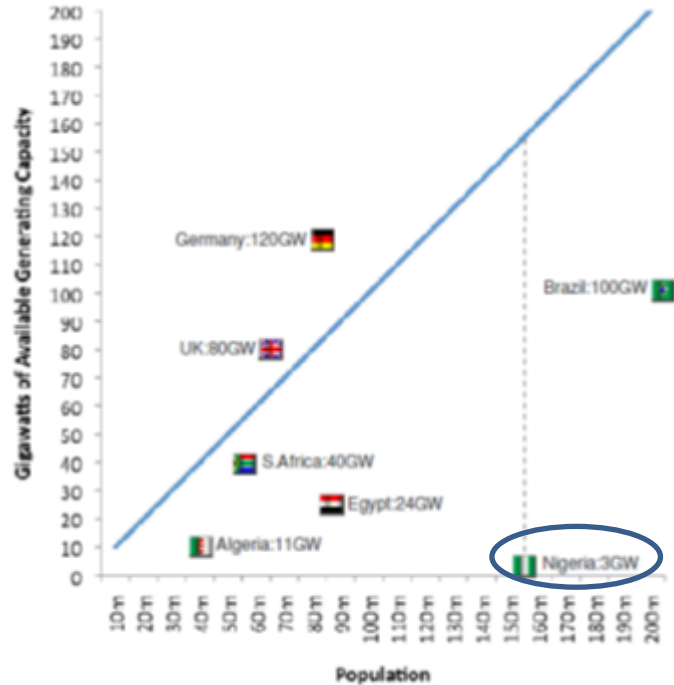
¹⁸ I.e., increase and stabilize the supply of natural gas to power plants to ensure operations are not fuel limited.

to a market-based system by privatizing assets from the State-owned monopoly. Privatization, it is hoped, will provide essential capital for infrastructure projects and improve operations. The Roadmap specifies actions needed to remove barriers to privatization, most notably, fixing the electricity consumer pricing regime to enable profitability. Finally, consistent with NV 2020 and with an eye toward Nigeria’s continental neighbor (South Africa), the Roadmap establishes a goal

of delivering a stable supply capacity of 40 GW by 2020, a ten-fold increase.¹⁹

Prima facie, the Roadmap is sound. It is broadly conceived and provides actionable remedies for the myriad of ailments plaguing the power sector. If the reforms can be implemented, there is no doubt the power situation in Nigeria will improve. However, as analysts Jon Lunn and Gavin Thompson note, “getting any policy from the drawing-board and into practice in Nigeria is always an uphill struggle.”²⁰ Moreover, righting the power-sector ship is no small task and not everyone agrees with the plan. Together with the always present specter of corruption and a mix of security threats, these factors induce drag that will be hard for Nigeria to overcome. These challenges are explored in more detail in the sequel.

Figure 1. Nigeria’s electrical generation capacity is woefully inadequate for its population. A “rule of thumb” for developed nations is 1 GW capacity for every 1 million people (slanted line). **Source:** The Presidency of the Federal Republic of Nigeria, “Roadmap for Power Sector Reform,” 16



¹⁹ The Presidency of the Federal Republic of Nigeria, “Roadmap for Power Sector Reform,” 4.

²⁰ Lunn and Thompson, “Nigeria under Jonathan (SN06135),” 7.

Scale and Complexity

The first and perhaps most fundamental reason for pessimism about Nigeria's prospects with power-sector reform is, to put it colloquially, "the hole is too deep" – the scale and complexity of the problems that must be addressed will not be easily overcome, especially in light of the nation's history in this area. In absolute terms, 40 GW capacity by 2020 is a modest target, especially given a population projected to exceed 200 million by then²¹ (see Figure 1). However, in relative terms this target is very ambitious for Nigeria. Factor in concomitant objectives to stabilize supply, expand access, completely restructure the market, fix fuel-to-supply issues, etc. and the task is monumental. In effect, the Roadmap is a "sprint" plan, yet Nigeria's power sector has not even demonstrated the ability to "crawl." Pragmatically, technical and fiscal barriers suggest a "crawl to walk" pace is far more likely, even with the substantial emphasis placed on this effort by the Jonathan Administration.

The technical challenges are vast. For one, existing power grid infrastructure is aging and increasingly dilapidated – substantial investment is needed just to fix current problems, let alone grow the grid. The high-voltage (330kV) transmission network, for example, suffers from sparse geographic coverage (<40% of the country), obsolete equipment, and overloaded lines and substations.²² Additionally, transmission and distribution power losses average a staggering 40%,²³ and the network is maxed out, even at the low quantity of power currently being fed into the grid. In fact, the gap between generation and transport capacity is expected to grow, leaving potentially hundreds of MW of power that cannot be evacuated onto the grid (this is known as "stranded capacity").²⁴

²¹ World Bank, *Population Projection Tables by Country and Group*.

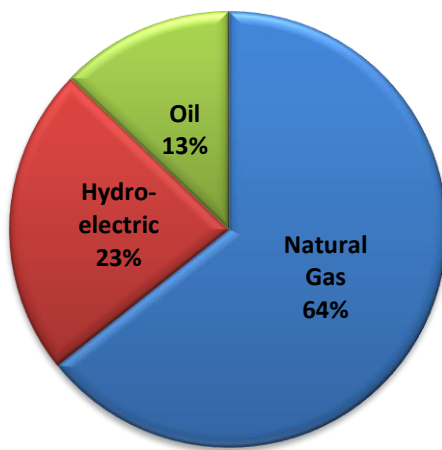
²² Labo, "Transmission Company of Nigeria (TCN) - Status and Outlook," 18.

²³ Ubi, et al., "An Econometric Analysis of the Determinants of Electricity Supply in Nigeria," 75.

²⁴ The Presidency of the Federal Republic of Nigeria, "Roadmap for Power Sector Reform," 11.

Likewise, repairing and expanding the distribution network to reach the 85-100 million who do not currently have access to the grid is a monumental task. The situation is particularly acute in rural areas where some estimates suggest as few as 10% are tied in to the electrical grid.²⁵ In this regard, privatization may actually make matters worse because it would presumably be difficult to recoup the capital costs of expanding the distribution network into low density areas where the customer base, by the way, is also least able to afford electricity due to rampant poverty.

Figure 2. Nigeria electrical power production mix.
Source: International Energy Agency, *IEA Statistics & Balances*



Though power generation has lately received more attention than either transmission or distribution, deep problems remain. Nigeria’s electrical power production mix is dominated by natural gas (Figure 2) and near term expansion will continue to favor gas over other sources (though coal will soon be added to the mix).²⁶ Ironically, despite Nigeria’s abundance of natural gas, the nation’s gas-fired power plants are often left thirsty

resulting in significant stranded generation capacity. Poor planning and mismanagement are partly to blame – some plants were built without properly arranging for distribution pipelines – but counter intuitively, overall supply is also limited (see below).²⁷ Unfortunately, for the planned 4,800 MW of gas-fired power plants that will be fielded in the near future, it may be years before they receive sufficient gas feedstock to run at full capacity.²⁸

²⁵ MBendi Information Services, *Electrical Power in Nigeria*.

²⁶ Nnaji, “Electric Power in Nigeria: The Sun on this Rubble.”

²⁷ Newswatch Magazine, “A Postponed New Day.”

²⁸ Oxford Analytica Daily Brief Service, “Nigeria: Tariff changes will ease power privatisation.”

The above “fuel-to-power” issue highlights the complexity of Nigeria’s challenges. The natural gas industry is perhaps as profoundly dysfunctional as is the electrical power sector -- \$2.5 billion per year in natural gas is flared off oil fields instead of being captured for commercial and consumer use. Fixing the power problem requires fixing the gas problem which is, in turn, linked to the oil industry and all its afflictions. Analogous to the Roadmap for Power Sector Reform, the 2009 *National Gas Master Plan* provides aims to overhaul the natural gas sector by fixing the pricing structure, improving infrastructure, reducing or eliminating flaring, and resolving the fuel-to-power issues for the power sector. However, as is the case with the Roadmap, there are no easy, nor overnight, solutions.²⁹

The Presidential Task Force on Power conservatively estimates the gross price tag to fix and grow the power grid generation, transmission, and distribution capabilities to meet the 2020 goal exceeds \$10 billion per year.³⁰ Not included in that estimate is the \$5 billion the government has committed to a new 765 kV “Super Grid” transmission network that will double transmission capability over the existing network.³¹ Nor does the estimate account for an immediate \$1 billion infusion to address inadequate gas infrastructure as part of an effort to accelerate expansion of fuel-to-power capacity.³² The overall costs for the full implementation of the National Gas Master Plan are also outside the scope of the estimate.

The fiscal challenge is therefore immense with something above \$10 billion to perhaps as high as \$15 billion per year needed for Nigeria to achieve its Roadmap objectives. These totals representing one third to one half the entire federal budget. Granted, by privatizing the sector, the administration is banking on being able to attract external investment to cover

²⁹ U.S. Energy Information Administration, “Nigeria Analysis,” and Business Monitor International, *Nigeria Infrastructure Report Q4 2012*, 44.

³⁰ The Presidency of the Federal Republic of Nigeria, “Roadmap for Power Sector Reform,” 18.

³¹ Oxford Analytica Daily Brief Service, “Nigeria: Tariff changes will ease power privatisation.”

³² Chigbo, “An Initiative that Pays.”

much of the bill. However, significant federal obligations persist, most notably because the transmission network will remain in government hands. With foreign debt already on the rise – \$3.7B in 2009 to \$5.3B in 2011³³ – there are increasing concerns about the administration’s ability to sustain its reform initiatives.³⁴

It should be noted that all is not doom and gloom as there are some promising indicators of forward movement. For example, electrical output reached a record 4.4 GW in January of 2012, up 50% from 2010 when the administration launched the Roadmap. Unfortunately, that achievement was short-lived due to the aforementioned fuel-to-power issues coupled a decrease in hydroelectric output due to low water flows in the Niger River.³⁵ Moreover, the administration can celebrate a reduction in grid failures from an average of 4 per month in 2011 to just one during the first three months of 2012.³⁶ The power sector reforms also seem to be drawing interest among foreign investors. In fact, the government just inked a deal with General Electric to provide 10 GW of generating capacity over the next decade, providing optimism for the future of the country’s power supply.”³⁷

However, on balance progress has been slow and the challenges discussed above argue it will remain that way. To wit, the then Minister of Power, Bart Nnaji, admitted in May that “the [interim] targets have not been met as we would have liked ...”³⁸ while critics point to project delays and argue the government’s power generation targets are optimistic.³⁹ Likewise, the Business Monitor International (BMI) flags stagnation and inadequate maintenance in the power sector and concludes, “given the precedence for delays in project

³³ Chen, “Trading Up – Nigeria’s Infrastructure Fix,” 6.

³⁴ Africa Confidential, “Nigeria: Financial Faultlines.”

³⁵ Nnaji, “Electric Power in Nigeria: The Sun on this Rubble.”

³⁶ Newswatch Magazine, “A Postponed New Day.”

³⁷ Business Monitor International, *Nigeria Infrastructure Report Q4 2012*, 5.

³⁸ Newswatch Magazine, “A Postponed New Day.”

³⁹ Oxford Analytica Daily Brief Service, “Nigeria: Tariff changes will ease power privatisation.”

implementation ... the timetable for the projects and the scale of the reforms are *highly ambitious*⁴⁰ (emphasis mine). BMI forecasts grid capacity to reach only ~14.5 GW by 2020, well short of the 40 GW goal.⁴¹ In short, the Roadmap's targets overreach, particularly in light of the scale and complexity of the problems that must be overcome – power sector reform will certainly not be a “sprint,” but it appears Nigeria is at least starting to “walk.”

Political Friction

Political friction, induced both by fragile public support and active opposition, is a second reason Nigeria is likely to come up short with power sector reform objectives. The Roadmap rightly takes a long term view in pursuit of profound and lasting improvements to the electrical power grid, yet this demands patience from a citizenry whose frustration runs deep and the promise of long term results ring hollow – skepticism and impatience prevail. Moreover, not everyone agrees with the administration's plan, particularly those vested in the status quo. Together these factors collude to decelerate power-sector reform efforts.

Although Nigerians are desperate to see their electricity situation improve, they've been down this road many times before. Before NV 2020 there was NEEDS (National Economic Empowerment and Development Strategy), before NEEDS there was SAP (Structural Adjustment Program), and so on, yet progress has been elusive.⁴² Similarly, successive regimes have promised much but delivered little in terms of power sector improvements. In fact, as much as \$40 billion was applied to power sector initiatives in the last two decades with little improvement in the quality and quantity of electricity produced.⁴³ Nigerians might thus be forgiven for viewing the Roadmap for Power Sector Reform as just more of the same.

⁴⁰ Business Monitor International, *Nigeria Infrastructure Report Q4 2012*, 43-44.

⁴¹ Business Monitor International, *Nigeria Power Report Q4 2012*, 17.

⁴² Ariyo, "Economic Reforms and Social Welfare." 135-45.

⁴³ Brock, "Insight: Murky deals cast doubt over Nigeria's power sell-off."

As Lunn and Thompson put it, “Jonathan has put forward what he calls a ‘transformation agenda’, but some claim that much of what he proposes is ‘old wine in new bottles’.”⁴⁴

This skepticism translates into impatience. 2020 is a long way off –people want to see immediate results. To its credit, the Roadmap addresses this need to deliver measurable short term improvements in route to the 2020 targets. And, as indicated in the previous section, the administration can point to some short term successes, such as the record 4.4 GW output in early 2012. Unfortunately, the subsequent retreat back below 3 GW has cynicism on the rise.⁴⁵ This, in turn, has people further questioning the already controversial electricity tariff increases accompanying the privatization process.

As previously mentioned, Nigeria’s electricity tariffs (the lowest rates in Sub-Saharan Africa⁴⁶) were significantly upside-down. This guaranteed operational losses and mounting debt for the Power Holding Company of Nigeria (PHCN), the government’s umbrella management company for the electrical supply chain. In fact, the cash-strapped PHCN’s resulting inability to pay its primary fuel suppliers is a contributing factor to the gas supply shortage now hampering power generation.⁴⁷ Fixing the tariff inversion was essential not only to allow PHCN to pay its debts, but also to lure buyers for the subsequent privatization of PHCN holdings. Of course, increasing tariffs is not necessarily popular with consumers, a lesson the Jonathan administration learned all too well when its attempt to eliminate the equally macro-economically dysfunctional fuel subsidy incited widespread riots.⁴⁸ To its credit, the administration was far more measured with the rollout of the electricity tariff increases and included features to soften the blow for low income consumers. Nevertheless,

⁴⁴ Lunn and Thompson, “Nigeria under Jonathan (SN06135),” 7.

⁴⁵ Oxford Analytica Daily Brief Service, “Nigeria: Tariff changes will ease power privatisation.”

⁴⁶ Mordi, “New Light on Old Darkness.”

⁴⁷ Nnaji, “Electric Power in Nigeria: The Sun on this Rubble.”

⁴⁸ Rice, “Privatization raises hopes for Nigeria power.”

the frustrations mentioned above spurred significant pushback, with many critical of raising rates before fixing the power problems.

On top of increasing discontent writ large, the administration is rebuffed by a chorus of voices actively opposed to its power sector reform efforts. Industry unions, for example, see the transition to privatized markets as detrimental to their interests. Among the grievances are projected job losses via the elimination of redundant workers,⁴⁹ a running feud over benefits, and potential loss of power/influence.⁵⁰ In addition to an ongoing war of words, union bosses have raised questions about the legitimacy of the privatization bid process and levied conflict-of-interest charges against Minister Nnaji. Union opposition has had a more violent edge to it as well. Strikes and protests have disrupted grid operations, with direct (albeit temporary) impact on the power supply. Outright sabotage with longer lasting effects has also been alleged.⁵¹

Opposition also comes from a generator/diesel fuel “mafia” that profits as a result of the dysfunctional power grid. Unable to count on a reliable supply of electricity, businesses and individuals have increasingly turned to generators for their needs. In fact, Nigeria possesses the greatest concentration of generators in the world.⁵² This has created a \$13 billion cottage industry whose benefactors are none too eager to see disappear. Opposition from this consortium is credited with impeding power reform initiatives over the years.⁵³

The net effect of these factors is a continual disruption of forward momentum for the power sector reform efforts. The loss of Nnaji as Minister of Power is a particularly significant blow – he was highly regarded and his departure raises concerns that investors,

⁴⁹ Mordi, “New Light on Old Darkness.”

⁵⁰ allAfrica, “Nigeria: Economic Saboteurs in Our Midst.”

⁵¹ Oxford Analytica Daily Brief Service, “Nigeria: Tariff changes will ease power privatisation.”

⁵² Business Monitor International, *Nigeria Power Report Q4 2012*, 27.

⁵³ Rice, “Privatization raises hopes for Nigeria power.”

who derived confidence from his expertise, may turn skittish.⁵⁴ Increasingly aggressive and hostile activity by union members is also troubling. Indeed, a recent analysis by Africa Confidential declares, “so far, those blocking reform are winning hands down in the running battles with reformers in the government.”⁵⁵ This conclusion does not bode well for the ambitious power reform goals – progress, it seems, will be slow.

Corruption

Haunting just about any government venture in Nigeria is the specter of corruption. The country rates in the bottom quartile in the World Economic Forum’s indices for *Diversion of public funds, Irregular payments and bribes, and Favoritism in decisions of government officials* and corruption is cited as the second most problematic factor for doing business in the country.⁵⁶ This remains true despite aggressive crack-down efforts by recent administrations. With tens of billions of dollars unaccounted for over the years, the electrical power industry has a particularly sordid past and there is no reason to believe the sector is suddenly squeaky clean. Therefore, power sector reform efforts will most certainly not escape the direct and indirect influences of corruption and this is yet a third reason why Nigeria will fall short of the Roadmap targets.

Arguably, most of the present electrical power grid woes can be attributed to corruption – the sector has not lacked for investment, just results. As *The Economist* artfully puts it, “Many Nigerian leaders have tried to boost the state’s power supply, but many more have become rich by obstructing it.”⁵⁷ Following are a few of the more recent examples:

⁵⁴ *The Economist*, “Reforming Electricity in Nigeria: A bright spark is extinguished.”

⁵⁵ Africa Confidential, “Nigeria: Financial Faultlines.”

⁵⁶ Schwab, *The Global Competitiveness Report 2012-13*, 278-9.

⁵⁷ *The Economist*, “Reforming Electricity in Nigeria: A bright spark is extinguished.”

- 5.2 billion naira (\$33.1 million) fraud in Rural Electrification Agency (REA) left many rural infrastructure projects unfinished.⁵⁸
- 2.5 billion naira (\$15.9 million) in pension funds found stashed in hidden accounts.⁵⁹
- \$20 billion directed to the National Independent Power Projects (NIPP) to build 10 power plants – only four were completed.⁶⁰

Of course, the Jonathan Administration can rightly claim these issues largely occurred before their time and that they are working hard to clean-up the industry. For example, before he became embroiled in his own controversy, Minister Nnaji had a tough-nosed reputation for taking on waste and abuse. In fact, it likely was his campaign to eliminate “ghost” workers (individuals on the payroll who do not perform any work) from power industry payrolls that put him in the union cross-hairs. The unions, accused Nnaji of a conflict-of-interest over his financial stake in one of the companies bidding in the privatization process. For his part, Nnaji had put his shares in a trust and reported his holdings prior to entering office, but the resulting controversy forced Nnaji to step down.⁶¹

This vignette is important for a couple of reasons. First, Nnaji was highly respected and a singular force in propelling the power sector reform initiatives forward – his departure represents a big setback. Second, it illustrates what appears to be common practice in the power play of Nigerian politics: using corruption allegations as a weapon (the pot calling the kettle black, so to speak). It’s unclear which narrative is correct, but the situation has cast a shadow over the privatization process (the government was evaluating bids when this blew up), a process which is itself ripe with possible corruption pitfalls.

⁵⁸ Nnaji, “Electric Power in Nigeria: The Sun on this Rubble.”

⁵⁹ Abonyi, “Nigeria: Firm Puts PHCN Liabilities At Over N392 Billion.”

⁶⁰ Brock, “Insight: Murky deals cast doubt over Nigeria's power sell-off.”

⁶¹ The Economist, “Reforming Electricity in Nigeria: A bright spark is extinguished.”

To accomplish privatization, the PHCN was disaggregated into a total of six generation and eleven distribution companies and offered for sale to private investors (the transmission system remains in government hands but will be managed by a private company). The Roadmap touts the many potential advantages: influx of private capital, market efficiencies, improved management and oversight, better metering and collection, etc. However, skeptics claim privatization is simply a lucrative feeding trough whereby capital assets can be acquired at deep discount by oligarchs with deep pockets but little relevant experience.⁶² Even more, the influx of billions of dollars of private capital into a public-private marketplace is a target-rich environment for graft at many levels.⁶³

The debate has raged even with the privatization process ongoing. Watchdog groups decried a lack of transparency after being marginalized in the process⁶⁴ and a regional group of state governors called the process “fraudulent” after their favored companies did not make the “leading bidder” cut.⁶⁵ For its part, the National Council on Privatization (NCP) claims the process is above board and notes that officials from both of the government’s anti-corruption commissions observed the entire process.⁶⁶

Once again, it is unclear which of the competing narratives is true. However, given Nigeria’s history with corruption, it would be naïve to think the privatization process will escape unscathed. Indeed, author Said Adejumbi argues recent attempts at privatization have been a mixed bag.⁶⁷ Therefore, it should be expected that the “arbitrary, exorbitant tax”⁶⁸ imposed by corruption will continue to trouble the electrical power sector. This is not

⁶² Brock, "Insight: Murky deals cast doubt over Nigeria's power sell-off."

⁶³ The Economist, “Electricity in Nigeria: Let there be light.”

⁶⁴ The Economist, “Reforming Electricity in Nigeria: A bright spark is extinguished.”

⁶⁵ Salisu, “Nigeria: PHCN Privatisation - Matters Arising.”

⁶⁶ Ibid.

⁶⁷ Adejumbi, “Introduction: State, Economy, and Society in a Neo-Liberal Regime,” 11.

⁶⁸ Okoosi-Simbine, “Corruption in Nigeria,” 159).

to mention the opportunity cost of capital lost to corruption throughout the economy writ large. In total, this increases the cost of doing business and likely dampens investor enthusiasm, putting the Roadmap's goals further at risk.

Security

Finally, the Roadmap's objectives are threatened by security issues that degrade infrastructure and drain resources. In the micro, the grid is directly threatened by acts of sabotage, theft, and vandalism, while in the macro, extant security threats from groups like MEND (Movement for the Emancipation of the Niger Delta) and the Boko Haram sap government focus and resources. These issues are briefly discussed below.

Sabotage and vandalism induce both financial (repair) and operational effects (supply interruption). Reporting indicates incidents of sabotage and vandalism are widespread. Within the power grid itself, there have been attacks on power facilities,⁶⁹ substation fires (suspected sabotage),⁷⁰ and destruction of electricity equipment throughout the country.⁷¹ Unions are suspected in many incidents and tensions have been high enough at times that military personnel have been sent to protect power facilities.⁷² The fuel-to-power network is also a frequent target of saboteurs as part of the broader conflict in the Niger Delta region. This limits gas supply, directly impacting power production.⁷³

Electricity theft is also a widespread problem. Electricity is siphoned from transformers or low voltage lines, reducing even further the anemic supply available on the grid. In fact, a sizable portion of the 40% line loss is attributed to so called "non-technical" losses (i.e.,

⁶⁹ Nnaji, "Electric Power in Nigeria: The Sun on this Rubble."

⁷⁰ Oxford Analytica Daily Brief Service, "Nigeria: Tariff changes will ease power privatisation."

⁷¹ Ubi, et al., "An Econometric Analysis of the Determinants of Electricity Supply in Nigeria," 75.

⁷² allAfrica, "Nigeria: Economic Saboteurs in Our Midst."

⁷³ Ubi, et al., "An Econometric Analysis of the Determinants of Electricity Supply in Nigeria," 73.

theft).⁷⁴ Perversely, bureaucratic mismanagement of the distribution system has also created a type of unintentional theft. Poor metering and lack of controls has resulted in a collection rate of just 75-80% with obvious implications for operating revenue.⁷⁵

More broadly, Nigeria is besieged by violence from opposition groups with an assortment of grievances. Two primary manifestations are the MEND affecting the Niger Delta region and the Boko Haram based in the northern region. Dealing with these security threats is an increasing distraction for the Jonathan administration. One quarter of the federal budget is now dedicated to security – a sizeable diversion of resources away from basic services and infrastructure.⁷⁶ A Newswatch Magazine report discusses the disappointing lack of progress in reform efforts by the Jonathan Administration but excuses the “slow motion” saying the “Boko Haram is the main reason for the lack of concentration in the government.”⁷⁷

In summary, sabotage and vandalism create a “two steps forward, one step back” effect – they directly impact the availability and reliability of electrical power and divert resources intended for improvements instead to repairs. Theft has the obvious effect of reducing cash-flow and limiting capital available for reinvestment. It also cuts the amount of electricity available to paying customers. The broader security threats manifest as lost opportunity costs for reform initiatives. The cumulative impact of these security issues is to hamstring grid modernization and expansion efforts, thereby thwarting progress toward the 2020 targets.

Conclusion

The rather dim view presented in the preceding discussion highlights the complex challenges confronting Nigeria. Reforming the electrical power system is an imperative –

⁷⁴ Ubi, et al., “An Econometric Analysis of the Determinants of Electricity Supply in Nigeria,” 75.

⁷⁵ MBendi Information Services, *Electrical Power in Nigeria*.

⁷⁶ The Economist, “Nigeria’s Insurgency, Hold your nose and Talk.”

⁷⁷ Newswatch Magazine, “Excusable Slow Motion?”

improving volume and stability of the electrical supply and extending access to the entire population is a necessary (though certainly not sufficient) step in achieving broad socio-economic progress – and the Roadmap for Power Sector Reform is a well-conceived blueprint for making that happen. However, knowing what needs to be done and doing it are two very different things, particularly in the context of complex feedbacks (e.g., security, corruption, political opposition, etc.), daunting technical challenges, and significant fiscal constraints. These issues virtually ensure the administration’s ambitious goals for power sector reform will not be realized.

However, there remains reason for optimism. The Roadmap demonstrates a great deal of clear-headed thinking and it puts the power sector on a very good trajectory, even if progress will be slower than planned. Critics may decry the laggard progress, but the administration needs to stick to its guns. If the Jonathan Administration can sustain the initiative and resolve issues that tend to deter investment, accelerating progress is certainly possible. That, in turn, could unlock tremendous economic potential. Meantime, keep a flashlight handy.

Recommendations

- Continue with power sector privatization but increase transparency in bidding and selection processes. The process must be impartial and merit-based to ensure power sector assets are going to companies who will perform. Confidence in the process is vital to sustaining momentum and luring investment capital.
- Consider possible off-grid power supply solutions for rural communities. For example, much of Nigeria has a favorable climate for solar power which could prove to be a more cost-effective delivery method in many rural areas versus extending the grid.

- Strategic communications: continue to trumpet power reform initiatives and NV 2020 agenda despite opposition. Inspiring a long term perspective is imperative. The more people buy in to the vision, the more patience they will have to see it through.
- Strengthen anti-corruption initiatives and bodies. They need to have “teeth” and they must be truly independent – beyond the political reach of the nation’s power brokers.
- Increase financial accounting disclosure requirements for public and private entities. Increased visibility will make it harder to disguise fraud, waste, and abuse.
- Adopt an aggressive, integrated (public-private) approach to grid security focusing both on detection and prevention. The players in the newly privatized market must work together to synchronize grid security efforts.

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