

# NIGERIA ECONOMIC REPORT

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No. 3  
November 2015





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# ABBREVIATIONS

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bcf	Billion cubic feet
BDC	<i>Bureau de Change</i>
CBN	Central Bank of Nigeria
DGSO	Domestic gas supply obligation
DMO	Debt Management Office
DoG	Department of Gas
DPR	Department of Petroleum Resources
ECA	Excess Crude Account
FOB	Free on board
GACN	Gas Aggregation Company of Nigeria
GDP	Gross domestic product
GPD	Gas and Power Directorate
IMF	International Monetary Fund
LPG	Liquefied petroleum gas
mcf	Thousand cubic feet
mmBtu	Million British thermal units
MPR	Ministry of Petroleum Resources
MW	Megawatts
NAPIMS	National Petroleum Investment Management Services
NDGPR	National Domestic Gas and Pricing Regulations
NER	Nigeria Economic Report
NERC	Nigerian Electricity Regulatory Commission
NGC	Nigerian Gas Company
NGL	Natural gas liquids
NLNG	Nigeria Liquefied Natural Gas
NNPC	Nigerian National Petroleum Corporation
NBS	National Bureau of Statistics
OAGF	Office of the Accountant General of the Federation
PSC	Production sharing contract
SURE-P	Subsidy Reinvestment and Empowerment Programme
WAGP	West Africa Gas Pipeline



# INTRODUCTION

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**T**he Nigeria Economic Report (NER) is a regular publication of the World Bank. Each edition provides an overview of recent macroeconomic developments and devotes special attention to a topic of particular relevance or urgency. In this edition the macroeconomic overview is followed by both a detailed analysis of the country's fuel subsidy and an assessment of the current state and economic potential of its natural gas sector.

2015 has been a momentous year for Nigeria. The general elections held in March brought about the first democratic transition of power from a ruling party to an opposition party, heightening expectations for meaningful political change. The new Government is taking power during a very challenging time, however, marked by a sharp decline in global oil prices and continuing violence in the country's northeast. This creates a difficult context for realizing the new administration's ambitious reform agenda for job creation, the power sector, oil and gas, agriculture, and public administration.

As noted above, this edition of the NER examines two prominent subjects of debate in Nigeria: the fuel subsidy and the natural gas sector. The current budgetary crisis has again motivated Nigeria to reconsider the fiscal costs of the fuel subsidy, while the acute inadequacy of power generation in Nigeria has cast increasing attention on the natural gas sector. Chapter 2 of the report analyzes the costs and benefits of Nigeria's fuel subsidy, including their implications for low-income households. Fuel subsidy costs are expected to amount to 18 percent of government oil revenues in 2015, and this share could increase to more than 30 percent by 2018 even if oil prices remain low.

There is a general consensus that increasing the supply of power in Nigeria is critical to the future development of the country. The success of the current plans to boost generation capacity will hinge on the development of the natural gas sector. Nigeria is endowed with substantial natural gas reserves, but major reforms will be necessary to attract the investment necessary to harness the potential of the natural gas sector to supply the domestic energy market. Chapter 3 of this report summarizes the current regulatory situation in the natural gas sector and outlines potential avenues for reform.

This edition of the NER was prepared by a World Bank team led by John Litwack (Lead Economist) and Khwima Nthara (Program Leader and Lead Economist). Masami Kojima (Lead Energy Specialist) is the primary author of Chapter 3, and also contributed to other sections. Andrew Dabalen (Lead Economist), Jariya Hoffman (Senior Economist), Gloria Joseph-Raji (Senior Economist), and Olayinka Babalola (Economist-Consultant) also made contributions.



# MACROECONOMIC OVERVIEW

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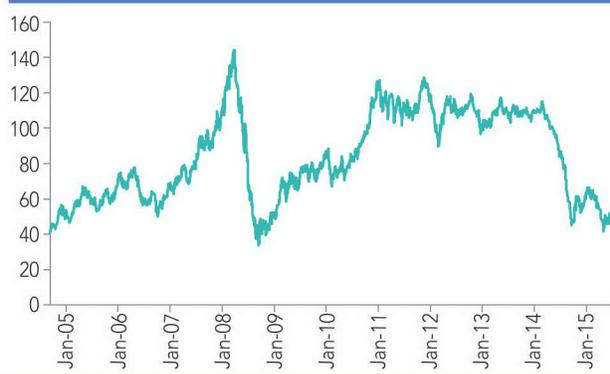
## Summary

Given the high dependency of Nigeria on oil revenues, the recent sharp decline in oil prices has given rise to major challenges in the form of external imbalance, steep falls in government revenues, and slower economic growth. In contrast to the period of 2008–2009, Nigeria no longer has a large fiscal reserve to buffer government budgets from the revenue shortfalls. As a result, distributions to federal and state government budgets declined in nominal terms by 39 percent in the first half of 2015 relative to the same period of 2014. Federal and state governments have slashed capital spending, and a number of states have struggled just to pay salaries to civil servants and service domestic debt obligations. The pace of growth in Nigeria has slowed in light of lower foreign inflows from oil and the fiscal contraction. The national currency has depreciated by 20 percent between November 2014 and March, 2015, leading to a significant import contraction that has alleviated some of the pressure on the naira. New currency controls on the forex market should bring further significant import contraction, although they are also expected to negatively impact trade and GDP growth. Other recent policy initiatives include a financial assistance package for State budgets, measures to rationalize the management and operation of the Nigerian National Petroleum Corporation (NNPC), fight corruption, and resolve the conflict in the North East of the country. The fuel subsidy, which is imposing a large and increasing burden on public finance, has become the focus of renewed policy debate.

For the medium term, Nigeria will need to create the fiscal space needed to provide the public services essential for maintaining and accelerating progress in job creation and poverty reduction. However, it will likely be unable to rely on oil revenues as in the past. Oil prices are expected to remain weaker over the medium term than their recent historical levels. Even if oil prices rebound to those levels, the absence of growth in the oil sector implies that oil revenues will most likely continue to decline relative to the size of the Nigerian economy, as illustrated in Chapter 2 of this Report. On the positive side, the sovereign debt position of Nigeria is still strong, there is potential for boosting non-oil revenue generation, and investors stand ready to bring significant resources to the country if they receive signals of commitment by the new Government to policy directions and regulations consistent with strong private-sector-led growth.

## The Oil Price Shock

Crude oil prices have declined sharply since June 2014 and are expected to remain significantly below their recent historical levels over the medium term. Bonny Light crude prices fell by almost 60

**Figure 1.1: Brent crude prices (US\$ per barrel)**

Source: U.S. Energy Information Administration.

percent from a peak of US\$114 per barrel in June 2014 to less than US\$45 per barrel in January 2015. Prices briefly rallied, rising to over US\$65 per barrel at mid-year before dropping again to less than US\$50 per barrel. Oil prices are inherently volatile and difficult to predict, but current forecasts anticipate that prices will remain weak over the next several years.

**Nigeria is heavily dependent on oil revenues, and the decline in oil prices had a major impact on its economy and its public finances.**

In recent years oil and gas have comprised over 90 percent of Nigeria's exports and more than 70 percent of consolidated budgetary revenue. While the oil sector accounts for less than 15 percent of GDP, inflows from oil sales have helped bolster domestic demand, thereby driving economic growth. When the global financial crisis caused oil prices to drop during 2008–2010, the Government was able to draw on US\$22 billion in fiscal revenue accumulated in the Excess Crude Account (ECA) to finance a fiscal stimulus that successfully sustained growth despite the worsening external environment. At the time the current shock occurred, falling oil output and an increasing cost of the fuel subsidy during 2011–2014 had already drained the ECA down to US\$2 billion. Consequently, 2015 has witnessed a major fiscal contraction and significant slowdown in economic growth. Given expectations for lower average oil prices in the future, Nigeria will likely need to undergo a rapid fiscal adaptation that reduces the dependency of government finance on oil.

## GDP and Economic Growth

**The pace of growth in Nigeria has slowed.**

Following a strong 6.2 percent GDP growth rate in 2014, growth declined to 4 percent, year-on-year, in the first quarter of 2015, falling to 2.4 percent in the second quarter and 2.8 percent in the third quarter (Table 1.1). Non-oil GDP growth registered at 4 percent for the first three quarters of 2015, down from the 7.3 percent growth pace in 2014. NBS figures show the pace of job creation slowing by 45 percent, year-on-year, in the second quarter of 2015, providing further evidence of a significant economic slowdown. Falling oil revenues have weakened domestic demand, while rising uncertainty during the run-up to the general elections in March and a major fuel shortage in the second quarter related to fuel subsidy payments disrupted economic activity. After years of double-digit growth manufacturing contracted by 2.1 percent, year-on-year, in the first three quarters of 2015. The oil and gas sector also declined in the first half of 2015. Oil production has contracted since 2011, and while output stabilized somewhat in 2014, recent liquidity and profitability concerns have negatively affected the sector, joining the issues of low investment, regulatory uncertainty, and oil theft/vandalism that can also be associated with previous years of output decline. However, growth in the oil and gas sector in the third quarter of 2015 was slightly positive.

**Services accounted for 61 percent of Nigeria's GDP during the first half of 2015, while the share of oil and gas fell to 7 percent.**

As industry and agriculture performed poorly in the first half of 2015, services and trade expanded their share in GDP. The share of the service sector has risen steadily from 50 percent of GDP in 2011 to more than 60 percent in the first half of 2015. Trade, information and communications technology, and real estate together comprise almost 70 percent of service sector output (Table 1.2). Trade was the single largest sectoral component of GDP in the first half of 2015 at 19.5 percent, followed by agriculture (17.8 percent), information and communications technology (12.9 percent), manufacturing (9.7 percent), real estate (8.3 percent), and oil and gas (7.1 percent).

Table 1.1: Real GDP growth by sector (%)

	2011	2012	2013	2014	Q1 2015	Q2 2015	Q3 2015
<b>Total GDP</b>	<b>5.3</b>	<b>4.2</b>	<b>5.5</b>	<b>6.2</b>	<b>4.0</b>	<b>2.4</b>	<b>2.8</b>
Agriculture	2.9	6.7	2.9	4.3	4.7	3.5	3.5
Industry	8.0	2.2	1.8	7.0	-2.1	-3.3	-0.1
Oil and Gas	2.3	-4.9	-13.1	-1.3	-8.1	-6.8	1.0
Solid Minerals	14.5	19.7	16.5	14.9	11.3	7.1	7.0
Manufacturing	17.8	13.5	21.8	14.7	-0.7	-3.8	-1.8
Construction	15.7	9.4	14.2	13.0	11.2	6.4	0.0
Services	5.1	4.1	8.5	6.7	6.7	4.6	4.0
Information & Communication	2.2	3.1	8.2	7.0	9.5	6.3	5.8
Finance & Insurance	-26.9	21.1	8.6	8.1	9.0	6.4	6.6
Real Estate	0.4	5.7	12.0	5.1	3.1	3.0	2.0
Accommodation & Food Services	9.2	15.9	73.9	18.3	26.7	-9.0	-5.4
Arts, Entertainment & Recreation	148.3	27.4	25.5	31.2	25.6	6.3	6.4
Trade (wholesale & retail)	7.2	2.2	6.6	5.9	6.5	5.1	1.0
<b>Non-Oil GDP</b>	<b>5.9</b>	<b>5.8</b>	<b>8.3</b>	<b>7.3</b>	<b>5.6</b>	<b>3.5</b>	<b>3.0</b>

Source: The National Bureau of Statistics (NBS).

Table 1.2: Sector shares in Nigerian gross national product (% of GDP)

	2011	2012	2013	2014	Q1 2015	Q2 2015
<b>Agriculture</b>	<b>22.3</b>	<b>22.1</b>	<b>21.0</b>	<b>20.2</b>	<b>17.8</b>	<b>17.9</b>
<b>Industry</b>	<b>27.8</b>	<b>26.8</b>	<b>25.4</b>	<b>24.2</b>	<b>21.1</b>	<b>21.2</b>
Oil and Gas	17.5	15.8	12.9	10.8	6.6	7.6
Solid Minerals	0.1	0.1	0.1	0.1	0.1	0.1
Manufacturing	7.2	7.8	9.0	9.8	10.2	9.3
Construction	3.0	3.1	3.3	3.6	4.2	4.2
<b>Services</b>	<b>49.9</b>	<b>51.1</b>	<b>53.7</b>	<b>55.6</b>	<b>61.1</b>	<b>60.9</b>
Information & Communication	10.1	10.1	10.4	10.8	11.9	13.9
Finance & Insurance	2.4	2.8	3.0	3.1	4.0	3.7
Real Estate	7.3	7.7	8.3	8.4	7.8	8.7
Accommodation & Food Services	0.4	0.5	0.8	0.9	1.3	0.7
Arts, Entertainment & Recreation	0.1	0.2	0.2	0.2	0.3	0.2
Trade (wholesale and retail)	16.4	16.5	17.1	17.6	20.1	18.9
Other services	13.2	13.3	13.8	14.5	15.8	14.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: NBS.

## External Balance and Monetary Policy

The 20 percent depreciation of the naira and successful conclusion of peaceful elections stabilized the external balance in the second quarter of 2015. Nigeria's external balance had been almost uniformly negative since April 2013, resulting in a steady erosion of foreign reserves (Figure 1.2). Falling oil output began weakening the trade balance in 2012, although strong short-term capital inflows of more than US\$30 billion kept the balance of payments in surplus until mid-2013. An accelerated decline in oil output and more cautious attitudes among investors in the latter half of 2013 and early 2014 put some pressure on the naira. While a recovery in oil output and a more positive economic outlook briefly moved the balance of payments into surplus in mid-2014, the subsequent drop in oil prices, magnified by election-related uncertainty, intensified exchange-rate pressures in late 2014 and early 2015. However, following the depreciation of the naira and a peaceful transfer of political power, Nigeria's balance of payments has showed signs of renewed stability, with gross foreign reserves remaining at close to US\$30 billion from end-March through November.

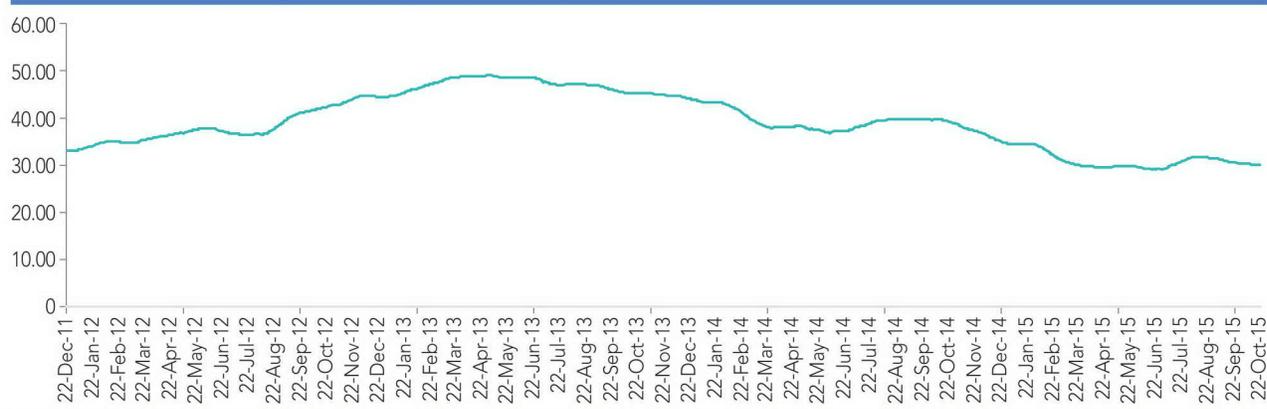
**Imports fell by 23 percent in the first half of 2015, yet Nigeria's trade balance remains weak.** Trade statistics must be interpreted with caution, as widespread under-invoicing and smuggling result in a large share of "hidden" imports. However, the available figures still

provide important insights into the evolution of the country's trade balance. Official customs statistics show a monthly trade surplus of US\$2–3 billion during most of 2014, which virtually disappears in 2015 (Figure 1.3). According to preliminary data, the depreciation of the naira contributed to a 23 percent decline in the dollar value of imports, year-on-year, in the first half of 2015. However, the dollar value of exports fell by 45 percent during the same period. Due to the pervasiveness of "hidden" imports in Nigeria, the actual trade balance may have shifted into deficit. The central bank's subsequent imposition of currency controls in the forex market should cause imports to contract further, potentially restoring the trade surplus.

### A stabilization in capital flows may also be assisting the recent restoration of external balance in Nigeria.

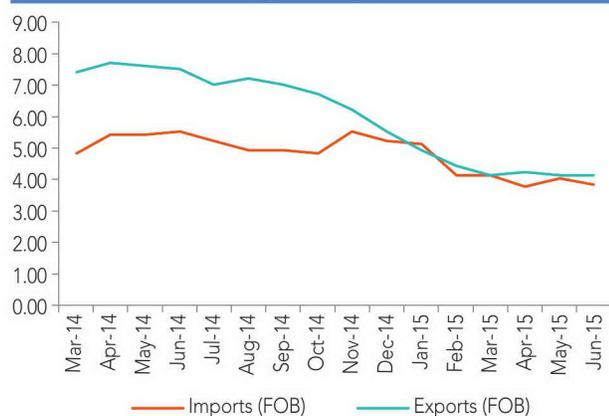
Table 1.3 presents the Nigerian balance of payments from 2011 through the first half of 2015. Since 2013, the balance of payments shows highly negative "errors and omissions." As markets perceive that much of the high portfolio (short-term) investment that came to Nigeria in the second half of 2012 and first half of 2013 has now left the country, the US\$42 billion in negative errors and omissions recorded in 2013 and 2014 likely contains much of this short-term capital outflow. Thus, one of the reasons for the stabilization of the balance of payments since the second quarter of 2015, despite a weak trade balance, could be that there is no longer a large supply of liquid capital of this type in Nigeria.

**Figure 1.2: Nigeria's gross foreign reserves (US\$ billions)**



Source: The Central Bank of Nigeria (CBN).

**Figure 1.3: Monthly exports and imports: 2014–2015 (US\$ billions, free-on-board prices, three-month moving average)**



Source: CBN.

**The central bank has taken steps to unify the exchange rate and depreciate the naira.** Authorities responded to the strong downward pressure on the naira in the fourth quarter of 2014 by depreciating the currency by 6 percent, restricting access to the official exchange window, and limiting its sales of forex at this window. The initial depreciation in November, 2014 was inadequate to equilibrate the forex market, and large gaps opened up between the official exchange rate, the interbank rate, and the *bureau de change* (BDC) cash rate, while pressure on reserves continued. The Central Bank reacted in February by closing the official window altogether and moving its interventions to the interbank market. This unified the official exchange rate with the market (interbank) rate, and allowed the naira to depreciate effectively by another 12 percent. Foreign

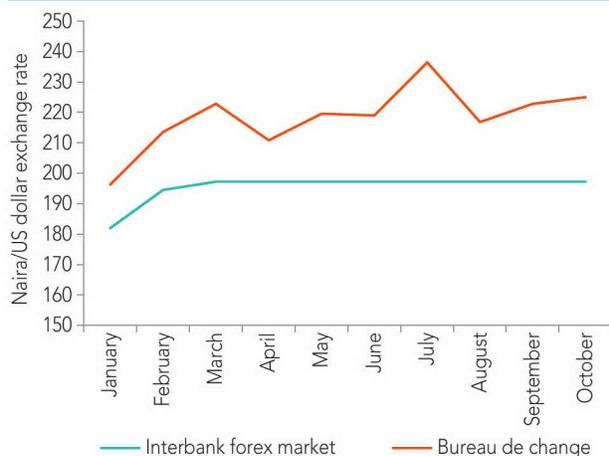
**Table 1.3: The balance of payments of Nigeria (US\$ billions)**

	Annual				Quarterly					
	2011	2012	2013	2014	2014		2015			
					Q1	Q2	Q3	Q4	Q1	Q2
Current account balance	10.8	17.1	19.1	1.3	3.2	-0.2	1.4	-3.1	-5.4	-1.6
Trade balance	33.1	39.5	42.5	21.0	7.6	6.0	6.5	0.9	-0.8	0.9
Exports of goods	99.9	96.9	97.8	82.6	22.2	22.6	21.2	16.6	12.3	13.1
of which oil	93.9	91.3	90.6	76.5	20.9	20.2	20.0	15.5	11.2	11.7
Imports	66.8	57.4	55.3	61.6	14.6	16.6	14.7	15.7	13.0	12.2
Services balance	-21.4	-21.7	-19.6	-22.4	-5.3	-6.4	-5.2	-5.5	-3.8	-3.7
Income balance	-23.0	-22.6	-25.7	-19.2	-4.4	-5.4	-5.3	-4.1	-6.0	-3.7
Current Transfers	22.0	22.0	21.9	21.9	5.3	5.6	5.4	5.6	5.2	4.9
Capital account balance	-4.6	-0.8	8.0	4.7	-2.9	-0.3	3.5	4.3	1.8	-3.3
Net Direct Investment	8.1	5.6	4.4	3.1	0.8	1.0	0.7	0.6	0.4	0.3
Inflows	8.9	7.1	5.6	4.7	1.1	1.4	1.2	1.0	0.7	0.6
Outflows	-0.8	-1.5	-1.2	-1.6	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4
Net portfolio investment	4.1	15.6	11.6	1.8	-1.1	2.2	2.4	-1.6	-0.3	1.1
Inflows	5.2	17.2	13.7	5.3	0.1	2.9	3.1	-0.8	0.3	1.5
Outflows	-1.1	-1.6	-2.0	-3.5	-1.2	-0.7	-0.7	-0.9	-0.6	-0.4
Net other investment	-16.8	-22.0	-8.0	-0.2	-2.6	-3.4	0.3	5.4	1.7	-4.7
Inflows	0.7	0.8	2.3	10.7	2.2	3.6	2.6	2.4	1.6	0.3
Outflows	-17.5	-22.8	-10.4	-10.9	-4.8	-6.9	-2.2	3.0	0.1	-5.1
Errors and Omissions	-5.9	-5.1	-28.1	-14.4	-5.7	0.4	-3.8	-5.2	-1.2	3.9
Movement in Foreign Reserves	0.3	11.2	-1.0	-8.5	-5.5	-0.1	1.1	-4.0	-4.8	-1.1

Source: CBN.

Note: 2015 figures are preliminary.

**Figure 1.4: Interbank and BDC naira/U.S. dollar exchange rates**



Source: CBN.

exchange markets in Nigeria have remained somewhat segmented, however, with Bureau de Change (BDC) street rate for cash reaching almost 240 naira to the U.S. dollar in mid-2015, while the interbank rate has remained slightly below 200 (Figure 1.4).

**In June, 2015, the Central Bank introduced a series of strong capital controls on the foreign exchange market.** The combination of these controls directs limited Central Bank forex offerings on the interbank market at the defended exchange rate to higher priority transactions, while also preventing the conversion of cash forex into electronic (non-cash) funds for payments. Furthermore, the Central Bank completely banned the use of either export proceeds or forex markets for financing the importation of goods from a list of 41 items that are deemed of relatively low importance or targeted for import substitution. The Central Bank also no longer accepts cash forex deposits and has compelled commercial banks to do the same. While these measures have been somewhat disruptive to trade and commerce in the country, the Central Bank expresses the hope that they will reduce pressures on the national currency and encourage import substitution in designated areas. A stabilization of the naira on the BDC market since July likely reflects a related decline in value of cash forex in Nigeria for purposes of commerce.

**The Central Bank has tightened its monetary policy stance.**

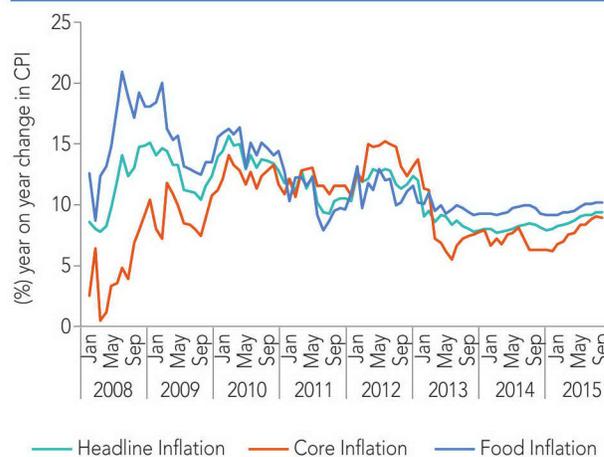
In addition to the depreciation of the naira, the Central Bank’s Monetary Policy Committee increased the base interest rate from 12 to 13 percent in November 2014. In May 2015, the Central Bank increased cash reserve requirements for private sector deposits at commercial banks from 20 percent to 31 percent while decreasing the cash reserve requirements for public sector funds from 75 percent to 31 percent. In September 2015, the 31 percent requirement for both private deposits and public funds was eased to 25 percent. Policies tightening interest rates and reserve requirements for private deposits have proven controversial given the shortage of liquidity and the reluctance of commercial banks to lend to the private sector. The Central Bank has defended these measures as necessary to control inflation and manage liquidity.

**Inflation**

**The rate of inflation has remained high in Nigeria, although tight macroeconomic policy since 2011 supported a gradual reduction in inflationary pressures (Figure 1.5).**

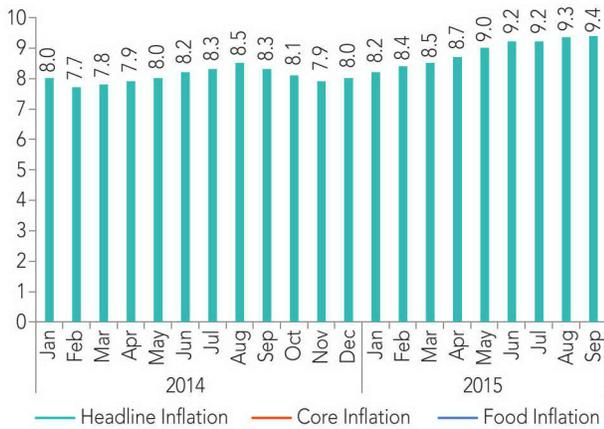
This trend was interrupted in 2012 due to major increases in administratively set prices for utilities and fuel combined with exceptionally poor agricultural conditions (Figure 1.5). During most of 2014 inflation was driven by rising food prices. Food accounts for 51.8 percent of Nigeria’s Consumer Price Index (CPI),

**Figure 1.5: Inflation rates, 2008–2015**



Source: NBS.

**Figure 1.6: The headline inflation rate, 2014–2015 (year-on-year)**



Source: NBS.

and as food prices began to decline in September, CPI inflation fell from 8.5 percent in August to 8.3 percent in September and 7.9 percent in November. The annual CPI inflation rate was 8 percent in both 2013 and 2014.

**Inflation increased in 2015 as the naira weakened.**

The depreciation of the naira increased the prices of imports, and pushed the pace of year/year inflation in Nigeria to more than 9 percent by mid-2015. In addition, the acute scarcity of fuel in petrol stations during the months of April and May contributed to upward pressure on prices. Lower oil prices have a quite limited effect

on inflation, as fuel prices are set administratively in accordance with the fuel subsidy. The administrative price was lowered from 97 to 87 naira early in the year, although enforcement has been a major problem. The causes of rising inflation rates in the first half of 2015 are largely temporary. However, import restrictions imposed as part of the central bank’s exchange-rate policy have likely added to inflationary pressures in the second half of 2015, as could the monetization of state government deficits.

**Government Budgets and Fiscal Policy**

**With oil production levels still very weak, the decline in oil prices has led to a significant drop in revenues to the Federation Account.**

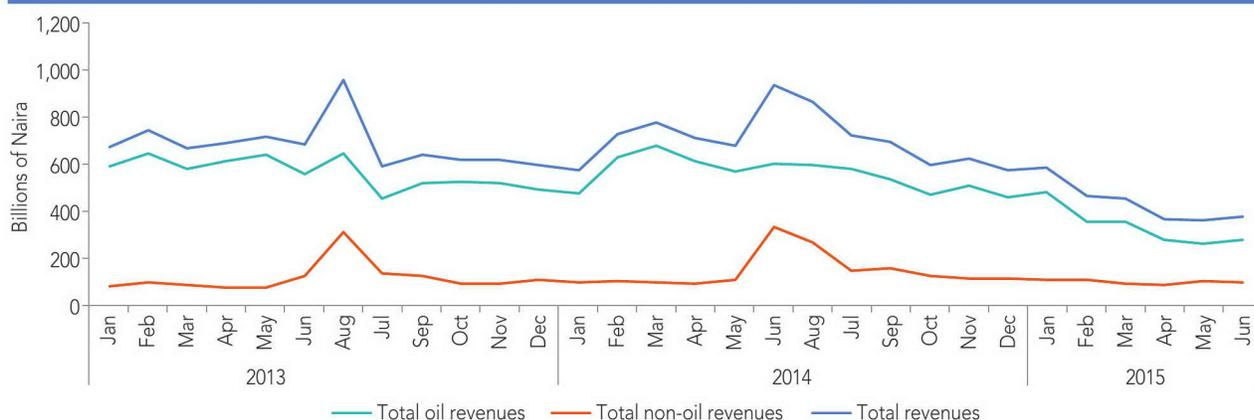
Crude production has been repeatedly and severely disrupted by oil theft and the destruction of pipelines. Pipeline damage has led to temporary production shutdowns, causing huge fluctuations in crude production (Figure 1.7). However, falling oil prices have recently had a far greater effect on total revenues. While crude production during the second half of 2014 averaged 2.16 million barrels per day, down from 2.17 million barrels per day during the same period in 2013, the precipitous drop in inflows into the Federation Account in 2014 was primarily caused by the collapse of global oil prices (Figure 1.8). In 2015 both oil prices and output have continued to decline, and between February and June oil revenues were down 51 percent, year-on-year.

**Figure 1.7: Daily crude oil production (monthly average)**



Source: NBS.

**Figure 1.8: Revenues inflows to the federation account and the VAT pool**



Source: OAGF.

**Nigeria was unable to buffer the impact of oil revenue declines on government finance with the fiscal reserve (ECA) as in 2008–2009.**

The ECA had already depleted to US\$2 billion by late 2014. The Government’s efforts to replenish the ECA during the period of higher oil prices from 2011 to mid-2014 were largely unsuccessful. Three primary factors prevented the accumulation of an adequate fiscal reserve since 2010. A major fiscal expansion of the Federal Government in 2010 and early-2011 virtually exhausted the remaining fiscal reserve at a time when the country could have been rebuilding it. Beginning in mid-2011 the authorities attempted to consolidate the public finances and rebuild reserves, and the ECA balance reached US\$10 billion at end-2012. In 2013, however, declining oil output negatively affected public revenues, while the fuel subsidy became increasingly expensive. The fuel subsidy is estimated to have cost the government US\$35 billion between 2011 and 2014, which would have been more than enough to replenish the fiscal reserve. Yet when oil prices fell in June 2014, ECA resources amounted to just US\$3.6 billion, and by the end of the year the balance had dropped to just US\$2.1 billion.

**In the absence of adequate fiscal reserves, monthly revenue allocations to federal, state and local governments declined sharply from the second half of 2014 through 2015.**

Between January and June 2015 funds distributed by the Federation Account Allocation Committee (FAAC) fell by 39 percent, year-on-year.

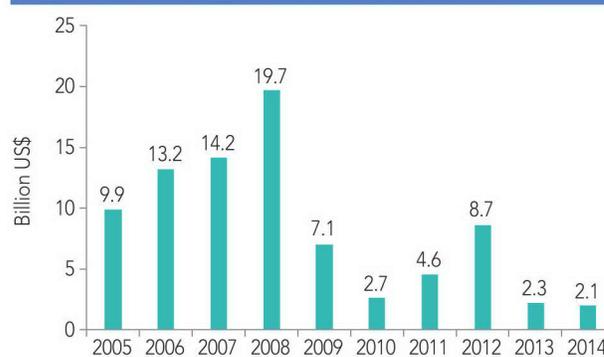
Moreover, a combination of rising inflation rates and the depreciation of the naira implies that the decline in real purchasing power has been even greater.

**A shrinking resource envelope prompted the Federal Government to introduce significant cuts and adjustments to the 2014 and 2015 budgets, with a particular focus on capital expenditures.**

Federal revenues in 2014 were 15 percent below the level anticipated in the approved budget, with oil revenues falling 6 percent below expectations.<sup>1</sup> The Federal

<sup>1</sup> The Nigerian government has consistently over-projected nonoil revenues. Until recently, nonoil revenue shortfalls were offset by oil revenues, which were routinely under-projected. However, in 2013 and 2014 actual revenues in both categories failed to meet expectations.

**Figure 1.9: End-year balances in the ECA**



Source: OAGF.

**Figure 1.10: Revenues allocated by FAAC**



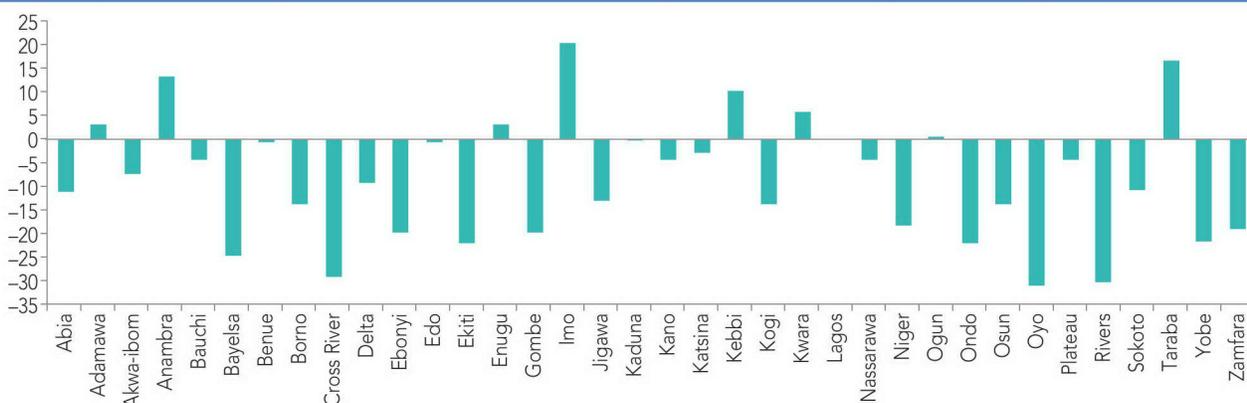
Source: OAGF.

Government responded by significantly reducing capital expenditures in 2014. While Nigeria’s capital-budget execution rates have generally been low, in 2014 actual spending amounted to just 39 percent of budgeted spending, down from 60 percent in 2013. This was not merely the result of the usual implementation bottlenecks, but a deliberate move by the Federal Government to curb expenditures. The approved 2015 budget is 4 percent lower in nominal terms than the budget approved in 2014. Again, planned capital spending bore the brunt of the impact, falling by 50 percent from its planned 2014

level. Resource allocations to priority social sectors such as education and health were protected in the 2015 budget. The total share of education spending was 9.3 percent, compared to 9.0 in the approved budget for 2014, while health spending accounted for 5.7 percent, up from 5.0 percent in 2014. However, in the context of the revenue crisis, the execution rate for the 2015 capital budget was just 10 percent at mid-year.

**Nigerian states have been hit particularly hard by the oil price shock,** Nigerian states depend on Federation Account (mostly oil) allocations for the vast majority of their budgetary revenues and face greater borrowing constraints than the Federal Government. They have therefore been compelled to tighten their budgets substantially. Given the nature of the revenue sharing rule, the extent of the decline in oil revenues accruable to the Federal Government is identical for most Nigerian states. For the oil-producing states, the decline is even greater. Most states have limited borrowing capacity and require federal approval for any foreign borrowing. Many states reportedly accumulated salary arrears in 2015, some for more than six months, while a number have had difficulty servicing their domestic debt. Twenty-seven of Nigeria’s 36 states passed 2015 budgets that were lower, in nominal terms, than those approved in 2014. Approved state budgets for 2015 are on average 18 percent below the approved budgets for 2014 (Figure 1.11).

**Figure 1.11: Percentage deviation of 2015 state budgets over 2014 approved budgets**



Source: World Bank Subnational Database.

**The President and the Central Bank announced an assistance package in mid-2015 aimed primarily at assisting distressed States for paying salary arrears and meeting other critical expenditure obligations.**

An additional allocation of US\$2.1 billion to federal and state budgets was made out of tax reserves from the Nigeria Liquefied Natural Gas Company and Shell. In addition, the Federal Government has offered a financial relief package consisting of two programs. First, the Debt Management Office (DMO) restructured states' short-term commercial bank debt into long-term Federal Bonds with 20-year maturity and yield of 14.83 percent (30 day average). This restructuring was concluded in September 2015, and amounted to N575.516 billion that was extended by 15 commercial banks to 23 states. According to the Debt Management Office, the debt restructuring for 23 states lowered the short-term monthly debt service burden by 55 to 97 percent, and generated interest rate savings from 3 to 9 percent per annum. Secondly, commercial banks were encouraged to issue additional credits to states at 9 percent interest rate and 20-year maturity to help clear salary and pension arrears. Banks can finance these loans

from resources otherwise held as obligatory reserves with the Central Bank, and re-payment is guaranteed as deductions from future revenues designated for FAAC distribution. A total of 27 states have applied for these loans in the amount of N337.8 billion naira, and some are already drawing credits. The financial relief package is providing much needed short-term financial relief to Nigerian States, although major fiscal adjustment at the state level will likely be needed going forward.

**Nigeria's fiscal deficit is expected to widen, yet the country still has space to borrow.**

While an uncertain macro-fiscal context makes public revenues and expenditures difficult to predict, the general government deficit is currently projected to increase to almost 3 percent of GDP in 2015. This deficit will be financed primarily through domestic sources. Nigeria's foreign debt was restructured a decade ago, and subsequent prudence in debt-management policy has afforded Nigeria some space to smooth the fiscal adjustment. Nigeria's sovereign domestic debt represents less than 9 percent of GDP, and its external public debt amounts to just 2 percent.

**Table 1.4: The general government budget (% of GDP)**

	2010	2011	2012	2013	2014	2015 (proj)
General Government Revenues	12.9	16.2	14.7	12.1	11.7	7.6
Federal	6.5	5.8	4.9	4.7	3.9	2.5
Consolidated States	5.9	6.0	5.6	5.6	4.5	3.1
Extra Budgetary Funds	0.8	0.9	2.5	1.7	2.0	1.0
Deductions for Fuel Subsidy	1.2	2.8	1.2	1.4	1.3	1.0
Net Accumulation to ECA	-1.5	0.7	0.5	-1.4	0.0	0.0
General Government Expenditures	15.5	17.2	13.8	14.8	13.1	10.4
Federal	7.5	6.8	5.8	5.7	4.5	3.6
Consolidated States	6.0	6.5	5.9	6.0	5.3	4.8
Extra Budgetary Funds	0.8	1.0	1.0	1.7	2.0	1.0
Fuel Subsidy	1.2	2.8	1.2	1.4	1.3	1.0
General Government Balance	-2.6	-1.0	0.9	-2.7	-1.4	-2.8
Federal Balance	-1.0	-1.0	-0.9	-1.0	-0.6	-1.1
Consolidated State Balance	-0.2	-0.5	-0.3	-0.4	-0.8	-1.7
Consolidated Federal and State Balance	-1.1	-1.5	-1.2	-1.4	-1.4	-2.8

Sources: OAGF, Ministry of Finance, World Bank Subnational Database, IMF.

Note: Due to data limitations state-level figures should be treated as rough estimates.

**The current budgetary crisis in Nigeria reflects exceedingly low non-oil tax revenue.** In recent years, non-oil tax revenues in Nigeria amounted to a mere 4 percent of GDP, and much of this revenue has been concentrated in the single city of Lagos. Even compared to other highly oil-dependent countries this share is very low. Nonoil tax revenue in Angola is equal to 8 percent of GDP, while nonoil revenues in Cameroon and Gabon represent approximately 13 percent and 21 percent of GDP, respectively. The nonoil revenues of the most oil-dependent countries in the Former Soviet Union, Kazakhstan and Azerbaijan, equal more than 12 percent of GDP, and Russia's nonoil revenues reach 26 percent.<sup>2</sup> Nigeria has considerable potential to increase its nonoil revenues, and as oil revenues continue to decline as a share of GDP over both the medium and long term, the country faces an imperative task of building a more effective tax system and administration for generating non-oil revenues.

## The Economic Outlook

**Nigeria faces a difficult short and medium term macroeconomic outlook, but has the opportunity to make major progress toward more diversified development and greater efficiency in public finance.** Nigeria must endure a major fiscal adjustment to lower oil revenues. Even if oil prices rebound, the general rapid trend toward a decline in the share of oil revenues in GDP should continue. However, the country has much room for increasing efficiency in the public sector, including greater cooperation and coordination in the budgetary policies of the Federal Government and Nigerian states in the prioritization of key public services and infrastructure for a maximal impact on the welfare of Nigerians and the emergence of a single unified strong national market. As indicated above, there is also significant potential for increasing non-oil tax revenues. Fiscal adjustment to the new

conditions will be a critical challenge for Nigeria in the short and medium term.

**Economic growth is expected to remain relatively weak in the short term.** Nigeria's recent growth has been driven by domestic demand, which in turn has been fueled by oil revenues. It has thus slowed along with domestic demand, and the currency controls in the second half of the year have also likely slowed commerce. Higher growth in Nigeria should gradually resume as its economy adjusts to lower commodity prices. The successful elections in March, 2015 brought new attention to Nigeria, which could potentially manifest itself in an acceleration of growth and investment in subsequent years. The clarification and pursuit of key economic policy directions by the new Government will be a key determining factor for confidence in Nigerian markets. The weaker naira should boost domestic competitiveness, with expanded opportunities for exports and import substitution over the medium term.

**The future of the country's external balance remains uncertain, though the depreciation of the naira and the imposition of capital controls appears to have been sufficient to restore general balance of payments equilibrium in the second half of 2015.** The naira's depreciation in a context of falling oil prices generated a significant import contraction. While the further weakening of oil prices in July and August would have otherwise exerted further downward pressure on the naira, the central bank's currency controls should continue to depress imports. Rising oil prices or increased capital inflows could also have a positive impact on the external balance.

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<sup>2</sup> The above information was taken from IMF Article IV Reports for these countries.

**Table 1.5: Selected economic indicators**

	2011	2012	2013	2014	2015 (proj)
GDP Growth (%)	5.3	4.2	5.5	6.2	3.2
Inflation Rate (CPI Dec/Dec, %)	10.3	12.0	8.0	8.0	9.5
General Government Budget Balance (% of GDP)	-2.0	0.4	-3.1	-1.9	-3.1
Federal Government Budget Balance (% of GDP)	-2.0	-1.4	-1.4	-1.1	-1.8
Fiscal Reserves (ECA/SWF) US\$ b	4.6	8.6	3.0	2.1	2.1
Gross Monetary Reserves (\$ b)	32.6	46.0	43.6	34.5	30.0
Nominal Exchange Rate (N/US\$), eop	158	157	158	168	197
Sovereign Debt (% of GDP)	12.8	13.1	12.4	12.6	13.3
External	1.9	1.9	1.7	1.8	1.6
Domestic	10.9	11.2	10.7	10.8	11.7
Domestic Credit to the Private Sector (% of GDP)	22.5	21.0	20.0	23.9	25

Note: General Gov. balance includes Federal, State, Local, Extra-Bdg Funds, Fuel Subsidy, Net Change in ECA.

\* Projections.

Note: Estimates as shares of GDP use new re-based GDP numbers.

# OIL REVENUES AND THE FUEL SUBSIDY

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## Summary

This Chapter examines the costs and benefits of the fuel subsidy in Nigeria in light of current prospects for oil prices and revenue. Overall, the fuel subsidy appears to have very modest benefits for everyday Nigerians, particularly given the fact that the administratively set prices for petrol and kerosene are no longer enforced in most of Nigeria. The lack of enforcement means that almost all benefits are captured by importers and traders; moreover, even if these prices were fully enforced, it is estimated that the richest 20 percent of Nigerians would capture most of the benefits. On the other hand, the costs of the subsidy are very high and growing with time, as increasing petrol demand in Nigeria outpaces growth in oil output or revenues. The US\$35 billion cost of the fuel subsidy during 2010–2014 was a primary reason why Nigeria was unable to accumulate a fiscal reserve in the Excess Crude Account that could have protected the country from the recent oil price shock. Fuel subsidy obligations are expected to reach 18 percent of all government oil revenues in 2015, and, if the current regulated prices are maintained, this is projected to increase to more than 30 percent by 2018.

## Introduction

**A recent sharp decline in oil prices and revenues has once again motivated Nigeria to reconsider its commitment to the fuel subsidy, which compensates importers and traders of petrol and kerosene the difference between estimated world market prices and fixed pump prices of 87 and 50 naira per liter, respectively.** The fuel subsidy has been a continual source of controversy in Nigeria. Previous governments have tried to remove it, but popular unrest led to its reinstatement. Some Nigerians considered the fuel subsidy to be one of the only tangible benefits that they receive from the Government, and have been skeptical that the Government would put the resources to better use for them in the event of its removal.

**The fiscal cost of the fuel subsidy is very high, reaching an estimated US\$35 billion during 2010–2014.** Moreover, annual costs are increasing over time due to rising fuel demand and the depreciation of the naira. In recent years numerous audits and reports have identified widespread corruption and fraud in the administration of the fuel subsidy, and official petrol imports have substantially exceeded actual consumption. Attempts by the Government to crack down on fraud and delay payment of the subsidy have commonly met with severe fuel shortages in the country that also impose high economic and welfare costs on Nigerians. This Chapter intends to inform the current discussions in Nigeria on the future of the fuel subsidy by seeking to clarify its current costs

and benefits to the country, and how the situation could be expected to evolve in the near future.

## The Benefits of the Fuel Subsidy

**The policy of the fuel subsidy is to provide benefits to the population and firms in the form of lower petrol and kerosene prices.** This has both direct benefits for consumers as well as indirect benefits through lower costs of transportation. However, the available evidence suggests that the actual benefits received by most Nigerian households, especially those in the middle and at the lower end of the income distribution, are marginal at best, particularly given the fact that the administratively set price for kerosene has not been enforced, and enforcement of the subsidized petrol price has also become increasingly weak in recent years. Moreover, even if the administrative prices were fully enforced, the inherently regressive nature of fuel subsidies would enable wealthier consumers to capture the majority of benefits.

**The fuel subsidy is regressive in nature because wealthier households almost always spend more on fuel than their poorer counterparts.** The extent of this regressivity is visible in Nigerian household budget data. In 2010–2011 the Harmonized Nigeria Living Standards Survey (HNLSS) administered by the NBS asked respondents how much they spent on fuel for private consumption (i.e. private vehicles, generators, cooking, etc.), for business purposes, and for public transportation. At this time, the administrative prices for petrol and kerosene were 65 naira and 50 naira, respectively. If these

prices had been fully enforced, the average consumer would have received a subsidy of 61 naira per liter of petrol and 71 naira per liter of kerosene, and it is assumed that public transportation costs would have been 50 percent higher without the subsidy. It should be noted that these calculations focus on direct benefits and exclude the potential pass-through effect of subsidies on prices for food and consumer goods. However, as most of Nigeria's domestic transportation services are provided by diesel-powered vehicles, and there is no subsidy for diesel, this pass-through effect is likely to be small.

**Table 2.1 presents the average value of the subsidy that would have been received by Nigerian consumers in 2010 if the administrative prices for petrol and kerosene had been fully enforced.**

Benefits are broken down by income decile: "D1" refers to the poorest 10 percent of the population, "D2" refers to the second-poorest, and so on. Assuming full enforcement of administrative prices the average per capita monthly subsidy received by Nigerian consumers would have been 460 naira; however, even under these conditions the distribution of benefits would have been deeply regressive. The value of the subsidy received by the wealthiest 10 percent is 30 times the value received by the poorest 10 percent. Moreover, the majority of benefits that would accrue to the poor come from the kerosene subsidy, which is not enforced in practice.<sup>3</sup> If the kerosene subsidy

<sup>3</sup> Nigeria's poor have virtually no access to kerosene at the subsidized price of 50 naira. This was emphasized in the 2012 Report of the Ad-Hoc Committee of the House of Representatives

**Table 2.1: Average Value of the Fuel Subsidy by Income Decile: 2010 (naira per capita per month)**

	All	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
All Subsidies	459.8	55.2	115.6	156.5	198.4	243.1	341.4	438.9	517.7	838.6	1692.2
Kerosene Subsidy	171.5	37.2	62.5	79.6	103.1	118.9	144.9	182.5	215.6	299.7	471.0
Petrol Subsidy	82.9	1.3	5.6	9.8	12.4	20.0	36.0	57.7	77.7	139.8	468.3
Petrol Subsidy, Firms	61.5	2.0	19.9	23.6	24.7	30.1	64.9	75.3	49.4	131.9	193.1
Transportation Subsidy	143.9	14.7	27.6	43.5	58.2	74.1	95.6	123.4	175.0	267.2	559.8

**Table 2.2: Average Value of the Fuel Subsidy by Income Decile: Urban Households, 2010 (naira per capita per month)**

	All	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
All Subsidies	693.4	97.6	231.3	284.7	370.0	446.4	499.0	628.0	791.7	1266.8	2314.4
Kerosene Subsidy	255.6	59.3	107.7	144.3	171.5	211.2	247.7	261.9	321.8	413.8	615.7
Petrol Subsidy	88.0	1.0	6.9	11.7	20.6	26.6	32.1	55.8	93.4	129.0	502.0
Petrol Subsidy, Firms	105.9	12.5	56.4	58.1	63.4	71.2	44.6	91.0	101.9	273.6	286.1
Transportation Subsidy	243.9	24.8	60.3	70.5	114.5	137.3	174.7	220.1	274.5	450.4	910.3

**Table 2.3: Share of Fuel Subsidies Received by Each Decile if Administrative Prices Fully Enforced, 2010 (naira per capita per month)**

	All	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
All Subsidies	100.0	1.2	2.5	3.4	4.3	5.3	7.4	9.5	11.3	18.2	36.8
Kerosene Subsidy	100.0	2.2	3.6	4.6	6.0	6.9	8.4	10.6	12.6	17.5	27.5
Petrol Subsidy	100.0	0.2	0.7	1.2	1.5	2.4	4.3	7.0	9.4	16.9	56.5
Petrol Subsidy, Firms	100.0	0.3	3.2	3.8	4.0	4.9	10.6	12.2	8.0	21.4	31.4
Transportation Subsidy	100.0	1.0	1.9	3.0	4.0	5.1	6.6	8.6	12.2	18.6	38.9

is not included, the poorest 10 percent of Nigerians would receive an average estimated per capita benefit from the fuel subsidy of just 18 naira per month.

**A large share of poor Nigerians live in rural areas, where they receive almost no benefit from fuel subsidies.** Since benefits to the poor are concentrated in urban areas, Table 2.2 presents estimates for the urban population exclusively. While the estimated benefits to urban consumers are larger than they are for the population as a whole, the distribution of those benefits

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“To Verify and Determine the Actual Subsidy Requirements and Monitor the Implementation of the Subsidy Regime in Nigeria.” An attempt had previously been made to eliminate the kerosene subsidy by Presidential Decree in 2009 on the grounds that “subsidy payments by Government do not reach the intended beneficiaries.” Indeed, the kerosene subsidy is so unenforced that it is widely believed to have been repealed, yet subsidy payments to the NNPC continue.

remains extremely regressive. Excluding the kerosene subsidy, the benefits to the poorest 10 percent of the urban population would be less than 45 naira a month, and the benefits to the poorest 50 percent of the population would be less than 265 naira a month.

**Finally, Table 2.3 shows the share of fuel subsidy benefits that would have accrued to each decile of the population if administrative prices had been fully enforced.** The results are stark: the bottom 60 percent of the population would have received a mere 17 percent of the value of petrol subsidies, while the wealthiest 10 percent would have received a full 46 percent. The kerosene subsidy is less regressive, yet the top 30 percent of the population would still have captured 58 percent of its benefits. When both subsidies are combined, households in the wealthiest decile would have received about 37 percent of the overall benefits, and households in the 6 poorest deciles would have received just 25 percent.

**Figure 2.1: Administrative petrol prices and average actual consumer prices (naira per liter)**



Source: NBS.

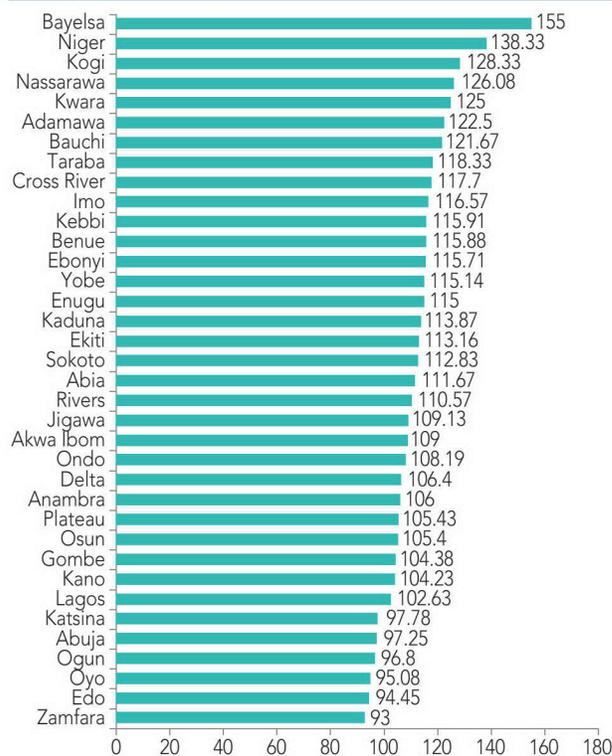
**The weak enforcement of administrative prices further reduces the benefits of fuel subsidies to Nigerian households.**

The NBS has been surveying households since mid-2014 to document the actual petrol prices paid by consumers in each Nigerian state. The survey confirms that actual petrol prices have systematically exceeded administratively set prices. Furthermore, this gap grew significantly in 2015 (Figure 2.1), and as of June the national average consumer price for petrol was 112 naira per liter. While NBS data show large variations across states (Figure 2.2), the actual price in each state is higher than the administratively set price of 87 naira per liter. In June 2015 the average actual consumer price was under 100 naira in only 6 states, while in 7 states the actual consumer price was over 120 naira.

**These results indicate that most Nigerians receive little benefit from the fuel subsidy.**

To the degree that the pump price of petrol is enforced, the majority of benefits are captured by the richest 20 percent of the population. To the degree that these prices are not enforced, all of the benefits are captured by fuel importers and traders. Certainly, there is at least a small group of Nigerians of modest means who continue to profit significantly from the fuel subsidy, for example taxi drivers in regions where the subsidy is enforced to at least some degree. Even for these consumers, those benefits would need to be weighed against the costs for them of related

**Figure 2.2: Average actual consumer petrol prices by state, June 2015 (naira per liter)**



Source: NBS.

periodic fuel shortages and long lines at petrol stations that would otherwise not exist.

**The Costs of the Fuel Subsidy**

**The fiscal cost of Nigeria’s fuel subsidy has risen to US\$4–6 billion per year.**

There are other important costs as well. Uncertainty about the fuel subsidy has strongly discouraged investment in domestic oil refining. Moreover, artificially low fuel prices distort incentives and encourage excessive consumption of energy. Allegations of corruption and fraud surrounding the implementation of the fuel subsidy are costly to the reputation of government. Finally, subsidy-related fuel shortages have repeatedly disrupted economic activity and imposed serious welfare costs on Nigerian households.

**Annual spending on the fuel subsidy now accounts for roughly one-fourth of all federal budgetary spending.** This is significantly greater than the entire

executed federal capital budget, and greater than all federal spending on education and public health combined. Following the reduction of the subsidy in 2012, the Government channeled some of the savings into a Subsidy Reinvestment and Empowerment Programme (SURE-P), with the explicit purpose of demonstrating superior alternative government programs. The assessment of the results of SURE-P proved somewhat controversial. However, the World Bank's 2013 NER highlighted a particular cost of the fuel subsidy that often goes unacknowledged: the opportunity cost of not accumulating fiscal reserves as a buffer against future oil-price shocks. If the US\$35 billion spent on the fuel subsidy between 2011 and 2014 had instead accrued to the ECA, Nigeria would now be in a much more advantageous position for protecting priority expenditures in the wake of the oil price shock.

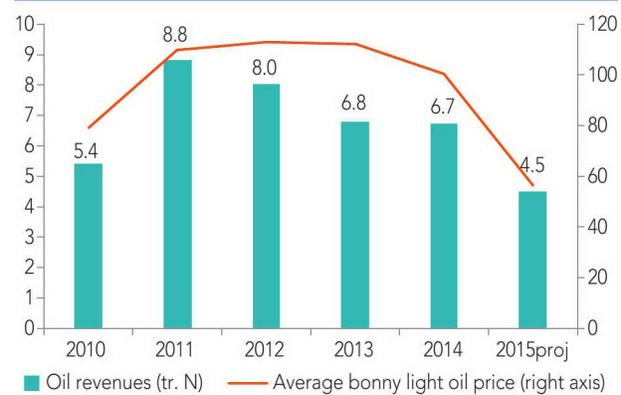
**The 2013 NER examined the projected evolution of oil revenues and the ECA under various assumptions for oil prices, the fuel subsidy, and policies surrounding distribution to budgets.** The analysis reached two overarching conclusions. The first was the necessity of a fiscal adjustment. Even in 2013 it was already apparent that without a major increase in nonoil revenues the current level of government spending as a share of GDP could not be sustained. The second conclusion was that fuel subsidies were imposing a large and increasing burden on public finances, as domestic fuel consumption was growing at a faster rate than oil production. In addition, every time the naira depreciates, the cost of subsidizing a nominal fixed price increases. The 2013 NER identified the fuel subsidy as the primary obstacle to rebuilding ECA reserves when oil prices were high. This edition of the NER reexamines these questions in light of Nigeria's experience over the past two years. The analysis presented below underscores the enormity of the current and projected costs of Nigeria's fuel subsidy.

**In recent years oil revenues have steadily decreased in both nominal terms and as a share of GDP.** While oil prices remained strong through the fourth quarter of 2014, an unexpected drop in oil output diminished revenues already in 2011–2012 (Figure 2.3). A combination of low prices and output is projected to reduce nominal revenues even further in 2015. The drop in oil revenues

relative to the size of the Nigerian economy is far greater than the nominal declines (Figure 2.4). Oil revenues tumbled from a peak of 14 percent of GDP in 2011 to a projected 4.4 percent in 2015.

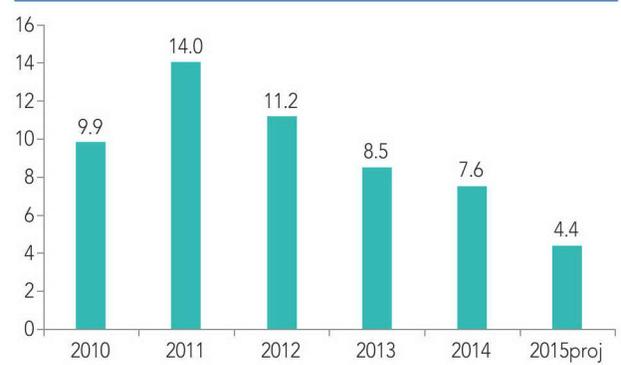
**Figure 2.5 gives the distribution of Government oil revenues between budgets, cash calls to NNPC, the fuel subsidy, and net accumulation to the ECA.** Cash calls to NNPC are intended to finance the Nigerian part in investments by joint ventures in the oil sector. In recent years, these allocations have reportedly been inadequate to finance planned investments, leading to increased debts of NNPC to international oil companies. Expenditure

**Figure 2.3: Oil price and gross oil revenues to government (trillions of naira and US\$ per barrel)**



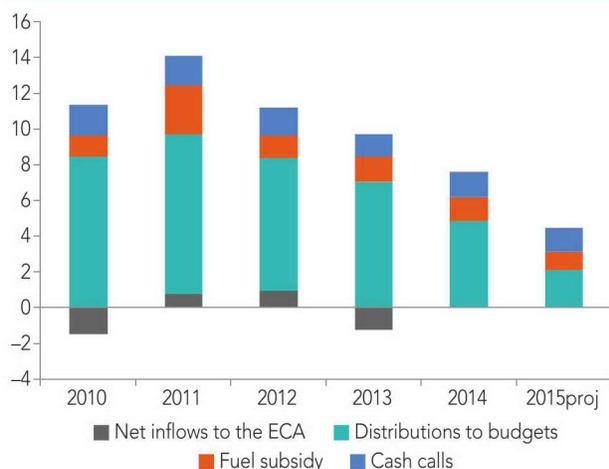
Sources: OAGF, CBN.

**Figure 2.4: Gross oil revenues to government (% of GDP)**



Sources: OAGF, NBS.

**Figure 2.5: Distribution of oil revenues (% of GDP)**



Sources: OAGF, NBS, World Bank calculations.

on the fuel subsidy is dictated by the difference between the world market and fixed domestic naira prices on petrol and kerosene, plus margins for profits and transportation costs. In Figure 2.5 and what follows, fuel subsidy payments are listed on an accruals basis. Distributions of oil revenues to budgets were sometimes higher or lower on a cash basis than illustrated in Figure 2.5 due to the accumulation or payoff of fuel subsidy arrears. Also, in this Chapter, “distributions to budgets” is defined loosely to include direct FAAC distributions to budgets and extra-budgetary funds, as well as SURE-P and other small final uses of oil revenues other than cash calls, fuel subsidy payments, and ECA accumulation.

**Distributions of oil revenues to budgets have gradually eroded in recent years.**

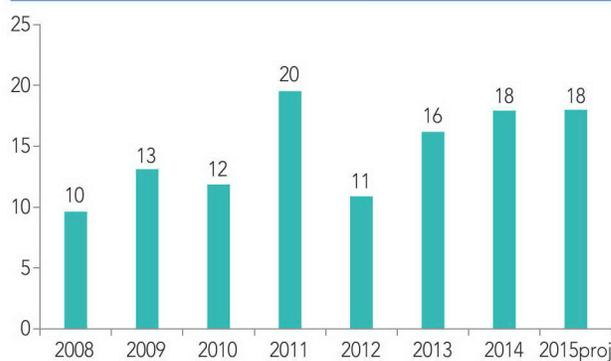
In 2010, distributions to budgets of oil revenues of 8.4 percent of GDP, as well as cash calls and fuel subsidy payments, were supported through drawing down US\$5.5 billion dollars in reserves from the ECA. Higher oil prices in 2011 can be associated with distributions to budgets of 8.9 percent of GDP and even a small accumulation in the ECA. A very large increase in fuel subsidy payments to more than US\$11 billion in 2011 prevented what would have been a much more substantial augmentation of the ECA. This massive increase in fuel subsidy payments became the subject of

scandal and investigation in Nigeria. In 2012, an increase in the domestic fixed price on petrol from 65 to 97 naira per liter, together with a crackdown on fraudulent imports, decreased the burden of the fuel subsidy. Due largely to the weakness in oil output, however, distributions to budgets of oil revenues were more modest at 7.5 percent of GDP, while the ECA balance increased to an estimated US\$8.7 billion by the end of the year. In 2013, a significant fall in oil output required the use of US\$6.5 billion dollars from the ECA to maintain distributions at 7.1 percent of GDP while meeting growing obligations for the fuel subsidy and cash calls. In 2014, after the ECA balance fell to only US\$2 billion, the Government took the decision to stop drawing down the ECA to support distributions. Distributions to budgets of oil revenues fell sharply to an estimated 4.8 percent of GDP in 2014, and are expected at 2.1 percent of GDP in 2015.

**Since 2012, the burden of the subsidy on government finance has steadily increased, and is now almost as great as in 2011.**

This can be seen in Figure 2.6, which illustrates fuel subsidy obligations of the Federal Government as a share of oil revenues. The rising burden of the fuel subsidy can be associated with the combination of falling oil revenues and increasing domestic petrol demand. While the halving of the fuel subsidy in 2012 brought the burden of related obligations, the share of the fuel subsidy in Nigerian oil revenues has increased every year since. As in 2014, fuel subsidy

**Figure 2.6: Share of fuel subsidy in government oil revenue (%)**



Sources: OAGF, NBS, World Bank calculations.

obligations in 2015 are projected to amount to 18 percent of government oil revenues.

**Part of the reason that the burden of the fuel subsidy did not decline in 2015, despite much lower oil prices, was the decision in January to decrease the administered naira price of petrol from 97 to 87 per liter.**

The logic given for this decision at the time was that the world price of petrol had declined to the point where the size of the fuel subsidy would become negligible, and some of these benefits could therefore be passed on to petrol consumers in Nigeria. But the naira was under downward pressure at the time, and its further depreciation due to the fall in oil prices was inevitable. Following the depreciation of the naira, as well as a partial strengthening of oil and petrol prices, the expected burden of the fuel subsidy once again rose to a level comparable to that of 2014. As of early July, 2015, the PPPRA determined an estimated open market price of petrol at 138 naira a liter and open market price for kerosene of 117.95 a liter, implying a subsidy of 51 and 68 naira for every liter of petrol and kerosene consumed, respectively. If these prices had been maintained for the rest of 2015, the burden of the fuel subsidy would have grown to more than 20 percent of oil revenues. In light of lower oil prices, the size of the subsidy fell to 15 and 56 naira a liter, respectively, by October. However, expected subsidy obligations in 2015 are still close to 800 billion naira.

**The analysis presented in this chapter includes two prospective scenarios for oil revenues and the fuel subsidy.**

The following assumptions underpin both scenarios: (i) gross government oil revenues will remain at 50 percent of total oil revenues, consistent with the 2012–2014 average;<sup>4</sup> (ii) cash calls will represent 1.3 percent of GDP, slightly lower than in recent years; (iii) domestic fuel consumption will grow at the same rate as GDP; (iv) oil output will be 2.2 million barrels a day in 2015, rising to 2.3 million in 2016–17 and reaching 2.4 million in 2018; and (v) the current administrative prices of 87 and 50 naira per liter of petrol and kerosene, respectively, will be maintained over the projection period. Projected import prices for petrol and kerosene are based on global oil-price projections. For the sake of simplicity, both scenarios assume no net change in the ECA.

**Table 2.4: Projections macroeconomic indicators for scenario 1**

	2015	2016	2017	2018
Bonny Light Oil Price	56	57	58	59
GDP Growth	3.5	4	5	6
Oil Output (mln b/day)	2.2	2.3	2.3	2.4
Naira Exchange Rate	195	205	207	210
Inflation (CPI)	9.5	8.5	8	7

Source: World Bank staff.

**Scenario 1 is based on current projections for the global oil market, and prices are expected to remain well below their recent historical averages through 2018.**

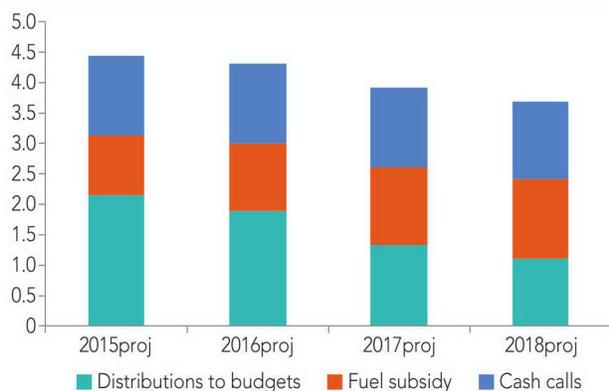
The average oil price is projected to gradually increase to US\$59 a barrel by 2018. The GDP growth rate is expected to slow to 3.5 percent in 2015 before rebounding to 6 percent by 2018 as the economy adjusts to an environment of lower oil prices. The average interbank exchange rate is expected to rise from an estimated 195 naira per US dollar in 2015 to 210 by 2018. The CPI inflation rate is projected to ease from 9.5 percent in 2015 to 7 percent by 2018.

**Under Scenario 1, the fuel subsidy and cash calls would increasingly crowd out distributions to budgets.**

In this scenario, Nigeria's GDP will continue to grow faster than oil revenues; as a result, oil revenues will decline from 4.4 percent of GDP in 2015 to 3.7 percent by 2018 (Figure 2.7). Rising fuel consumption and a weaker naira will push the cost of fuel subsidies to a projected 35 percent of total oil revenues by 2018. Fuel subsidy costs would actually exceed budget distributions of oil revenues, as the latter would account for just 29 percent of oil revenues, or 1.1 percent of GDP.

<sup>4</sup> This share has declined in recent years primarily due to an increase in production-sharing contracts relative to joint ventures, as government revenues are typically greater under the latter. The increasing use of modified carry agreements, under which international oil companies finance part of the government's share of joint investments in return for future tax exemptions, is also contributing to the decline in the government's share of oil revenues.

**Figure 2.7: The Size and distribution of oil revenues, scenario 1 (% of GDP)**



Sources: OAGF, NBS, World Bank calculations.

**Under Scenario 1 the elimination of the fuel subsidy would enable budget distributions of oil revenues to be maintained at 2.4–3.0 percent of GDP throughout the projection period.** Postponing new oil investments could conceivably reduce the burden of cash calls as well, though evaluating the implications of this option is beyond the scope of the present analysis. It is possible that a substantial share of recent cash calls have been devoted to servicing the NNPC’s large debts to international oil companies.

**Scenario 2 presents a more optimistic forecast, in which oil prices rise to US\$90 per barrel by 2018, and annual economic growth accelerates to 7 percent.** In this scenario the naira would likely appreciate in real terms. The analysis assumes that central bank would maintain the exchange rate at 197 naira per US dollar and use the opportunity to rebuild the country’s foreign-exchange reserves, allowing the real appreciation to occur via inflation. Consequently, the inflation rate in Scenario 2 is higher than in Scenario 1.

**Despite increasing oil revenues are a share of GDP in Scenario 2, the rising costs of the fuel subsidy prevent a corresponding increase in distributions to budgets.** Under Scenario 2 oil revenues would rise from a projected 4.4 percent of GDP in 2014 to 5.1 percent in 2018 despite the more rapid pace of economic growth. Nevertheless, budget distributions would remain

**Table 2.5: Projected macroeconomic indicators for scenario 2**

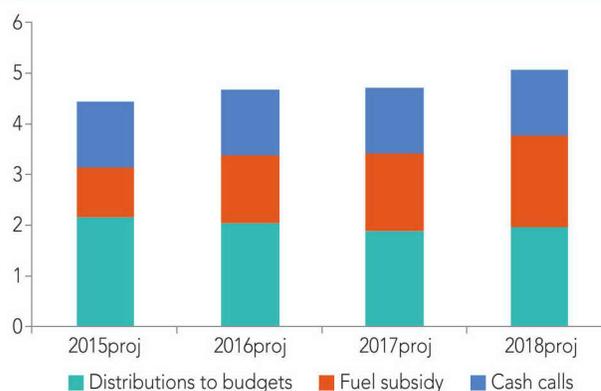
	2015	2016	2017	2018
Bonny Light Oil Price	56	65	75	90
GDP Growth	3.5	4.5	6	7
Oil Output (mln b/day)	2.2	2.3	2.3	2.4
Naira Exchange Rate	195	197	197	197
Inflation (CPI)	9.5	9	8.5	8.5

Source: World Bank staff.

essentially unchanged at 2 percent of GDP from 2015 to 2018. The fuel subsidy would consume the entire increase in oil revenues (relative to GDP) during the projection period, reaching 36 percent of oil revenues by 2018. More rapid GDP growth would cause the demand for petrol to increase at a faster pace, and higher oil export prices would imply higher petrol import prices. Under this scenario the elimination of the fuel subsidy would enable budget distributions of oil revenues to increase from 2.1 percent of GDP in 2015 to close to 4 percent by 2018.

**In conclusion, the recent decline in oil prices, together with increasing demand for petrol and a weaker naira, have increased what were already**

**Figure 2.8: The size and distribution of oil revenues, scenario 2 (% of GDP)**



Sources: OAGF, NBS, World Bank calculations.

**enormous costs of the fuel subsidy on government finance in Nigeria.** The fuel subsidy is projected to reach a 18 percent of government oil revenues in 2015. Furthermore, maintaining the fuel subsidy at current fixed pump prices in the near future will cause its burden to steadily increase, reaching over 30 percent of projected government oil revenues by 2018 under different assumptions about oil prices and economic growth. In the event that oil prices remain weak, the cost of the fuel subsidy will increase due to depreciation of the naira and higher fuel demand as the economy grows. In the case that oil prices rebound, the cost of the fuel subsidy will

increase due to higher world market petrol and kerosene prices and the increase in domestic demand.

**These projected costs of the fuel subsidy should be weighed against its perceived benefits.** As indicated above, the vast majority of these benefits have been captured by richer Nigerians as well as fuel importers and traders. In addition, the benefits that ordinary Nigerians were receiving from the fuel subsidy largely vanished by mid-2015, with the prices actually being paid for petrol and kerosene in many parts of the country being closer to world market than regulated prices.



# UNLOCKING THE POTENTIAL OF NIGERIA'S NATURAL GAS SECTOR

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## Summary

Nigeria's natural gas sector has enormous potential to boost the country's power supply, driving accelerated growth and diversification. However, attracting the billions of dollars of investment necessary to develop the sector will require a well-designed institutional and policy framework backed by a credible political commitment. The authorities will need to re-examine a range of critical issues, including the impact of obliging many gas producers to supply the bulk of the gas delivered to the domestic market at a single low price, continuing uncertainty about future gas prices and other critical parameters, the absence of contractual terms to commercialize gas in certain fields, and the pseudo-regulatory roles played by some market operators. In this context, realizing the vast potential of Nigeria's natural gas sector will demand a bold new strategy that includes the establishment of an independent regulator.

## Introduction

Nigeria's natural gas reserves are the 9<sup>th</sup> largest in the world,<sup>5</sup> yet the country suffers from chronic gas shortages. Most of Nigeria's electricity is generated by natural gas, and gas shortages have contributed to an inadequate power supply that slows economic growth and inhibits diversification (Figure 3.1). In the first nine months of 2015, Nigeria produced 7.8 billion cubic feet (bcf) of natural gas per day, of which 44 percent was exported and another 43 percent was used for purposes other than commercial sale,<sup>6</sup> leaving just 13 percent, or about 1 bcf/day, for the domestic market. Moreover, only two-thirds of the natural gas supplied to the domestic market—or 9 percent of total gas production—was used for power generation (Figure 3.2).

**Even in the midst of serious disruptions to the gas supply in the first half of 2015, more gas was being flared than used to generate electricity.**<sup>7</sup> Although gas shortages have now subsided, meeting

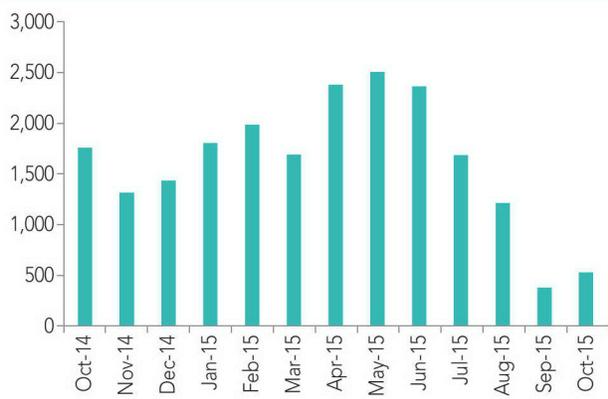
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<sup>5</sup> Nigeria's natural gas reserves are estimated at 180 trillion cubic feet.

<sup>6</sup> These include re-injection for enhanced oil recovery, flaring, and fueling other oil and gas operations.

<sup>7</sup> A large proportion of natural gas is associated gas, which is a byproduct of oil production. Being far more profitable than gas, oil production is the main commercial interest. If gas prices are lower than costs of processing and transporting associated gas, it is more economic to flare (burn) than to commercialize it. While some flaring is unavoidable for safety and other technical reasons, it is possible to commercialize production of associated gas and eliminate routine flaring, enabling more productive use of the gas.

**Figure 3.1: Megawatts of gas-constrained generation capacity**



Source: <http://nesistats.org>.

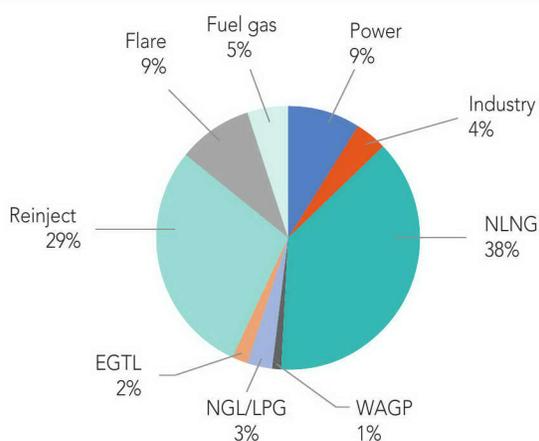
the Government’s target set in the Roadmap for Power Sector Reform of generating 40,000 megawatts (MW) of power by 2020—five times its current installed capacity—will require a massive increase in the volume of gas sold to the power sector. Securing a sufficient, sustainable and progressively increasing supply of natural gas to fuel domestic power plants will require adequate commercial incentives for producers and billions of dollars in additional investment, mostly provided by the private sector.

**Investors have recognized the huge potential of Nigeria’s natural gas sector and are prepared to**

**provide the capital necessary to develop it, provided a set of fundamental conditions are met.** The first condition is confidence that future revenue streams from natural gas production will justify the large initial investment costs. Building this confidence will require setting credible expectations regarding the regulatory conditions under which producers will operate, including market access, prices and payments terms.

**Successive administrations have been aware of the need to provide sound regulatory and commercial conditions for natural gas development, but progress made in modernizing the sector has been limited.** In 2008 the Government adopted the National Domestic Gas and Pricing Regulations (NDGPR), which were intended to provide an adequate return to gas suppliers while also ensuring low prices for the power sector. The NDGPR established the Department of Gas (DoG), a regulatory body within the Ministry of Petroleum Resources (MPR), to regulate the midstream and downstream natural gas sector and ensure equitable access to the country’s network of gas pipelines. The DoG was authorized to issue Domestic Gas Supply Obligations (DGSOs) in order to maintain an adequate gas supply for the domestic market. The regulations also created a domestic gas aggregator to serve as an intermediary between sellers and buyers. Once gas aggregation starts, the domestic gas aggregator pays producers a single

**Figure 3.2: Breakdown of natural gas use in the first nine months of 2015**



**Million cubic feet per day**

Power	686
Industry	341
Domestic market	1,028
Nigeria LNG (NLNG)	2,963
West Africa Gas Pipeline	64
Natural gas liquids (NGL)/LPG	234
Escravos Gas to liquids (EGTL)	156
Exports	3,417
Reinjected	2,245
Flared	748
Fuel gas	404
Non-commercial	3,397
<b>Total</b>	<b>7,842</b>

Source: Performance data at <http://www.nnpcgroup.com>.

aggregate (unified) price, which is the average of all prices paid by different consumers.

**An uncertain regulatory framework and the perception of inadequate transparency represent major obstacles to investment in Nigeria's natural gas sector.** Sectoral regulations are incomplete, their terms are often unclear, and their implementation has been inconsistent. Some institutions have been engaged in both regulatory and commercial activities, giving rise to conflicts of interest. The prices that gas suppliers are allowed to charge on the domestic market are much lower than in many other countries, yet payment arrears continue to grow. The perception that supplying gas to the domestic market will prove unprofitable for an independent firm strongly discourages firms from entering the market. The main issues facing the gas sector can be divided into five categories: (i) regulatory institutions, (ii) regulatory uncertainty, (iii) incomplete regulations, (iv) pricing systems, and (v) payment systems. Security has also become an increasingly important issue in Nigeria's natural gas sector, but it is beyond the scope of the present analysis.

## Natural Gas Sector Regulation in Nigeria

**The institutional framework for regulating the natural gas sector is not well designed, unevenly implemented and suffers from weak incentives.** While the DoG was intended to regulate the midstream and downstream elements of the gas sector, its purview has been far narrower in practice. The DoG did not become operational until 2012, four years after the passage of the NDGPR. Its resources are inadequate to fulfill its mandate, and it has not played a meaningful regulatory role in the sector to date. Instead, the Department of Petroleum Resources (DPR) in the MPR remains in charge of the day-to-day regulation of the gas sector, while the Nigerian Gas Company (NGC), a subsidiary of NNPC, controls the pipelines through which most domestic gas is transported. The NGC also sells gas and plays a pseudo-regulatory role, such as by awarding franchises. The National Petroleum Investment Management Services (NAPIMS), a corporate service unit

in the NNPC's Exploration and Production Directorate, is "charged with the responsibility of managing Nigeria Government's investment in the upstream sector of the oil and gas industry"<sup>8</sup> and oversees upstream petroleum operations conducted via joint ventures, production-sharing contracts (PSCs) and service contracts. The Gas Aggregation Company of Nigeria (GACN) was established before the DoG became operational and is jointly owned by several major oil and gas companies. The GACN has not yet begun aggregation because the requisite conditions for gas aggregation have not been met to date.

**Because the NNPC and GACN represent commercial interests in the gas sector, the fact that they also play pseudo-regulatory roles creates a conflict of interest.** Before it was administratively restructured in August 2015, the NNPC's Gas and Power Directorate (GPD) had influenced the overall strategic orientation for Nigeria's natural gas sector. The involvement of the GPD in policy-setting intensified investor concerns that the institutional arrangements regulating the gas sector are not transparent and that certain operators exercise undue influence in the gas market.

**The process by which gas sector regulations are implemented represents a major source of uncertainty for investors.** Regulatory conditions are communicated to gas producers through informal channels, and their enforcement is unpredictable. For example, the price of gas sold to the power sector was supposed to rise to US\$2.50 per million British thermal units (mmBtu) in January 2015, yet gas producers are still not receiving this price, in part because the MPR has not yet provided the relevant

**Figure 3.3: Overview of regulatory and pseudo-regulatory agencies**



\*Recently restructured.

<sup>8</sup> See the NAPIMS official website: [www.napims.com](http://www.napims.com).

stakeholders with a formal written document defining the new price and start date. Tariff schedules and regulations for various categories of producers are rarely published, and in some cases they are not communicated to gas suppliers in writing. Contrary to the spirit of the NDGPR, pseudo-regulated sectors such as methanol and fertilizer production have received prices far below those received by producers supplying the power sector.

**Some regulations have been more aspirational than feasible.** The DGSOs require all licensed producers to supply a certain amount of gas to the domestic market. Although regulations require that they be issued every year, DGSOs have reportedly been issued only twice since 2008. Moreover, they are not disclosed to the public, and the basis for volume assignments is unclear. Aggregate targets for DGSOs have been set at very high levels. According to NNPC statistics about 1 bcf per day of gas was delivered to the domestic market during the first nine months of 2015, yet the volumes mandated by DGSOs reportedly total almost seven times the actual delivery. Gas flaring regulations have suffered from similar weaknesses, and the deadline for banning routine flaring has been repeatedly postponed.

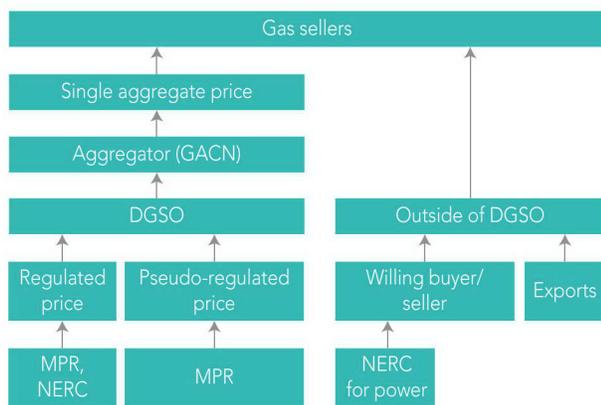
**Clarity is needed for some regulations and regulatory actions.** There is substantial disagreement over the official penalty for gas flaring—the government has stated that the penalty has been raised to US\$3.50 per thousand cubic feet (mcf), while industry representatives report that the official penalty is still 10 naira (US\$0.05) per mcf. License renewal is another source of uncertainty, and licenses have been known to lapse for several years before renewal is finally granted. The conditions for pipeline access are also unclear. The lack of well-defined, transparent and predictably enforced regulations in these and other areas seriously inhibits investment in the sector. Ending routine gas flaring is a priority, but accomplishing it will benefit the domestic market only if there is an effective policy for commercializing gas—otherwise, producers who reduce flaring may cut back on production elsewhere to maintain the same volume of supply to the domestic market.

**In some areas critical regulations are either missing or incomplete.** Because gas transportation is a natural

monopoly, pipeline tariffs must be regulated just like tariffs for electricity, water or other network-based systems, and regularly analyzed and revised as necessary. Clearly defined rules and regulations are required to facilitate non-discriminatory third-party access to gas pipelines. Nigerian PSCs have no provision for commercializing gas, despite the fact that 1.7 bcf/day of gas was produced in areas governed by PSCs during the first nine months of 2015. In principle, provisions for the commercialization of gas are included in supplementary agreements, but in practice no such agreements have been signed for more than two decades. The absence of key regulations in these and other areas implicitly grants broad discretionary powers to the MPR, NNPC and NGC, further discouraging private investment.

**Nigeria's natural gas pricing policies have consistently set prices too low to provide a sufficient return on investment.** The NDGPR established a floor price for natural gas supplied to the power sector at just US\$0.10/mmBtu, roughly one-thirtieth of the average world market price in the late 2000s. The NDGPR based this policy in part on the idea that “gas liquids,” a byproduct of natural gas production, generate a sufficient return on their own to largely finance gas projects. The decision in late 2014 to increase the regulated price paid by power producers from US\$1.50 to US\$2.50/mmBtu as of January 2015 was an important step, but 11 months later the power sector continues to pay only US\$1.50/mmBtu. The pseudo-regulated prices set for other gas consumers are even lower than those paid by the power sector, in some cases as little as half. Thus potential investors in the gas sector not only face substantial uncertainty about their obligations to supply the domestic market, but also have reason to expect that controlled prices for domestic sales may be too low to cover their costs. Against the backdrop of serious gas shortages, gas purchasers entitled to low government-controlled prices have increasingly turned to market-based arrangements, in which they pay more in return for supply security.

**The government's attempts to keep gas prices artificially low through regulatory intervention are slowing the growth and diversification of the Nigerian economy by discouraging energy efficiency, inflat-**

**Figure 3.4: Determinants of natural gas prices**

Note: NERC = Nigerian Electricity Regulatory Commission. The left column describes the gas supply chain under the DGSO. The regulated price for the power sector is subject to MPR and NERC approval, while the pseudo-regulated price is subject to MPR approval alone. Once gas aggregation starts, the GACN is to compute the average prices paid, determine the single aggregate price, and pay gas sellers accordingly. Outside of the DGSO, gas sellers are free to pursue market-based prices, but gas sold to power generation companies is still implicitly subject to NERC tariff approval.

**ing demand and aggravating supply shortages.** The thermal efficiency of “open-cycle” gas power generation is about 20 percentage points lower than “combined-cycle” generation. However, combined-cycle generation is also more expensive to install, and its use can be justified only if the savings from reducing gas consumption are sufficiently large to offset the higher capital investment required. In other words, the higher the price of gas, the greater the incentive to invest in more expensive but efficient generation technology. Running every gas-based power plant in Nigeria would require a total of about 1.7 bcf/day of gas at the thermal efficiency of open-cycle technology, while shifting to combined-cycle generation would require less than 1.1 bcf/day. The latter is broadly the amount of gas supplied to the domestic market in 2015.

**Artificially low gas prices are compounded by payment delays.** This issue is particularly acute in the power sector, which accounts for two-thirds of domestic gas consumption. The generally weak financial state of Nigeria’s power utilities prevents the use of enforceable gas sales contracts in the power sector. Given the clear

synergy between the natural gas and power sectors, the financial health of the latter has important implications for the former. Because the marginal cost of electricity generation falls with increasing scale, an inadequate and unreliable gas supply can create a vicious circle in which electricity plants producing below capacity become increasingly unable to cover the cost of their gas purchases. The possibility of non-payment is an obvious disincentive to investment in the gas sector, and the Government’s 2010 Roadmap for Power Sector Reform is intended to help ensure that electric utilities pay their gas suppliers on time and in full. However, its implementation is taking longer than planned, and a power-tariff policy reversal in March may even have increased debts to gas suppliers in 2015.

## The Way Forward

**Developing the natural gas sector and leveraging its potential to meet the growing energy demands of the Nigerian economy will require policymakers to address and resolve numerous weaknesses in the sector’s institutional and regulatory framework.** The

Government’s overarching goal should be to clearly signal its resolve to build a stable and transparent administrative environment that can reasonably ensure a fair, market-based return on investment. Given the deep and far-reaching nature of the necessary reforms, the Government could give serious consideration to establishing a task force comprising recognized experts with in-depth knowledge of the Nigerian gas sector to formulate an appropriately comprehensive strategy. The MPR in particular requires specialized expertise in gas sector policy, data collection and market analysis. The current administration has demonstrated a credible commitment to reforming the sector, and the NNPC recently identified 20 “fixes” (priority action areas), providing a historic opportunity to decisively reform the gas sector and unlock its economic potential.

**It may be more effective to treat oil and gas separately in the legislation governing the midstream and downstream components.** In the past, combining oil and natural gas legislation led to inadequate attention being devoted to the natural gas sector. Oil and gas should be addressed jointly in

the legislation governing the upstream elements of the sector, but it is not necessary to do so elsewhere. The concern about inadequate attention paid to the gas sector can be addressed by passing a separate bill regulating the midstream and downstream components of the gas sector. The drafting of the 2005 Downstream Gas Bill, which was not passed, has laid some analytical groundwork for future legislation.

**Establishing a separate regulatory agency for the midstream and downstream gas sector with commissioners appointed by an independent supervisory board could increase transparency and accountability.** This regulatory agency could be formed as a separate institution or conceived as an expanded role for NERC. As long as NERC is careful to avoid focusing narrowly on supplying gas for power generation, expanding its mandate to cover midstream and downstream regulation has several advantages. Expanding the scope of NERC would take much less time than setting up a new regulatory agency, and NERC already possesses an extensive knowledge of the power sector that could form the basis for setting appropriate price levels for natural gas supplied for electricity generation, which is the dominant domestic consumer of gas. In addition, the NGC should cease to perform its current quasi-regulatory role and be divided into a gas transmission company and a separate gas distribution company. Unbundling of the NGC is one of the 20 priority action areas identified by the NNPC.

**Official schedules and guidelines for tariffs, DGSOs, penalties for gas flaring, and other important parameters should be published in a clear and transparent manner.** The authorities will also need to allay investor concerns regarding the process and methodology by which future tariffs, penalties, and DGSOs will be determined. Gas transmission tariffs should be subject to economic regulation, and a financial model underpinning proposed tariff increases should be made available for review, as it is in the power sector. License-renewal processes should be streamlined, clarified and accompanied by a specific deadline for the government's response. Finally, building a reputation for implementing regulations consistently and impartially will be critical to

promote investor confidence. Comprehensive regulations governing the pipeline network would help to ensure non-discriminatory third-party access. Supplementary agreements to enable the commercialization of gas in PSCs are also a key priority. In the absence of formal agreements, production-sharing contractors are implicitly being asked to deliver gas free of charge to the NNPC. One way of not delaying this important measure would be to treat gas terms in PSCs separately from any revision of oil terms.

**Prices for domestic gas suppliers must be sufficient to cover costs and justify major commercial investments.** Gas-pricing reform should re-examine both the regulated and pseudo-regulated prices. There is no rationale for keeping gas prices for some industries as low as US\$1/mmBtu, nor should those industries be subsidized at the expense of gas producers or buyers in other industries. Costs of gas development vary substantially from one field to another, and the regulation of prices prevents the development of certain types of gas field.<sup>9</sup> Contrary to the assumption embedded in the current policy, the sale of gas liquids is not sufficient to meet the cost of most non-associated gas production, especially in a context of low global prices. Domestic gas prices are effectively capped at export-parity levels, which are much lower than in the past due to the abundant supply of liquefied natural gas on the global market. Prices in the power sector are implicitly limited by electricity tariffs, which are subject to NERC approval. Together, these factors present a compelling case for shifting to a more market-oriented pricing structure.

**Making fiscal terms robust to be able to cope with wide fluctuations in costs and prices is also important.** The return on investment is determined largely by costs, prices and fiscal terms. One option is to base fiscal terms on a measure of profitability, thereby automatically adjusting government take as a function of changes in project costs, prices and volume. This makes the

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<sup>9</sup> Lean gas, non-associated gas, and deepwater gas are generally more costly to develop and produce. The regulated price of US\$2.50/mmBtu is likely to be too low to make most non-associated gas commercially viable.

fiscal rules more predictable and transparent, because it substantially reduces the need to make adjustments to the rules when economic conditions change, such as a sharp drop or increase in world gas prices. Prospective revisions of fiscal terms and gas prices should be tested in a range of economic scenarios, and the resulting calculations and their underlying assumptions should be shared with key stakeholders to enable an open and informed debate.

**Special measures are needed to ensure that gas producers supplying the power sector are paid promptly and in full.** Nigeria's bulk power trader was established in part to address the large arrears owed by power producers and ensure timely payments to gas suppliers. However, thus far the bulk power trader has not been able to reduce these arrears, because many power producers cannot cover their costs. The full implementation of the Roadmap for Power Sector Reform, and especially its tariff-reform provisions, will be vital to improve the financial health of both the power and gas sectors.

**Finally, the government could reconsider costs and benefits of gas aggregation and aggregate pricing.**

After more than five years, gas aggregation has not yet started, while one of the policy's initial goals—to increase demand for gas on the domestic market—has already largely been achieved. Moreover, averaging consumer prices into a single aggregate price would present a further disincentive to investors, except those selling gas at low prices. To date, the GACN's primary role has been to carry out due diligence and match sellers and purchasers. However, payment risk has remained a serious problem, stalling gas sales agreements, preventing would-be sellers from moving on to other buyers, and leaving commercially viable gas stranded. Promoting a more decentralized contracting system under which gas suppliers could freely choose to service reliable consumers and cease supplying unreliable ones would strengthen payment discipline. Table 3.1 summarizes these and other recommendations for reforming Nigeria's natural gas sector.

**Table 3.1: Recommendations for gas sector reform**

Objective	Issue	Near term	Medium to long term
An adequate institutional and policy framework capable of supporting robust private investment	Failure of gas aggregation	Reconsider continuation of gas aggregation and terminate if deemed no longer suitable	Discontinue gas aggregation
	Absence of clear, predictable, and transparent pricing policy	Formally issue new gas prices with effective dates and post them on a government website	Shift to market-based sales agreements
		Provide financial justification for increases in pipeline transportation tariffs	Conduct regular tariff reviews
	Lack of transparency in DGSO assignment	Explain the basis for the 2014 DGSO assignments	Establish realistic medium- and long-term targets in consultation with stakeholders
	Include gas sold under market conditions in DGSOs		
		Decouple from gas aggregation	
	Absence of network code	Conduct consultations with key stakeholders	Adopt and implement network code
A strong legal, fiscal, and contractual framework	Uncertainty about future fiscal terms	Test fiscal terms against a range of prices and costs to ensure that the fiscal regime is robust to price and cost volatility	Adopt fiscal terms that ensure reasonable returns to investment
	Gas legislation subsumed in petroleum legislation dominated by oil focus	Begin consultations on a new bill dedicated to mid- and downstream gas	Adopt and implement an act for midstream and downstream gas

*(continued on next page)*

**Table 3.1: Recommendations for gas sector reform** *(continued)*

Objective	Issue	Near term	Medium to long term
A strong legal, fiscal, and contractual framework <i>(continued)</i>	Absence of supplementary agreements for PSCs	Issue supplementary agreements	Define fiscal terms for gas produced in blocks governed by PSCs
	Timely renewal of expiring licenses	Keep track of expiring licenses and undertake timely decisions	
Independent regulation of the gas sector	Pseudo-regulatory roles played by NNPC and NGC	NNPC and NGC to cease assuming pseudo-regulatory roles	NNPC and NGC to be confined to commercial operations only
	Overlapping responsibilities between DoG and DPR	Begin setting up an independent gas regulator	Establish and strengthen the regulator
An inter-institutional division of responsibilities that minimizes the potential for conflicts of interest	NGC acting as a gas marketer and transporter	Accelerate work on network code	Fundamental restructuring of NGC, including vertical unbundling
	Directions for gas sector frequently set by NNPC	NNPC to stop setting directions on behalf of MPR	MPR to set policy and directions
	GACN owned by major gas producers	See the above on recommendations on aggregation	
Reasonable assurance of an adequate rate of return on investment	Significant payment arrears for gas in the power sector	Enforce gas sales agreements	Electricity bulk trader to pay on time for all gas purchases
	Predictability, effective implementation, fiscal terms that enable reasonable returns for efficient operators, as covered above		

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