

THE ENERGY
REGULATION
AND MARKETS
REVIEW

ELEVENTH EDITION

Editor
David L Schwartz

THE LAWREVIEWS

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Editor
David L Schwartz

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PREFACE

In our 11th year of writing and publishing *The Energy Regulation and Markets Review*, the most pressing global concerns are inflation, supply chain concerns, the Ukraine war and continuing effects from the covid-19 pandemic. Accordingly, many of our contributing authors have emphasised concerns associated with the effects of these crises on infrastructure development, commodity purchases and energy demand. We have also seen industry and regional specific changes that have added uncertainties to global energy policies. For example, oil and gas prices have spiked sharply (offering a dramatic contrast to historically low prices just two years before). While pricing changes may be a boon for sellers and their exporting countries, that has created uncertainty for countries that are highly dependent upon oil and gas consumption and imports, particularly imports from Russia, which is now subject to certain embargoes following the initiation of trade sanctions earlier this year arising from Russia's invasion of Ukraine. Additionally, the United Kingdom continues to experience uncertainties resulting from its transition out of the European Union (a process known as Brexit), particularly regarding the future of its energy policies to reduce greenhouse gases and its coordination and cooperation with the European Union. The Biden administration has continued to reassure US allies and historical trading partners that it remains committed to the 2015 Paris Agreement, notwithstanding the Trump administration's previous withdrawal. And the memory of the 2011 Fukushima nuclear incident continues to affect energy policy in many countries. Finally, there are continued efforts to liberalise the energy sector globally.

I CLIMATE CHANGE DEVELOPMENTS

We continue to see significant carbon reduction efforts globally, including increased use of renewable resources and measures to improve energy efficiency and reduce demand.

In the United States, the Biden administration has continued to commit to the fight against climate change, despite the previous administration's support for fossil fuels. While coal and other aged fossil fuel plants continue to retire at an unprecedented rate (primarily because of the economics of those facilities), the Texas winter storm in February 2021 and recent dramatic increases in oil and gas prices have raised questions about whether renewable resources alone will be sufficient for long-term reliability. The US Federal Energy Regulatory Commission issued a report recommending reliability improvements to prevent rolling blackouts resulting from severe storms. Many states have continued to award procurements of thousands of megawatts of new offshore wind development projects on the east coast and, in May 2021, the US Bureau of Ocean Energy Management granted its first approval for the Vineyard Wind offshore project. The Federal Energy Regulatory Commission has continued

to struggle with whether and how to impose regulatory restrictions on the ability of states to subsidise renewable energy projects in light of their adverse impacts on competitive market prices.

Despite Brexit, the United Kingdom's renewable energy targets have continued to meet or exceed those of the European Union. France is seeking to double its wind and solar capacity and President Macron has announced a goal to close the remaining coal plants by 2022. France has recently updated its national policy priorities with respect to climate change to include low-carbon hydrogen resources as well as power plants equipped with pumped storage, and provided a new certification process for biogas. Italy had previously targeted a 28 per cent reliance on renewable energy by 2030 but is now working to reach the 32 per cent target adopted by the European Union, and has recently created a new Ministry of Ecological Transition to assist with the fight against climate change. To reduce reliance on Russian oil and gas, Belgium seeks to triple its offshore wind capacity to 5.8GW by 2030. Portugal is retiring coal generation and replacing it with renewable and hydrogen generation resources. Greece is decommissioning some of its old lignite plants and has begun implementation of a 'just transition' plan. Poland has been struggling to meet the EU renewable energy targets but has plans to develop significant offshore wind generation.

China continues to have ambitious renewable energy goals, aiming for an emissions peak by 2030, carbon neutrality by 2060 and a goal of 15 per cent of generation supplied by non-fossil fuel generation. There remains significant debate in Australia regarding the role of gas and coal in the energy landscape, which has led to a patchwork of national and state policies that point to continued uncertainty regarding Australia's commitment to carbon reduction. Malaysia continues its efforts to encourage greater entry into the renewable energy market and has goals to reach 31 per cent renewable generation by 2025 and 40 per cent by 2035, which reflects an increase in renewables of 15 per cent over previous targets.

The United Arab Emirates aims to reduce its carbon footprint by 70 per cent by relying on 50 per cent renewable energy by 2050, and recently launched an ambitious initiative to fund and supply clean electricity to almost 100 million people in Africa by 2035. In Brazil, hydroelectric resources constitute more than half of its installed generation capacity, and efforts continue to increase wind and solar generation as the cost of renewable generation has decreased.

II INFRASTRUCTURE DEVELOPMENT

The multiple crises so far this year (inflation, the war in Ukraine, supply chain issues and the continued covid-19 pandemic) have increased prices and slowed infrastructure development for many countries, particularly those in which a reliable energy supply remains the primary concern, regardless of fuel source. Even the United States is no exception, as controversy remains over the Dakota Access Pipeline, development and approvals for which have continued to stall, and the Biden administration revoked the Keystone XL Pipeline's presidential permit in January 2021, regardless of the recent dramatic increases in oil prices. The European Union has recognised the need to secure a diverse energy supply, particularly in view of Russia's invasion of Ukraine and the desire to reduce reliance on Russian oil and gas. Belgium is expected to increase investment not only in renewable generation but also in hydrogen and geothermal energy to combat reliance upon Russian oil and gas. Portugal is also seeking to expand the development of green hydrogen as an alternative fuel source, including development of the Sines project, which is intended to replace in part the capacity

lost following the retirement of coal generation. Furthermore, and unsurprisingly, Russia is expected to experience a significant downturn in foreign investment in its energy sector as a result of sanctions imposed by the United States, the European Union, the United Kingdom and many European states. Lebanon has developed a plan to reform its electricity sector to increase installed capacity so that electricity can be provided for up to 20 hours per day. Nigeria has only 12,000MW of installed generation capacity, which is insufficient to meet its needs, and is looking to the gas sector in the country to supply sufficient fuel to support additional generation resource development.

III NUCLEAR POWER GENERATION

Ten years after the Fukushima disaster, there is a struggle between efforts to limit reliance upon nuclear energy and the emissions reductions and fuel diversity benefits nuclear power offers. Because of the Ukraine war and the need for fuel diversity, and the importance of nuclear power for fighting climate change, Belgium has extended the economic lifetime of two nuclear power plants until 2035. France had previously sought to eliminate nuclear generation by 2025 but has extended that date. South Korea has continued its efforts to phase out nuclear power (replacing nuclear plants with new renewable facilities over time). However, the United Arab Emirates' new 5,600MW Barakah nuclear power station is almost complete and one of its units is already operational. When all units are online, Barakah will supply 25 per cent of the emirates' electrical needs. Poland still intends to explore the development of up to six new nuclear power units in the future, with a target date for the first unit in 2033. In the United States, although the early retirement of certain nuclear plants has been driven by cost and power market considerations (rather than safety concerns), some states have passed legislation to subsidise nuclear energy to allow owners to continue to operate through zero emissions credit programmes, including Illinois, New York, New Jersey and Ohio.

IV LIBERALISATION OF THE ENERGY SECTOR

We have seen significant energy sector regulatory reforms in many countries. The European Union has sought to continue efforts to centralise the regulation of the EU energy sector, albeit without the full participation of the United Kingdom. Belgium, Portugal, Greece and France (among others) have each taken significant steps towards further liberalisation of the energy sector. Australia has opened access to transmission through regulatory reforms to ensure timely transmission investment and encourage market entry, and continues to engage in significant changes in the regulation of the energy market. Brazil has recently implemented net metering regulations and is now implementing distributed generation regulations. China has reduced subsidies for renewable energy and has implemented a market-price mechanism for pricing coal-based generation. The United Kingdom has continued to implement a competitive tender process for the development of offshore transmission. In the United States, while states have continued to subsidise renewable generation (particularly significant new subsidies for offshore wind development in the Northeast), the Federal Energy Regulatory

Commission has continued to struggle between deference to states in making procurement decisions and protections against adverse impacts on competition by implementing minimum offer price rules to combat buyer-side mitigation markets.

I would like to thank all the authors for their thoughtful consideration of the myriad interesting, yet challenging, issues that they have identified in their chapters in this 11th edition of *The Energy Regulation and Markets Review*.

David L Schwartz

Latham & Watkins LLP

Washington, DC

May 2022

NIGERIA

Adegbite Adeniji, Jumoke Fajemirokun and Abdulganiyu Mustapha¹

I OVERVIEW

The Nigerian energy sector encompasses the petroleum sector, where fuels are produced for energy production and the electricity supply industry. Other energy supply sources include hydropower and other renewable energy sources. Several off-grid electric power projects have been developed in recent times and these are fuelled by either natural gas or solar energy.

The electricity industry is highly dependent on natural gas, which is the fuel of choice for over 80 per cent of the electricity supplied to the national grid. It is expected that natural gas will continue to be a significant fuel source in Nigeria's energy mix for many years to come, given its abundance compared with other fuel sources in the country. Nigeria's proven natural gas reserves stand at approximately 203 trillion cubic feet and, as articulated in the National Gas Policy, the government is committed to leveraging Nigeria's huge gas portfolio to drive industrial development.

Nigeria's approximately 12,000MW of installed electric power generating capacity is far below the energy demand in the country. As such, a significant proportion of consumers utilise alternative electricity supplies powered by petroleum products such as premium motor spirits and diesel. This chapter will focus mainly on the natural gas and electricity industries.

Market participants in the electricity industry comprise 18 successor companies that were unbundled from the state-owned vertically integrated utility pursuant to the Electric Power Sector Reform Act 2005 (EPSRA). These include six generating companies (gencos), 11 distribution companies (discos) – all of which have now been privatised – and one transmission company (which remains a state-owned entity), on-grid and off-grid independent power producers, distributors and mini grid operators.

The principal market participants in the gas industry are the gas producers comprising Nigerian independents and international oil companies that operate either on a sole risk basis or under contractual arrangements such as petroleum joint ventures and production-sharing contracts (PSCs) with the Nigerian National Petroleum Corporation (NNPC), the national oil company. Gas marketers, transporters and local gas distribution companies also play an important role in the industry. Prominent in this category is the Nigeria Gas Company (NGC), an NNPC subsidiary that owns and operates the main gas transmission pipelines in the country, and its marketing affiliate, the Nigerian Gas Marketing Company (NGMC).

¹ Adegbite Adeniji and Jumoke Fajemirokun are partners and Abdulganiyu Mustapha is an associate at ENR Advisory.

Most of the gas distribution companies operate under a franchise arrangement with the NGC. Among other market participants are the various downstream gas utilisation companies, which include power generation companies and independent power producers (IPPs).

The gas and electricity markets are regulated at the national level by separate regulators.

II REGULATION

i The regulators

The electricity industry is regulated by the Nigerian Electricity Regulatory Commission (NERC). NERC is an independent regulatory body established under EPSRA, which is the principal source of legislation for the electricity industry. NERC issues regulations and orders giving effect to EPSRA and is empowered to grant licences for the generation, transmission, system operation, distribution and trading of electricity, and to promote competition and private-sector participation in the electricity industry. The Nigerian Electricity Management Services Agency established under the Nigerian Electricity Management Services Agency Act 2015 conducts technical inspections, testing and certification of electrical installations, electricity meters and instruments to ensure compliance with technical standards and regulations.

The Energy Commission of Nigeria (ECN) established by the Energy Commission of Nigeria Act 1979 (as amended) is responsible for policy formulation and implementation and the strategic planning and coordination of national policies on energy. The Minister of Power is empowered under EPSRA to trigger the different phases outlined in EPSRA for the development of a competitive electricity market and to issue policy directives to NERC on matters concerning electricity. The EPSRA also establishes the Rural Electrification Agency to promote rural electrification programmes through public and private-sector participation.

The Petroleum Industry Act 2021 (PIA) is the principal source of law for the gas industry. The PIA vests the Minister of Petroleum Resources with responsibility for formulating and implementing policies for the petroleum sector and for supervising the government agencies established to implement petroleum sector policies. The Minister is also empowered to grant, renew, revoke and approve the assignment of interests in upstream petroleum concessions upon the recommendation of the Nigerian Upstream Regulatory Commission (NUPRC), the regulator empowered by the PIA to supervise the upstream segment of the petroleum industry and to issue regulations to govern operations in the industry, among other powers. The midstream and downstream segments are regulated by the Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA), which is the other regulatory agency established by the PIA.

Another regulator whose activities affect the gas industry is the Nigerian Content Development and Monitoring Board established pursuant to the Nigerian Oil and Gas Industry Content Development Act 2010, and whose primary function is to ensure the continuous growth of local content in all arrangements, projects, operations, activities and transactions in the oil and gas industry.

Environmental regulators of relevance for both the gas and the electricity industry are the Federal Ministry of Environment, which implements the framework for the conduct of environmental impact assessments of gas and electricity projects further to the Environmental Impact Assessment Act 1992; the National Environmental Standards and Regulations Enforcement Agency, established pursuant to the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007, and which is empowered

to enforce environmental laws, policies, standards and guidelines, as well as international treaties to which Nigeria is a signatory; and the National Council on Climate Change, established pursuant to the Climate Change Act 2021. The NUPRC and the NMDPRA also have powers to enforce environmental regulations and standards in connection with oil and gas operations.

ii Regulated activities

Upstream operations

Pursuant to the PIA, the exploration and production of crude oil and natural gas may only be conducted under an appropriate licence or lease issued by the Minister of Petroleum Resources. These include a petroleum exploration licence (PEL), which confers a non-exclusive right to carry out petroleum exploration operations within the licence area; a petroleum prospecting licence (PPL), which grants the holder an exclusive right to drill exploration and appraisal wells and to carry and dispose of petroleum extracted during such drilling, together with the rights conferred on holders of PELs; and a petroleum mining lease (PML), which grants the holder an exclusive right to carry out the development and production of petroleum within the lease area, together with the rights conferred on holders of PELs and PPLs.

The PIA also allows upstream operations to continue to be conducted under concessions granted pursuant to the Petroleum Act 1969, the erstwhile principal legislation for the petroleum industry (old concessions). Holders of these concessions may elect to convert to an appropriate licence or lease under the PIA within 18 months of the passage of the PIA or continue to hold these old concessions for the remainder of their tenure. There is a mandatory requirement to convert to an appropriate lease or licence under the PIA if these old concessions are to be renewed. There is also a mandatory requirement for all marginal fields currently in production to convert to PMLs within 18 months of the passage of the PIA; non-producing marginal fields are to convert to PPLs.

The PIA requires that PPLs and PMLs must be granted pursuant to competitive bidding rounds conducted by NUPRC (except those awarded pursuant to a conversion or a treaty). PPLs and PMLs awarded pursuant to a bid process shall be based on a model lease or licence developed by NUPRC for the particular bid round, which may incorporate contractual models such as a concession agreement, production-sharing contract, risk service contract, profit sharing contract or a variation of the foregoing. A concession agreement may include an incorporated or unincorporated joint venture with the NNPC.

Further to its powers for the regulation of the upstream segment, NUPRC may issue permits for various aspects of upstream operations such as drilling of wells, well completion tests, well workovers and re-entry and abandonment, as well as the construction and operation of upstream production facilities.

Midstream and downstream gas operations

An important aspect of the PIA is the separation of upstream operations from midstream and downstream activities, which are regulated by the NMDPRA. In this regard, the following activities may only be conducted under licence from the NMDPRA:

- a* establishing, constructing and operating natural gas processing facilities;
- b* establishing, constructing or operating natural gas storage facilities;
- c* establishing, constructing or operating gas transportation pipelines;
- d* establishing, constructing or operating terminals, jetties or other facilities for the export or importation of gas;

- e* engaging in bulk transportation of natural gas by rail, barge or other means of transportation;
- f* operating a gas transportation network;
- g* engaging in wholesale gas supply;
- h* engaging in the construction or operation of petrochemical or fertiliser plants;
- i* retail trading, distribution and supply of natural gas;
- j* establishing, constructing or operating a gas distribution network; and
- k* establishing, constructing or operating facilities for the supply or trading of natural gas.

The permitting process for the construction and operation of midstream and downstream facilities typically has three stages:

- a* issuance of a licence to establish following the NMDPRA's satisfactory review of the conceptual design for the project;
- b* issuance of an approval to construct following the NMDPRA's satisfactory review of the detailed design for the facility; and
- c* issuance of a licence to operate, following the mechanical completion of the facility and satisfactory pre-commissioning inspection by the NMDPRA.

Service provision in the petroleum industry

An oil and gas industry service permit issued by the NUPRC or NMDPRA, as applicable, is required to render services in the oil and gas industry such as works and maintenance services, equipment supply, fabrication works, drilling, dredging, pipeline laying, consulting services and logistics.

Electricity

An appropriate licence issued by NERC is required to construct, own and operate an undertaking or engage in the business of electricity generation (excluding captive generation), electricity transmission, system operation, electricity distribution or trading in electricity. Undertakings for generating electricity not exceeding 1MW in aggregate at a site or for distributing electricity with capacity not exceeding 100kW in aggregate are exempt from the licensing requirement. NERC permits are, however, required for captive generation exceeding 1MW and for the operation of mini grids that have a generation capacity of below 1MW and a distribution capacity of over 100kW.

Customers wishing to purchase electricity directly from a generation licensee or trading licensee (without contracting with a distribution licensee) must apply to NERC for eligibility status. NERC also issues permits to providers of metering services to discos. These services include meter financing, procurement, supply, installation, maintenance and replacement.

iii Ownership and market access restrictions

Licences and leases for activities in the petroleum and electricity industry may only be granted to companies incorporated in Nigeria and these companies may be 100 per cent foreign-owned. The PIA provides that where there is an agreement or treaty between Nigeria and another country, the government may for strategic purposes direct the NUPRC to negotiate and award a PPL or PML to a qualified investor identified in the agreement or treaty.

With respect to service provision, local content laws and regulations require regulated entities to give first consideration to qualified Nigerian companies in the award of contracts for the supply of goods, works and the provision of services. The Nigerian Oil and Gas

Industry Content Development Act 2010, which applies to the petroleum sector, defines a Nigerian company as one in which 51 per cent of the shares are held by Nigerians. The Regulations on National Content Development for the Power Sector of 2014 also make similar provisions for the electricity industry.

The EPSRA imposes restrictions on aggregate holdings by licensees in the electricity industry. An applicant for a licence who owns more than 10 per cent or such other percentage as NERC may specify (the approval threshold) of shares in another applicant or licensee must disclose that interest to NERC. NERC may then require the applicant to divest itself of the holdings within a specified period. Similar disclosure obligations apply to licensees who acquire shares above the approval threshold in a licence applicant or licensee. Licensees are also prohibited from acquiring or affiliating with the licence or undertaking of another licensee or person who is in the business of electricity generation, transmission, distribution, system operation and trading without securing consent from NERC.

iv Transfers of control and assignments

The consent of the Minister of Petroleum Resources must be obtained prior to the transfer of a PPL, PML, old concession or any right, power or interest therein. An application for consent is made through the NUPRC, to the Minister and is subject to payment of aprescribed fee, which, in respect of PPLs and PMLs, will be based on a percentage of the value of the transaction. The Minister must be satisfied that the proposed assignee is of good reputation and possesses sufficient technical knowledge, experience and financial resources and will comply with the Federal Competition and Consumer Protection Act. Mergers and acquisitions that result in a change of control of the holder of a PPL or PML will require the consent of the Minister. In addition, for assets held under a joint venture arrangement or production-sharing contract with the NNPC, the consent of the NNPC must also be obtained for any assignment of an interest in a licence or lease. Also, for incorporated joint ventures, shareholders in the company are entitled to a right of first refusal in the event of any sale of shares.

Similarly, for the electricity industry, prior consent from NERC is required for a licensee to assign or cede a licence or transfer an undertaking or any part of it by way of sale, mortgage, lease, exchange or otherwise to another, or acquire or affiliate with the licence or undertaking of another licensee.

Notification to, and the approval of, the Federal Competition and Consumer Protection Commission is required prior to the implementation any merger that involves entities with a combined turnover that exceeds 1 billion naira or a target entity whose turnover exceeds 500 million naira.

III TRANSMISSION/TRANSPORTATION AND DISTRIBUTION SERVICES

i Vertical integration and unbundling

Following the unbundling of the vertically integrated state power utility pursuant to the EPSRA, electricity transmission and distribution services are now disaggregated activities. The Transmission Company of Nigeria (TCN) owns and manages the national grid and is the only entity licensed to provide transmission services. Distribution services are provided by the discos and entities that hold independent electricity distribution licences.

In relation to the natural gas industry, the NGC owns and operates the major gas transmission pipelines and has maintained a practice of granting distribution franchises

to private parties under arrangements that require such parties to develop or maintain a distribution network on the NGC's behalf and sell gas sourced from the NGC to end users within the distribution zone.

ii Transmission, transportation and distribution access

Open access and retail access

The open access regime introduced by the PIA applies to gas transportation pipelines and gas transportation networks. The PIA mandates a holder of a gas transportation network operator licence or gas transportation pipeline licence to grant third-party access. Connection agreements will be negotiated by the parties, and the NMDPRA may mediate in disputes in respect of third-party access.

The Nigerian Gas Transportation Network Code,² which is preserved by the PIA, serves as the primary governance and contractual framework for access to the pipelines governed by the code. Only licensed shippers may book capacity at entry and exit points of the pipeline network and there is no restriction on retail access.

With respect to electricity transmission and distribution networks, distribution licensees are mandated to provide non-discriminatory open access to embedded generation licensees (i.e., operators of generating units that are directly connected to and evacuated through a distribution system) or any other licensee provided it has available capacity and in accordance with agreed terms. Also, the Eligible Customer Regulation 2017 (ECR) provides for mandatory access for 'eligible customers' or their suppliers to the transmission and distribution network for the purpose of delivery of electricity pursuant to a contract for use of the network entered into with the licensee of the network. Eligible customers are a special class of customers licensed to purchase electricity directly from generation and trading companies. These customers tend to be industrial and residential estates that buy the power for their own use. The ECR has introduced some level of retail competition into Nigeria's electricity industry.

Exclusivity

NERC may allow a licensed activity to be exclusive for all or part of the period of the licence for a specific purpose, for a geographical area or a combination of both. NERC has clarified that discos do not have exclusivity over the distribution area conferred with their licence and to this end, and in a bid to expand access to electricity, introduced the Independent Electricity Distribution Network (IEDN) Regulations 2012. The IEDN Regulations provide a framework for the development of independent distribution networks in areas that are unserved or underserved by a disco. It allows NERC to grant a licensee the exclusive right to construct, own, operate and maintain a distribution system in a designated geographical area within the area of operation of a disco.

The NMDPRA can only grant one gas transportation network operator licence to a single network operator within a geographically defined area. However, NMDPRA may at its discretion issue licences to other parties for the operation of isolated or dedicated gas

2 Issued by the now defunct Department of Petroleum Resources.

transportation pipelines and for connecting to the gas transportation network. Also, a gas transportation pipeline licence grants an exclusive right to own, construct, operate and maintain a gas transportation pipeline within a defined route.

iii Rates

The EPSRA requires NERC to establish tariff methodologies for distribution and transmission services, which allows a licensee operating efficiently to recover its full costs and a reasonable return, incentivises improvements in service provision, avoids undue discrimination between consumers and phases out or substantially reduces cross-subsidies. Pursuant to this, NERC has established the Multi-Year Tariff Order (MYTO), which provides a 15-year tariff path for generation, transmission and distribution of electricity in Nigeria. Minor reviews of MYTO are to be undertaken yearly to take into account changes in limited parameters such as inflation and foreign exchange rates and gas prices; while major reviews are to be undertaken every five years.

Tariffs charged for the use of licensed gas transportation facilities must be set in accordance with a tariff methodology adopted by the NMDPRA. These tariff methodologies must be non-discriminatory, cost-reflective and US dollar-denominated, and should permit a reasonable return on investment. Tariff methodologies should also avoid cross-subsidies and economic distortions, and should ensure efficiency of the business, continued improvement in quality of service and a competitive market for the sale and distribution of natural gas.

iv Security and technology restrictions

Technology transfer arrangements are regulated by the National Office for Technology Acquisition and Promotion (NOTAP) established in accordance with the NOTAP Act 1979 (as amended). The Act mandates NOTAP to register contracts or agreements for the transfer of technology into Nigeria in connection with various purposes such as use of trademarks, patented inventions, plans and diagrams, supply of detailed engineering, the supply of machinery and plant, technical assistance, etc. Registration with NOTAP is a condition for accessing foreign exchange from the foreign exchange market regulated by the Central Bank of Nigeria for payments due on such contracts.

IV ENERGY MARKETS

i Development of energy markets

The electricity industry is a regulated market, which in the past decade has seen the previously state-owned and operated monopoly unbundled and privatised. The EPSRA established an electricity trading company, the Nigerian Bulk Electricity Trading Plc (the Bulk Trader), an electricity-trading company, to purchase power from gencos and onsell to discos. It is essentially a monopsony aggregator of utility-scale power produced within the industry, albeit for an interim period until the electricity industry is fully competitive. Electricity purchased by the Bulk Trader is dispatched in accordance with an economic merit order system implemented by the TCN in its capacity as system operator.

Wholesale gas supply is undertaken either directly by gas producers or by gas marketing companies. Natural gas is also traded by a growing segment of virtual gas pipeline companies trading gas through compressed natural gas and mini-LNG delivery systems to underserved markets in Nigeria.

A domestic gas delivery obligation (DGDO) is imposed on gas producers pursuant to the PIA. The Gas Aggregation Company Nigeria Limited (GACN) acts as an intermediary between upstream producers and wholesale gas offtakers, pursuant to the annual DGDOs allocated by the NUPRC to ensure adequate domestic supply of gas to strategic sectors, such as the power, strategic industrial and other commercial sectors. A penalty of US\$3.50/MMBtu is payable by a gas producer that fails to meet its DGDO allocation. Also, the gas producer will not be entitled to supply gas to any new midstream gas export operation.

ii Energy market rules and regulation

The EPSRA provides for the establishment of market rules by the system operator that are designed to establish and govern an efficient, competitive, transparent and reliable market for the sale and purchase of wholesale electricity and ancillary services in Nigeria and for the licensing of market operators. The market rules for the operation of the electricity market that are currently in force govern the operations of the electricity market in the transitional and medium stages of the development of competitive markets. These rules provide the framework for an efficient and competitive market. They set out the responsibilities of each participant, the operation and pricing system of the balancing market, and are designed to ensure a transparent and efficient settlement system, among other objectives.

iii Contracts for sale of energy

Market participants involved in the sale and purchase of on-grid power must conduct their transactions through the Bulk Trader, which purchases power from the generation companies using standardised power purchase agreements. The Bulk Purchaser onells power to discos through vesting contracts whereby it allocates a portion of the aggregated electricity supply to a particular disco. The rates for energy sales in these contracts must comply with the MYTO methodology. New entrant independent power plants that require a tariff beyond the MYTO benchmark must apply to NERC for approval and an individual site-specific pricing model will be used, in which case NERC will apply prudence and relevance tests to determine whether the site-specific costs should be allowed in the rates.

Market participants involved in the sale and purchase of off-grid power may enter into bilateral contracts. With the exception of contracts between embedded generation companies and discos, which must also comply with the MYTO methodology, there are no regulatory requirements that govern the rates and contract terms for the sale and purchase of off-grid power.

For natural gas sales, an offtaker that has applied to and obtained a gas purchase order from the GACN is entitled to negotiate a gas purchase and sale agreement (GPSA) with a gas producer that has been issued a DGDO by NERC. The sale price of gas under the DGDO framework is currently subject to price controls and will be derived from a domestic base price established by the NMDRPA yearly. Price control will continue until the gas market transitions such that the entire domestic gas demand requirement is covered by contracts on a willing buyer–willing seller basis and the domestic market is largely covered by free-market-based contracts.

iv Market developments

The PIA, which became effective in August 2021, provides for several far-reaching changes to the legal, institutional and regulatory framework for the petroleum industry, including the establishment of two industry regulators. With respect to natural gas, it has created a distinct

regulatory framework for midstream and downstream gas operations by introducing a new licensing regime and a framework for the technical and commercial regulation of the gas sector.

V RENEWABLE ENERGY AND CONSERVATION

i Development of renewable energy

The government approved a national energy policy in 2003 that outlines the government's commitment to integrate renewable energy sources into the nation's energy mix. Consistent with this policy vision, the NNPC has established a Renewable Energy Division to exploit renewable energy sources and participate in global carbon emissions reductions initiatives. The government has also approved the National Renewable Energy and Energy Efficiency Policy 2015 (NREEEP). This document serves as a blueprint for the sustainable development, supply and utilisation of renewable energy resources for both on-grid and off-grid energy solutions. It focuses on hydropower, biomass, solar, geothermal, wave and tidal energy power plants and cogeneration plants for energy production as well as the improvement of energy efficiency as an additional source of energy. NERC also developed a feed-in tariff regime for renewable energy sourced from solar, wind, biomass and small hydro to stimulate investment and achieve a target of 2000MW of electricity developed from renewable energy by 2020. The government expects that renewable energy will contribute a 30 per cent share in the electricity mix by 2030. President Buhari also pledged at the COP26 Leaders' Summit that Nigeria would cut its emissions to net zero by 2060.

ii Energy efficiency and conservation

The NREEEP recognises energy efficiency and conservation as a key component of a sustainable energy policy. The key policies to drive the promotion of energy efficiency centres on improving consumer awareness and provision of incentives to encourage investment in and use of energy efficient technologies.

Pursuant to the NREEEP, the government has developed the National Energy Efficiency Action Plan (NEEAP) as a supporting strategy document to guide the implementation of the NREEEP. The NEEAP sets out targets for energy efficiency in buildings, industries, electricity distribution and energy efficiency labels and standards from 2015 to 2030, as well as specific policy measures to achieve the targets such as public awareness campaigns, mandatory labelling and certification, installation of efficient lighting in social housing projects and fiscal incentives to reduce prices of efficient lighting. It also proposes the adoption of fiscal instruments to reduce prices on efficient lighting products, an incentives scheme to support local manufacture of on-grid and off-grid equipment and financing schemes to cover the upfront costs of lighting products.

Action plans from the NEEAP that have been implemented to date include the adoption of a National Building Energy Efficiency Code in August 2017, which sets out the minimum requirements for energy-efficient buildings and provides for their proper implementation control and enforcement. The Code applies initially to public buildings of the Ministry responsible for implementing the Code and it is expected that it will subsequently be adopted by states and local governments. The Standards Organisation of Nigeria has also launched the Energy Guide Label to guide Nigerians on the amount of energy consumed by air conditioners, refrigerators and lamps.

iii Technological developments

There are no significant technological developments in the area of renewable energy and energy conservation.

VI THE YEAR IN REVIEW

i Key decisions, legislation, cases or policy changes

Enactment of the PIA and the Climate Change Act 2021, and establishment of a new national oil company

In August 2021, President Buhari assented to the PIA, after almost 20 years of failed attempts to enact the legislative reform. The PIA contains a number of reformatory provisions designed to modernise activities and the governance of the petroleum industry. Unlike the Petroleum Act 1969, the PIA makes elaborate provision for gas as an independent resource. A set of draft regulations to be issued pursuant to the PIA has been published for stakeholder consultation, covering gas pricing, royalties, conversion and renewal of old concessions, and host communities.

The Climate Change Act 2021 was also signed into law in November 2021. It empowers the Federal Ministry of Environment to set a carbon budget for Nigeria, establishes the National Council on Climate Change and the Climate Change Fund, provides a regulatory framework for achieving low greenhouse gas emissions and sustainable economic development, and sets a target for 2050–2070 for the attainment of net zero greenhouse gas emissions, among other measures. The Act applies to all public and private entities in Nigeria.

Changes and policy flip-flops in the deregulation of downstream petroleum prices

For several decades, Nigeria has been attempting to withdraw fuel subsidies and deregulate the price of petrol in a bid to attract investment into the petroleum-refining sector in Nigeria. Labour unions have over the years resisted the withdrawal of these subsidies in view of the adverse impact they are likely to have on transportation costs and commodity prices, which most affect underprivileged citizens.

In the latest episode of this long-drawn-out saga, the government, in apparent reliance on the PIA (which provides that wholesale and retail prices of petroleum products will be based on unrestricted free-market pricing of petroleum products), announced its plan to withdraw petroleum subsidies by February 2022. However, because of significant pushback from the labour unions, the government reversed the decision to remove subsidies and has now proposed an 18-month extension to the implementation schedule for the PIA provisions on free-market pricing.

ii Key mergers, takeovers, activity in the market, tenders or auctions

Marginal field bid rounds 2020

The 57 marginal fields earmarked under the 2020 marginal field bid rounds were awarded to 161 awardees. However, the awards have been revoked with respect to 33 awardees following their failure to pay the requisite signature bonus within the prescribed time. Successful awardees will be granted, and operate under, a PPL. The PIA now requires upstream licences to be subject to competitive bidding rounds, hence all upstream assets will be subject to the

same rules. The energy sector has seen an increase in the number of mergers and acquisitions, with several indigenous awardee companies setting up alliances and joint ventures to acquire and exploit their respective fields.

IOC divestments continue

As Nigeria forges ahead as a mature province, the trend in the past decade has been for all the international oil companies operating in Nigeria to sell off some of their petroleum assets to independents and indigenous oil companies. ExxonMobil recently announced the sale of its entire onshore assets portfolio to Seplat, an indigenous participant, and Shell is also in the process of divesting its onshore assets.

iii Trends in the sector

The decade of gas initiative

The government is promoting investments in gas projects to increase gas production and utilisation over the next decade. The ‘decade of gas’ initiative is being championed by the government to increase utilisation of gas in the domestic market, with the objective of displacing the current over-reliance on other petroleum products as the primary source of energy for transportation, household, commercial and industrial uses.

VII CONCLUSIONS AND OUTLOOK

Several issues have impacted the development of Nigeria’s energy market over the years, especially in the gas-to-power segment. Market illiquidity occasioned by lack of payment discipline, ineffective contracts and lack of cost recovery across the value chain has consistently impacted market participants’ revenues and restricted the flow of investment into much-needed sector infrastructure.

The recent interventions by the government, especially the transition towards truly cost-reflective tariffs, are expected to reduce the current market distortions and consequently attract more investment into the sector. It is also expected that the reforms brought by the PIA will enable the gas sector to better serve the electricity markets and set Nigeria on the path to sustained industrialisation.

ABOUT THE AUTHORS

ADEGBITE ADENIJI

ENR Advisory

Adegbite ('Gbite) Adeniji is the managing partner at ENR Advisory. He advises a variety of clients in the petroleum, electricity and mining sectors. His clients include international oil companies and Nigerian independent oil companies, whom he advises on market-leading commercial transactions, regulatory issues and on the development of projects. 'Gbite's experience spans many decades and has involved a number of significant roles, including senior technical adviser to the Minister of State for Petroleum Resources, counsel for the development of the Nigerian Gas Master Plan and senior consultant on oil and gas policy matters at the World Bank. In these roles 'Gbite has advised the Nigerian government on policy development, regulation and reform of the petroleum sector, including leading the preparation of the current National Gas Policy and the National Petroleum Policy 2017 and advising the National Assembly on the Petroleum Industry Bill 2020. Adegbite is also credited with the development of a programme for the elimination of gas flares in Nigeria – the Nigerian Gas Flare Commercialisation Programme (NGFCP), which is the first of its kind globally – and with helping to draft Nigeria's current Minerals and Mining Act.

JUMOKE FAJEMIROKUN

ENR Advisory

Jumoke Fajemirokun is a partner at ENR Advisory. She routinely advises clients on policy, regulatory, transactional and project development issues across the energy value chain. Her project development experience covers gas processing plants, petrochemical plants, LNG facilities, storage facilities, pipelines and power plants. She has advised on several acquisitions and divestitures within the energy and infrastructure sectors and has also advised government and developmental organisations on policy formulation and reforms aimed at enhancing governance and regulatory structures in these sectors and creating enabling environments for increased levels of private capital into these sectors.

She previously worked with the World Bank in Washington, DC, where she provided support to the World Bank Group Sanctions Board in its adjudication of integrity compliance issues in the procurement and execution of World Bank-financed projects. In 2019, she led a team convened by the Rural Electrification Agency to support the Nigerian Electricity Regulatory Commission in fast-tracking the licensing of mini-grid developers under the solar hybrid mini grids component of the Nigeria Electrification Programme.

ABDULGANIYU MUSTAPHA

ENR Advisory

Abdulganiyu Mustapha is an associate at ENR Advisory. He routinely negotiates and advises on various types of transactions for the acquisition and divestment of interests in oil and gas assets, as well as contracts for project development and operations. Abdulganiyu has written, and advises operators in the oil and gas industry, on diverse aspects of the newly enacted Petroleum Industry Act 2021 and regulatory and compliance considerations for energy companies in Nigeria.

ENR ADVISORY

3rd Floor, South Atlantic Petroleum Towers
1 Adeola Odeku Street
Victoria Island
Lagos
Nigeria
Tel: +234 1 7004630 5
adeniji@enradvisory.com
fajemirokun@enradvisory.com
mustapha@enradvisory.com
www.enradvisory.com

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