

# **ENS**africa | Africa Regulatory Round-up | Edition 2



# **POWERING CHANGE:**

Unbundling Eskom and deregulating the electricity generation sector in South Africa: Lessons from five other African countries

#### Introduction

In Africa, the electricity sector has historically been dominated by large vertically integrated utilities. These were built around the use of steam turbines which were far more efficient and scalable than reciprocating steam engines.

Alternating currents that can transmit power over vast distances is at the core of the development of vertically integrated electricity utilities. This allowed power plants to be built close to the energy source, be moved further away from commercial centres, and be easily scaled. However, building vast grids and electricity transmission and distribution networks was expensive. The capital investment that was required was massive and, in many instances, could only be afforded by the state. Since the availability of reliable and cheap electricity is essential to economic growth and development, it made political sense for the state to be directly involved. As a result, these utilities became natural monopolies.

However, in the 21<sup>st</sup> century, the fight against climate change, technological advances in electricity generation, particularly in renewable energy, the existence of established electricity networks across borders and competitive pricing are starting to erode the efficiency and effectiveness of the vertically integrated model. In terms of the modern model, all generators should compete for market on an equal basis regardless of the primary energy source. Subsidisation must make way for direct competition. The only remaining natural monopoly should be ownership of the network and systems operations.

Several countries in Africa have adopted a modern model and unbundled, or commenced with the unbundling of, their electricity utilities. They have allowed (and in many instances encouraged) the participation of independent power producers ("**IPPs**") in electricity generation by way of adjustments to the regulatory environment regarding private electricity generation and allowing the regulator to regulate the orderly conduct of the market and not the affairs of a single utility.

This second edition of the biannual Africa Regulatory Round-up explores the ways in which some governments have responded to the advent of this modern model. It explores the processes at play in South Africa with respect to the proposed unbundling of Eskom and how these have played out in five key African countries which have unbundled their electricity utilities and allowed competitive private generation. These include Zambia in Southern Africa; Ghana and Nigeria in West Africa; and Kenya and Uganda in East Africa.



## Unbundling South Africa's Eskom and deregulating electricity generation

#### Overview of Eskom and South Africa's electricity sector

Eskom Holdings SOC Limited is South Africa's vertically integrated main supplier of electrical energy. As the owner and operator of the national grid, it currently has a monopoly over the generation and transmission of electricity in the country, with only 8% of the electricity distributed by it being purchased from IPPs. Most power stations in the country are owned and operated by Eskom, whose sole shareholder is the South African Government.

#### **Regulatory framework and programmes**

South Africa's electricity planning is largely governed by three pieces of legislation:

- Electricity Regulation Act, 2006 ("ERA") and its regulations;
- National Energy Act, 2008 ("NEA"); and
- National Energy Regulator Act, 2004 ("NERA").

#### Rationale for unbundling Eskom and deregulating the electricity sector

The unbundling of Eskom and the deregulation of the South African electricity sector has become a practical necessity. The coal fleet is old, and Medupi and Kusile are likely to be the last coal-fired power plants that will be built in South Africa. Eskom, with its regulated price and massive debt, cannot become financially sustainable without government support. The unbundling of Eskom will allow for:

- improved management efficiency, price transparency and competition in power generation;
- greater protection against rent-seeking and corruption;
- the development of a competitive market for the buying and selling of electricity;
- the establishment of the National Transmission Company as the market and systems operator and the remaining "natural monopoly" that will manage the orderly operation of an electricity market and the safe operation and management of the electricity network;
- the creation of greater transparency for investors, thereby attracting increased investment in the sector;
- each entity generation, transmission and distribution to source funding on its own merits;
- the disaggregation of Eskom's revenue streams that will facilitate the structuring of tariffs so that energy, network and service charges reflect their respective costs, thereby reducing the costs of energy to the consumer; and
- municipalities to purchase directly from IPPs, buy excess solar energy from households, and construct their own electricity generation plants.



#### Structure of a regulated vs deregulated electricity utility

As illustrated below, a fundamental distinction exists between regulated and deregulated markets in the electricity sector, which govern production, transmission and distribution of electricity. If deregulated, Eskom's effective control over all stages of South Africa's energy sector will be unbundled into three entities: generation, transmission and distribution.



Regulated vs deregulated markets. Source: Business Day

#### Brief timeline of Eskom's proposed unbundling

#### 1990s:

• proposals made to deregulate and privatise Eskom, but these are eventually halted.

#### 1998:

• White Paper on the Energy Policy of the Republic of South Africa proposes the unbundling of Eskom.

#### 2000s:

• plans for unbundling and partial privatisation are shelved. Instead, IPPs would provide new capacity as demand increased.

#### February 2019:

• President Cyril Ramaphosa announces that government will immediately embark on a process of unbundling Eskom into three separate legal entities – generation, transmission and distribution – during his State of the Nation Address.



#### May 2021:

Select Committee on Public Enterprises and Communications meets with Eskom to get an update
on the unbundling process. Eskom indicates that it has completed the process of functional
separation of its business into three entities – generation, transmission and distribution – and
establishment of divisional boards and managing directors. Legal separation of transmission
is anticipated to be completed by December 2021, while legal separation of generation and
distribution is expected to be completed by December 2022.

#### July 2022:

• President Ramaphosa announces the Energy Action Plan which sets out five key interventions to address the energy crisis, including enabling and accelerating private investment in generation capacity.

#### January 2023:

- National Energy Crisis Committee releases a six-month progress update on implementation of the Energy Action Plan. Key achievements to date include:
  - lifting of the licensing threshold for private power generation projects, which was pegged at 100 MW;
  - a pipeline of private-sector generation projects has grown to over 100 projects, with total capacity of more than 9 000 MW;
  - Eskom's launch of a Standard Offer Programme to purchase up to 1 000 MW of power from companies that have existing generation capacity for a period of three years, and an Emergency Generation Programme to purchase additional power when the grid is constrained; and
  - completion of various actions to streamline authorisation processes for energy projects.

#### February 2023:

- In the State of the Nation Address, President Ramaphosa announces that he will appoint a Minister of Electricity in The Presidency to assume full responsibility for overseeing all aspects of the electricity crisis response.
- Declaration of National State of Disaster: Impact of Severe Electricity Supply Constraint is gazetted.

#### March 2023:

• Draft Electricity Regulation Amendment Bill is approved by Cabinet for submission to Parliament. The Bill seeks to provide for the application for, issuance, revocation and deregistration of licences; additional electricity, new generation capacity and electricity infrastructure; and an open market platform that will allow for competitive electricity trading.



#### April 2023:

- Termination of National State of Disaster: Impact of Severe Electricity Supply Constraint gazetted.
- Public Enterprises Minister Pravin Gordhan and President Ramaphosa confirm delays in unbundling Eskom, citing external dependencies for delays in unbundling transmission, such as "obtaining lenders' consent, acquiring electricity licences and designation of the transmission entity as a buyer." Eskom's Acting Group Chief Executive, Calib Cassim, announces that the legal unbundling will cost the electricity utility about ZAR500-million.

# Challenges faced by South Africa in its plans to unbundle Eskom and deregulate its electricity generation sector

The process of unbundling Eskom and deregulating electricity generation in South Africa has been accompanied by a series of challenges in the country's efforts to reform its energy sector. These challenges include:

- licensing delays;
- Eskom's debt burden, which is in excess of ZAR400-billion;
- resistance by trade unions and organisations who have argued that the unbundling is allowing the privatisation of Eskom and will cause job losses and higher electricity tariffs;
- opposition from the coal lobby, as domestic coal sales will be affected by enforced efficiency at the generation level; and
- decreased energy availability at generation level (and consequently higher stages of loadshedding), requiring management focus and attention with resources being diverted from reform.

#### Unbundling and deregulation: successes and failures

The original timelines set for unbundling Eskom were far too optimistic. Dismantling a 100-year-old utility takes time. However, the experiences of other African countries such as Zambia, Ghana, Nigeria, Kenya and Uganda offer useful insight into the processes which could be followed to overcome these challenges and facilitate successful unbundling and deregulation.

Zambia

#### **Overview of Zambia's electricity sector**

Zambia's electricity sector is dominated by the state-owned power company, the Zambia Electricity Supply Corporation ("**ZESCO**") Limited, which holds about 90% of the country's generation capacity. ZESCO is responsible for the generation, transmission, and distribution of electricity. It is also the only utility-scale offtaker of IPPs.

Other key players in electricity generation include Copperbelt Energy Corporation ("**CEC**"); North-Western Energy Corporation ("**NWEC**"); Lunsemfwa Hydro Power Company ("**LHPC**"); Maamba Collieries Limited; Itezhi Tezhi Power Corporation; and Ndola Energy Company Limited.

The Ministry of Energy oversees ZESCO and is in charge of developing policies and strategies for Zambia's energy development. The Energy Regulation Board ("**ERB**") regulates and oversees the energy sector, including the electricity generation sector.

Through the Public Private Partnership Act, 2009, public-private partnerships ("**PPPs**") and concessions are permitted, and the Office for the Promotion of Private Power Investment is responsible for promoting private sector investments in transmission and generation.

#### Rationale for unbundling electricity utility and deregulating electricity generation

The electricity sector faced several challenges, including high running costs, poor infrastructure, and a lack of investment. The government's finances were also constrained by its heavy subsidisation of energy tariffs. In the late 1990s and early 2000s, Zambia opted to unbundle and deregulate the sector to introduce private sector investment and competition, with the goal of increasing the industry's efficiency and reducing costs. By encouraging private sector investment in off-grid solutions, deregulation also aimed to expand access to electricity in rural areas, as well as lessen the strain on the public purse and reduce the nation's debt. Accordingly, ZESCO was unbundled into independent generation, transmission, and distribution companies before being partly privatised.

#### Deregulation of electricity generation approach

Zambia's privatisation approach involved a gradual process of unbundling and selling off various parts of the electricity sector to private investors, while maintaining some regulatory oversight to ensure fair competition and consumer protection.

The Electricity Act, passed in 1996 facilitated private sector participation and established the ERB as the sector watchdog. In 2003, deregulation began when the government sold a 51% stake in ZESCO's distribution and retail operations to CEC. This was followed by the sale of a 75% stake in ZESCO's generation assets to



IPPs. Power Purchase Agreements ("**PPAs**") between the IPPs and ZESCO, which acted as the national power purchaser, were required to be signed. These were designed to ensure that ZESCO could sell the energy to customers at a set price and that the IPPs received a guaranteed price for the electricity they produced.

#### Challenges faced and lessons learned

Zambia faced several challenges in the process of deregulating its electricity generation sector, including:

- poor state of the power sector, with low tariffs, inadequate infrastructure, and high levels of debt;
- some political opposition leaders and interest groups arguing that it would lead to increased electricity tariffs and job losses;
- lack of investor interest due to the high capital requirements and an uncertain regulatory environment;
- resistance from labour unions which feared job losses and a reduction in wages and benefits for workers; and
- regulatory challenges, including an uncertain regulatory environment at the time of deregulation, representing a significant risk for private investors.

Despite these challenges, Zambia successfully deregulated its electricity generation by following a phased approach. This approach addressed some stakeholder concerns and mitigated risks associated with the regulatory environment and the poor state of the power sector, by providing guarantees to investors.

#### ZAMBIA'S EXPERIENCE WITH IPPS EMPHASISED THE NEED TO:

- ensure proper risk allocation in contracts;
- balance local content requirements against competitiveness;
- establish robust regulatory and institutional frameworks;
- provide clear and consistent policies; and
- engage local communities.





Ghana

#### Overview of Ghana's electricity sector

Ghana's electricity utility structure is comprised of both state-owned and private companies in power generation, distribution and transmission. The sector is regulated by the Energy Commission, responsible for issuing licences for electricity generation, transmission, and distribution, as well as the Public Utilities Regulatory Commission, responsible for electricity pricing and tariffs. The Ministry of Energy is responsible for energy policy formulation, implementation, monitoring and evaluation, as well as supervision and coordination of the activities of energy sector agencies.

#### Structure of Ghana's electricity utility

POWER GENERATION	POWER DISTRIBUTION AND TRANSMISSION
<ul> <li>Volta River Authority ("VRA"):</li> <li>state-owned company;</li> <li>responsible for about 40% of Ghana's electricity generation; and</li> <li>operates the country's largest hydropower plant and several thermal power plants such as the Akosombo and Kpong hydropower stations and the Takoradi thermal power plant.</li> </ul>	<ul> <li>Electricity Company of Ghana ("ECG"):</li> <li>state-owned company; and</li> <li>responsible for the distribution of electricity to consumers in Ghana.</li> </ul>
<ul> <li>IPPs:</li> <li>private companies;</li> <li>generate electricity and sell it to the national grid; and</li> <li>together with small-scale hydro and solar power projects, account for about 55% of the country's electricity generation.</li> </ul>	<ul> <li>Northern Electricity Distribution Company ("NEDCo"):</li> <li>a wholly-owned subsidiary of VRA; and</li> <li>responsible for the distribution of electricity to consumers in the northern part of Ghana.</li> </ul>
<ul> <li>Bui Power Authority:</li> <li>state-owned company;</li> <li>responsible for about 5% of Ghana's electricity generation; and</li> <li>operates several hydropower plants and renewable energy projects.</li> </ul>	<ul> <li>Ghana Grid Company Limited:</li> <li>state-owned company;</li> <li>responsible for the transmission of electricity from generation plants to distribution companies; and</li> <li>operates and maintains the national transmission grid.</li> </ul>



#### Rationale for unbundling electricity utility and deregulating electricity generation

Before the late 1990s, VRA held a monopoly over Ghana's power sector, transmitting electricity nationwide. Its subsidiary, the Northern Electricity Department (now NEDCo) distributed electricity to the northern sector, while the Electricity Company of Ghana was responsible for electricity distribution in the southern sector.

To address inefficiencies and meet growing demand, the government began the process of unbundling the utilities sector in 1994 by separating the generation, transmission and distribution functions of the VRA.

#### Deregulation of electricity generation approach

Although Ghana has not completely privatised its electricity generation sector, the government has undertaken some reforms to encourage private sector participation in the sector and increase electricity generation efficiency. These reforms opened up the market for IPPs to participate in electricity generation by investing in and operating power plants. The reforms also implemented a competitive tender process for the award of PPAs to IPPs, assisting in reducing the cost of electricity generation. However, the government still has a controlling presence in the entire energy sector value chain.

In addition, a regulatory framework for the electricity generation sector was established to remove barriers and establish a level playing field for the involvement of IPPs. Relevant legislation includes:

- Renewable Energy Act, 2011 (Act 832);
- Energy Commission Act, 1997 (Act 541);
- Public Utilities Regulatory Commission Act, 1997 (Act 538);
- Electricity Regulations, 2008 (LI 1937); and
- Ghana Investment Promotion Centre Act, 2013 (Act 865).

#### **Challenges faced and lessons learned**

In 2020, the Energy Commission placed a moratorium on the signing of new PPAs for renewable and conventional/thermal power plants for two reasons.

First, of the 124 provisional wholesale electricity supply licences for utility scale grid-connected renewable energy projects issued under the Renewable Energy Act, 2011, only three were developed.

Second, while the ECG signed numerous PPAs in excess of 2 000 MW, high tariffs, overly generous terms, and a lack of transparency in the negotiation process posed a number of problems.



However, on 5 April 2023, the Energy Commission lifted the moratorium on new wholesale electricity supply licences for embedded generation in the renewable energy sector. This was done to develop the renewable energy market and help Ghana reach its Paris Agreement climate objectives.

To address issues in the financial stability of Ghana's energy sector the government approved the Energy Sector Recovery Program ("**ESRP**") in 2019. This is a comprehensive five-year recovery programme which identifies the policies and actions needed for financial recovery in the energy sector.

While not all renegotiations have been successful, Ghana was able to renegotiate and restructure PPAs with six operational IPPs. The Ministry of Finance announced in 2020 that Ghana spends more than USD500-million a year on power that it does not use or need. In March 2023, the Ghanaian Government reportedly made another attempt to renegotiate supply agreements between the ECG and IPPs in an effort to replace take-or-pay agreements that have left the state liable for unutilised generation capacity while accruing significant debts.

Although the utilities sector's unbundling allowed for greater competition and private sector participation, high tariffs remain a challenge requiring attention.

#### GHANA'S EXPERIENCE WITH IPPS EMPHASISED THE NEED TO:

- ensure adequate planning and preparation;
- conduct rigorous contract negotiation and monitoring;
- carefully consider implications of long-term PPAs;
- diversify power sources; and
- ensure transparency and accountability in IPP contracts and operations.





#### Nigeria

#### **Overview of Nigeria's electricity sector**

Nigeria's electricity utility sector is dominated by state-owned and government-regulated entities. Key players in the sector include:

- Nigerian Electricity Regulatory Commission ("**NERC**"), responsible for the technical and economic regulation of the electricity industry, setting tariffs, establishing consumer rights and issuing licences;
- Transmission Company of Nigeria ("**TCN**"), state-owned and responsible for the transmission of electricity from generation companies to distribution companies, manages the grid, and ensures the reliability and stability of the power system;
- 11 Distribution Companies ("**DisCos**"), privately-owned and responsible for distributing electricity to homes and businesses;
- Nigerian Bulk Electricity Trading Company (**NBET**), 100% state-owned company responsible for the management and administration of the electricity pool in the Nigerian electricity supply industry;
- Nigerian National Petroleum Corporation ("**NNPC**"), state-owned oil company responsible for the exploration, production, and marketing of oil and gas in the country;
- Nigerian Gas Company (**NGC**), the gas distribution subsidiary of the NNPC, responsible for the transportation and distribution of natural gas in Nigeria; and
- other private companies involved in renewable energy and the generation of electricity.

#### Rationale for unbundling electricity utility and deregulating electricity generation

The Nigerian Government's rationale for unbundling its utilities sector and deregulating the electricity generation sector includes:

- attracting private sector investment and improving efficiency and service delivery;
- reducing government subsidies by shifting the responsibility for pricing and revenue generation to private sector companies;
- enhancing transparency and accountability by creating separate companies for different aspects of the electricity industry;
- creating a more competitive market by shifting from a market dominated by a few large state-owned companies; and
- increasing access to electricity by encouraging private sector investment in the development of new power plants and the expansion of the grid.



#### Deregulation of electricity generation approach

The reform of the electricity sector began in 2001, with the promulgation of the National Electric Power Policy ("**NEPP**"), which aimed to establish an efficient electricity market in Nigeria and to transfer ownership and management of electricity infrastructure and assets to the private sector.

In 2005, the Electric Power Sector Reform ("**EPSR**") Act was signed into law to allow private firms to generate, transmit, and distribute electricity in the country. The EPSR Act also established the Nigerian Electricity Regulatory Commission ("**NERC**") as the regulator of the sector in 2005. The same year, the Power Holding Company of Nigeria ("**PHCN**"), formerly the National Electric Power Authority, was unbundled and was established as a transitional corporation. The PHCN ceased to exist on 30 September 2013.

Nigeria applied the following phased approach to deregulate its electricity generation sector:

- 1. **Phase 1 Unbundling:** The first step was to unbundle the vertically integrated state-owned power company, the PHCN, into separate generation, transmission, and distribution companies in 2005. This was done to increase market competition and facilitate the sale of the separate assets.
- 2. Phase 2 Sale of generation companies: Six generation companies ("GenCos") were created following the government's unbundling of the PHCN. The GenCos are currently in different stages of being sold to private companies.
- **3.** Phase 3 Sale of distribution companies: 11 DisCos were created following the government's unbundling of the PHCN. The government has sold a majority of its shares in the 11 DisCos to private operators.

#### Challenges faced and lessons learned

Nigeria faced several challenges in the process of unbundling its electricity sector, including inadequate and outdated electricity infrastructure; excessive politicisation of the deregulation process; political interference in the bidding process; and lack of funding to support the unbundling process.

#### NIGERIA'S EXPERIENCE WITH DEREGULATION OF ELECTRICITY GENERATION OFFERS SEVERAL LESSONS, Including the need to:

- design clear and comprehensive regulatory frameworks;
- ensure effective implementation and enforcement of regulatory frameworks;
- address infrastructure challenges;
- engage with relevant stakeholders, including the government, the private sector, civil society and consumers; and
- design a long-term perspective that considers the complex and interrelated factors that affect the sector.



Kenya

#### Overview of Kenya's electricity sector

The electricity sector in Kenya is regulated by the Energy and Petroleum Regulatory Authority, which succeeds the Energy Regulatory Commission and is overseen by the Ministry of Energy and Petroleum ("**MOEP**"). The other energy sector entities that are overseen by MOEP include:

ENTITY	MANDATE / RESPONSIBILITY
Kenya Power and Lighting Company (" <b>KPLC</b> ")	Plan for sufficient electricity generation and transmission capacity to meet demand; build and maintain the power distribution and transmission network; and retail electricity to its customers.
Kenya Electricity Generating Company (" <b>KenGen</b> ")	Generate electricity through the development, management, and operation of power plants.
Geothermal Development Company ("GDC")	Develop steam fields and sell geothermal steam for electricity generation to KenGen and private investors.
Kenya Electricity Transmission Company ( <b>KETRACO</b> )	Plan, design, construct, own, operate and maintain the nation's high voltage electricity transmission grid and regional power interconnectors.
National Oil Corporation of Kenya ( <b>NOCK</b> )	Undertake all aspects of the petroleum supply chain covering the upstream oil and gas exploration, midstream petroleum infrastructure development and downstream marketing of petroleum products.
Kenya Pipeline Company ( <b>KPC</b> )	Transport, store and deliver petroleum products to customers through its pipeline system and oil depot network.
Rural Electrification and Renewable Energy Corporation (" <b>REREC</b> ")	Oversee the implementation of the rural electrification programme and development of renewable energy resources.
Kenya Petroleum Refinery Limited ( <b>KPRL</b> )	Provision of fuel loading facilities and product handling, hospitality and laboratory services.
Energy and Petroleum Tribunal	Hear and determine disputes and appeals relating to the energy sector.



#### Rationale for unbundling electricity utility and deregulating electricity generation

The Kenyan Government's rationale for unbundling its electricity utility and deregulating electricity generation was to:

- ease pressure on public funds;
- mitigate an imminent energy crisis;
- attract private investment in the energy sector;
- promote competition; and
- improve efficiency.

By creating a more favourable regulatory environment for private sector investment the government aimed to encourage the development of renewable energy sources, such as geothermal and wind power.

#### Deregulation of electricity generation approach

The reform of Kenya's electricity sector occurred in two phases. The first phase, starting in the mid-1990s and being largely donor-driven, involved:

- the separation of policy and regulatory roles from commercial activities;
- separation of the generation function from the transmission and distribution functions, which remained with KPLC;
- introduction of cost-reflective tariffs; and
- the dismantlement of the state-owned electricity utility and establishment of the Electricity Board of Kenya, which came into operation in 1997.

Through the Electric Power Act, 1997, the vertically integrated electricity supply company was divided into two entities. This saw the entry of the first IPPs in Kenya's electricity market, with KPLC as the sole offtaker and distributor.

The second phase of reforms started in the early 2000s and were spearheaded by domestic reform proponents. In 2004, Sessional Paper No. 4 on Energy laid out the government's policy for cost-effective, affordable and adequate quality energy services in Kenya. This paper set the foundation for key developments such as the enactment of the Energy Act, 2006; the establishment of a single independent energy regulator; the establishment of GDC and REREC; privatisation of KenGen; unbundling of KPLC into two entities, one for transmission and the other for distribution; and promoting privately or community-owned vertically integrated entities either operating renewable energy power plants or hybrid systems, to coexist with licensed electricity distributors.

#### Challenges faced and lessons learned

Kenya encountered various challenges during the deregulation process. KPLC has previously experienced significant financial losses occasioned by limited infrastructure development and dilapidation of existing infrastructure, and alleged mismanagement.



The deregulation of the generation function has largely been blamed for the extremely high prices of electricity, particularly with respect to stand-by or emergency thermal power plants with take-or-pay-based PPAs. In recent years, Kenya has implemented several reforms, as indicated in the timeline below, to improve the efficiency and affordability of electricity tariffs.



# THERE ARE SEVERAL LESSONS WHICH KENYA'S UNBUNDLING AND DEREGULATION PROCESSES OFFER, INCLUDING THE IMPORTANCE OF:

- ensuring adequate planning and preparation;
- designing clear and comprehensive regulatory frameworks;
- ensuring transparency and accountability in the deregulation process; and
- engaging with relevant stakeholders, including the government, the private sector, communities and consumers.

Uganda

#### Overview of Uganda's electricity sector

The Uganda Electricity Generation Company Limited ("**UEGCL**") is responsible for electricity generation, which are provided by state-owned power plants, IPPs and PPPs. The Uganda Electricity Transmission Company Limited ("**UETCL**") oversees electricity transmission, which is entirely state-owned, and the Uganda Electricity Distribution Company limited ("**UEDCL**") is responsible for electricity distribution, which is generated by both the state- and privately-owned companies.

Uganda's electricity sector is regulated by the Electricity Regulatory Authority ("**ERA**"), which is responsible for issuing licences, and developing and enforcing performance standards for the generation, transmission and distribution of electricity.

#### Rationale for unbundling electricity utility and deregulating electricity generation

Prior to unbundling, the Uganda Electricity Board (**"UEB**") was responsible for generation, transmission and distribution of electricity in Uganda. This large portfolio created chronic power shortages, high operating expenses, and insufficient investment in new capacity. The government hoped that by unbundling the UEB and deregulating the sector, it would draw private investment and expertise, resulting in increased investment in new capacity and improved operational efficiency. The government anticipated that deregulation would relieve the burden on the UEB, that was heavily indebted and operating at a loss.

#### Deregulation of electricity generation approach

Uganda's electricity sector was liberalised in 1997, with policy changes leading to the unbundling of the UEB. The Electricity Act (Cap. 145) established three separate successor companies – the UEGCL, UETCL and UEDCL – responsible for electricity generation, transmission and distribution, respectively.

Uganda adopted the following phased approach to deregulate the electricity generation sector:

- Establishment of the UEGCL;
- Creation of a regulatory framework and establishment of ERA to regulate the sector;
- Invitation of private sector companies to invest in the sector, resulting in the establishment of several IPPs which were granted licences to generate electricity;
- Sale of the government's majority stake in the UEGCL to a strategic investor;
- Sale of the government's remaining assets in the sector, including the Nalubaale and Kiira hydroelectric power plants; and
- Encouragement of mergers and acquisitions among the IPPs to create larger and more efficient power generation companies.



#### **Challenges faced and lessons learned**

The unbundling of the electricity sector has had some benefits such as an increase in the number of urban and rural households with direct access to electricity and licensing of smaller hydropower plants to increase electricity generation. However, Uganda has also faced challenges in its unbundling and deregulation processes. These include:

- an inadequate and inefficient power supply system due to sluggish growth in generation capacity and poor infrastructure for power transmission and distribution;
- slow rural electrification where private sector involvement fell short of initial expectations;
- high electricity tariffs and challenges with tariff management; and
- alleged political interference and the politicisation of the electricity sector.

Interestingly in 2018, a reversal of the unbundling of the electricity utility was considered. Uganda's Cabinet approved recommendations and an implementation plan for the "rationalization of Agencies, Commissions and Authorities". Reference was made to the proposal to merge the UEGCL, UEDCL, UETCL and Rural Electrification Agency, under the Ministry of Energy and Mineral Development ("**MEMD**").

However, stakeholders in the electricity sector opposed this proposal and the Electricity (Amendment) Act, 2022 provided that the successor companies would continue in existence. It also provided for a transfer of majority shareholding and general oversight powers from the Ministry of Finance Planning and Economic Development to the MEMD.

#### KEY LESSONS CAN BE LEARNED FROM UGANDA'S POWER SECTOR REFORMS SUCH AS THE NEED TO:

- design clear and comprehensive regulatory frameworks;
- ensure transparency and accountability in the deregulation process;
- design a long-term perspective that considers the complex and interrelated factors that affect the sector; and
- address infrastructure challenges.



# Lessons learned, conclusion and recommendations

Based on the experiences of other African countries, the following are notable lessons which South Africa could draw from while undergoing its unbundling of Eskom:

Cost reduction:	<b>Reduce the cost of production:</b> The Ghanaian Government announced that it would use part of the proceeds of its 2020 Eurobond sale to refinance loans taken by IPPs through the Ghana Infrastructure Investment Fund (" <b>GIIF</b> "). The completion of these take-outs will reduce the cost of production of IPPs and, consequently, tariffs as it is expected that GIIF will refinance the loans at lower interest rates.
Regulatory frameworks:	<b>Clear and comprehensive institutional and regulatory frameworks</b> : In Zambia's energy sector, weak institutional and regulatory frameworks have been linked to problems like slow project approval and ineffective regulation enforcement. One of the major challenges for the deregulation of electricity generation in Nigeria has been the lack of a clear and comprehensive regulatory framework.
	<b>Effective implementation and enforcement:</b> The effectiveness of an existing regulatory framework relies on its implementation and enforcement. The Nigerian Government has faced difficulties with enforcing its regulatory framework, resulting in issues such as the private sector's non-compliance with performance standards.
Contracts:	<b>Ensure proper risk allocation in contracts:</b> The difficulties Zambia faced with IPPs were in part attributable to contracts that were poorly constructed and inadequately allocated risks. Consequently, some IPPs experienced challenges with securing financing, resulting in project delays and cancellations.
Infrastructure:	<b>Address infrastructure challenges:</b> Successful deregulation has been hindered by the poor state of Nigeria's electricity generation infrastructure. Due to concerns about the regulatory environment and market uncertainty, private sector investors have been hesitant to invest in infrastructure improvements.
	<b>Provide adequate infrastructure:</b> The inadequacy of Uganda's electricity generation infrastructure, for example, made it difficult for private investors to produce and distribute electricity effectively. This lack of infrastructure also made attracting investors difficult because they could not be certain of the reliability of the power supply.
Stakeholder relations:	<b>Balance local content requirements against competitiveness:</b> It is important to strike a balance between local content requirements and the demands of competitiveness and capital access. In Zambia's case, its emphasis on ocal content requirements in its energy sector may have limited the competitiveness of IPPs and reduced the number of potential investors.
Long-term outlook:	<b>Careful consideration of implications of long-term PPAs:</b> Long-term PPAs that fixed high tariffs were attributed to some of Ghana's challenges with IPPs, despite a decline in the cost of production. It is therefore crucial to weigh the benefits of long-term PPAs against the risks and ambiguities associated with shifting energy market conditions.

#### Long-term outlook

**Diversify power sources:** It is crucial to diversify energy sources to guarantee energy security and stability. Due to Ghana's heavy dependence on IPPs, especially thermal power, the country was at risk of supply disruptions and fluctuating fuel prices. The country plans to use natural gas to fuel new thermal power sector projects. As natural gas is cheaper than liquefied petroleum gas, diesel and light crude oil, there should be a reduction in the cost of production. In Uganda, there is a need for improved planning for modern energy supply, outside the urban and semi-urban areas.

**Equitable and transparent allocation of collected revenue:** Ghana's introduction of the Cash Waterfall Mechanism ("**CWM**") is one of the measures stemming from the ESRP. The introduction of the CWM will ensure that ECG's collected revenue is allocated to the stakeholders in the electricity value chain in an equitable and transparent manner. ECG has also begun a combative nationwide revenue mobilisation exercise to retrieve some GHS5.7-billion debt owed by its customers to settle its indebtedness to IPPs.

The demise of vertically integrated utilities and the adoption of the 21<sup>st</sup> century model is inevitable. Each country, as demonstrated above, will have its own processes and objectives driven by its unique circumstances. The golden thread seems to be that unbundling, with or without privatisation as an outcome, and deregulation, is where countries are heading. In respect of South Africa, dismantling a 100-year-old utility takes time, and the above lessons can be instrumental in developing more feasible timelines.

We suspect that deregulated electricity markets will become the norm across Africa, but this will require early focus on something that is often neglected – grid and network planning. In-country deregulation and market establishment is one thing, but the true benefits is the ability to trade electricity across borders – it opens up supply and demand, but it needs strong, reliable and well maintained regional grids. Regional power pools are an important platform, but still relies on sovereign networks to trade energy and these are of variable strength and capacity. The alleviation of blockages on regional networks is fundamental to regional and continental electricity trade and is something that should continue to be considered and pursued at the level of the African Union.



For an overview of the regulatory environment of each African jurisdiction, view our doing business guides <u>here</u>.

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#### Sources:

- Subject matter experts in the ENSafrica offices and partner firms in the countries under review.
- <u>African Development Bank</u>
- <u>African Union</u>
- Development Bank of Southern Africa
- ESI Africa
- IHS Markit (now part of S&P Global)
- International Trade Administration, U.S. Department of Commerce, Country Commercial Guides
- United Nations Industrial Development Organization
- World Bank Group
- Websites of the local online newspapers, Parliaments and energy ministries, departments, companies and state-owned utility companies in each country under review.

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