Summary Regulatory Review of the Electricity Market in South Africa:

Towards Crowding-in Private Sector Investment
Summary Regulatory Review of the Electricity Market in South Africa

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This analysis is based on policies, laws and regulations adopted until June 2021. Therefore, the results will not consider and/or reflect the impact of policy and regulatory changes adopted thereafter.

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Analysis of Electricity Market Policy and Regulatory Framework

This report provides an analysis of South Africa’s electricity sector policies, laws, and regulations in relation to crowding-in private sector participation in developing national electricity infrastructure. The report is part of the United Nations Economic Commission for Africa and RES4Africa Foundation joint program on *Regulatory Review of the Electricity Sector in Africa: Towards Crowding-in Private Sector Investment*.

The electricity supply industry of South Africa is the largest in Sub-Saharan Africa, accounting for over 40 percent of the total installed capacity in the region. The country has been able to expand electricity access to about 94 percent of its population. The efforts to integrate the private sector in the electricity generation market, notably to support the development of a renewables industry, is proving to be successful. As of now, sixty-four renewable energy independent power producers (IPPs) are present in the market.

These good results have been achieved without a major transformation of the country’s electricity market structure. Indeed, the vertically integrated public utility, Eskom, remains the dominant player in South Africa electricity supply industry. Eskom generates a commanding share of the national electricity supply, owns and operates the entire transmission system, and 40 percent of electricity distribution to end-users, with the rest served by municipalities. South Africa has successfully attracted private capital to support the expansion of its generation capacity, yet little progress has been made in terms of market liberalisation and restructuring. Eskom stands as the single buyer at the wholesale level and it’s the nominated off-taker for public procured IPPs.

Since 2019, however, South Africa is facing an endemic electricity crisis, exposing it to the risk of blackouts. This has led to implementation of a vast national load-shedding program. As a consequence, a deep reduction in the national economic output is experienced, which brought the country into recession. This has underscored the importance of having a reliable and competitive electricity industry to fuel economic growth and social development.

The recent electricity crisis has highlighted the risks emanating from the high reliance of the South African electricity supply industry on Eskom. The South African government has reignited efforts for electricity market reforms, with a clear purpose of increasing private sector participation across the electricity value chain.

In line with this general objective, the purpose of this regulatory review is to pinpoint the main strengths and gaps of the policy and regulatory framework currently in force related to private sector participation in the entire electricity market. It further aims to offer concrete recommendations for regulatory improvement and reform towards attaining a competitive, resilient, and sustainable electricity market.

The regulatory analysis is undertaken following a comprehensive UNECA and RES4Africa regulatory review methodology, which was developed with the participation of African and international regulatory experts. The approach enables three broader assessments: the degree of openness of the electricity market to the private sector based on evaluation of the power sector structure and governance; the attractiveness of the market based on an assessment of sector economics, fair competition, and overall economic regulation; and the readiness of the market based on an assessment of technical regulations.
Main findings related to the Generation segment

Policy and regulatory frameworks governing the electricity generation market are effective in crowding-in private sector investments. Investors benefit from efficient and transparent market governance, a comprehensive energy strategy and planning for new generation capacities, and an open environment for private sector participation. The well-established public tender programs awarding bankable PPAs to winning bidders confirm the attractiveness of the generation market, while the availability of credit enhancement instruments augments the financial sustainability of business models. Well-defined network planning and technical regulation for grid access and connection, system operation, and authorization requirements ensure the effective integration of new generation assets into the national power system. However, the competition in the electricity market remains limited, due to the vertically integrated structure of the incumbent, Eskom. To increase the attractiveness of the electricity generation market, South Africa will benefit from reviewing the provision of direct and indirect incentives to private generators.

Figure 1: Overview of the generation segment
Main findings related to the Transmission segment

Private sector participation in the transmission segment remains restricted. Eskom is the sole licensed entity to function as a system operator and transmission asset manager for the national electricity supply industry. The South African Grid Code (SAGC) foresees the possibility of independent transmission service providers to obtain licenses for the provision of specific requirements, such as cross-border trade facilitations. However, it limits their role in the ownership and maintenance of transmission assets. Private players can, otherwise, participate in the construction of new transmission assets as EPC contractors. These limitations are combined with a lack of adequate regulation for the definition of the wheeling tariff for network users as well as the lack of credit enhancement mechanisms to support investments in new transmission infrastructure. Notwithstanding, the SAGC sets technical and operational standards of performance for the transmission service, provides the legal framework for open access to the transmission network, and defines connection rules for generators and bulk suppliers.

Figure 2: Overview of the transmission segment
Main findings related to the Distribution segment

In the distribution segment of the market, the lack of a coordinated and single electrification policy in conjunction with the scattered governance for the expansion of the reticulation of the electricity distribution, currently managed by Eskom and the Municipalities, impede the effective governance of the national electrification initiatives. Private sector participation in the distribution segment remains restricted since Eskom and the municipalities are the only licensed distributors. Similar to the transmission system, the review has highlighted some gaps arising from the lack of standardized contract regulation to define the rights and obligations of electricity distributors. However, South Africa’s distribution grid code defines operation rules, metering services, safety, and technical requirements and ensures non-discriminatory grid access.

Figure 3: Overview of the distribution segment
Main findings related to the Off-grid segment

South Africa lacks dedicated legislation for the off-grid market. The national electrification policy is fragmented into several policy guidelines and the current system planning documents do not sufficiently consider the potential for off-grid solutions development. Private sector participation in the off-grid market is not restricted; however, is hampered by the lack of dedicated regulation, notably for mini-grids, and therefore pausing the challenge of regulatory clarity. The lack of dedicated regulation for electricity supply contracts for off-grid operators and tariff rules for off-grid services reduce the potential attractiveness of the South Africa off-grid market. Furthermore, the lack of technical standards for mini-grid integration with the main-grid and the definition of commercial options available for mini-grid operators and asset owners in case of main-grid arrival represents a high risk for potential private investors.

Figure 4: Overview of the off-grid segment
Recommendations

To enhance the Openness of the electricity market

**Energy strategy**
Update South Africa’s strategic energy policy white papers, issued in 1998 and 2003, to reflect the drastic shift in the energy landscape over the past two decades and guide future transformations of the electricity sector.

**System planning**
Through the implementation of some of the outlined programs in the IRP-2019, adopt sub-sector policies, plans, and relevant regulations, as in the adoption of a Gas User Master Plan to provide regulatory certainty for the development of the gas-to-power program. Furthermore, define an integrated electrification master plan, including for a better consideration of the off-grid market for electricity service expansion.

**Power sector governance**
Review the potential and benefits of opening new segments of the electricity supply industry to private sector participation, from commercialization and retail to distribution and transmission asset development, and adopt key regulations relevant to implement such policy decisions.

Pursue reform in the distribution market, particularly considering:
- The current governance structure and the challenges it poses to a coordinated approach to electrification expansion; and
- Clarity related to regulation for expanding the ability of distributors to procure energy directly from embedded generators, or invest in their generation infrastructure.

Implement the creation of an appeal mechanism to solve disputes among market operators to improve the governance of South Africa’s electricity market.

**Power sector framework**
Implement the reforms outlined in the Roadmap for Eskom document, starting with the unbundling and the creation of a national transmission company, to enhance the efficiency of the electricity industry, improve its governance and encourage private sector participation.

**Generation off-taking options**
Tap into business models, such as the corporate PPAs market and the self-generation/consumption models, to develop decentralized solutions for industrial and commercial players. The development of these markets requires regulatory improvements such as:
- Simplifying the market entry for embedded generators by reviewing the current limitations set by the IRP and easing the applications procedures for the authorizations and permits required;
- Improving the wheeling regulation, particularly regarding the connection and use of system agreements;
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- Defining rules to allow the selling of the electricity surplus to the grid from private generators with a bilateral contract with a customer, and implementing a national regulation regarding net-metering options for self-generators.
- Facilitating for large bulk consumers, including distributors, the possibility to freely procure their electricity from traders, retailers, and generators, as well as investing in their own generation facilities.

To enhance the Attractiveness of the electricity market

1. Continue to pursue cost-reflectiveness of tariffs in the long term by the unbundling of the tariff system in view of the creation of an independent transmission company.
2. Develop dedicated regulation for the definition of mini-grid tariffs to support the development of the off-grid market, and adopt a standard tariff calculation tool for mini-grids.

To enhance the Readiness of the electricity market

1. Define and communicate a clear medium-term schedule for the new REIPPPP’s tender windows.
2. Improve access to credit enhancement instruments, incentives and possibly government and/or multilateral guarantees for distribution and off-grid investors.
3. Ease the procedures to obtain permits and authorizations through the implementation of a one-stop-shop for permits and authorizations request and issuance.
4. Develop and implement mandatory and optional grid-compatible standards for mini-grids to ensure the safety, stability, and reliability of the power system without imposing unnecessary burdens and costs on potential developers.
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-develop dedicated regulation for mini-grid system integration, including clear rules on commercial options for mini-grid business continuity and exit options in the case of main grid arrival, to realize South Africa's mini-grid market potential.

As South Africa takes further bold steps towards its energy sector regulatory reform, the UN Economic Commission for Africa and the RES4Africa Foundation remain committed to partner with South Africa in addressing any of the identified regulatory and policy gaps. They also commit to supporting regulatory capacity development, as well as any area of particular reform interest of South Africa towards greater openness, attractiveness, and readiness of the electricity market.