Driving Growth: Effective Renewable Energy Tendering in Africa

Success Factors for Private Power Investment and Procurement

Executive Summary



SRMI Sustainable Renewables Risk Mitigation Initiative





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Prepared by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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Power Futures Lab

The Power Futures Lab (PFL) is a leading centre of excellence and expertise for Africa and other emerging and developing economies. Based at the University of Cape Town's Graduate School of Business since 2001, PFL works to create enhanced knowledge and capability in key network infrastructures in Africa that promote economic development and improve social welfare within the bounds of environmental sustainability. powerfutureslab.co.za

Sustainable Renewables Risk Mitigation Initiative (SRMI)

Launched in 2018, the Sustainable Renewables Risk Mitigation Initiative (SRMI) is a multilateral partnership which aims to help Emerging Markets and Developing Countries (EMDCs) develop their renewable energy sectors by attracting private investments and enabling socioeconomic benefits through targeted infrastructure. Partners include the ESMAP at the World Bank, Agence Française de Développement (AFD), the International Renewable Energy Agency (IRENA), the International Solar Alliance (ISA), Sustainable Energy for All (SEforALL) (joining in 2021) and the African Development Bank (AfDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), and GET.transform joining in 2023. esmap.org/srmi

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Lastly, we thank every energy sector player who will explore, adapt and ultimately apply these findings to engender further progress on Africa's path to a prosperous energy future.

Foreword

Energy plays a vital role in realising Africa's prosperous future as described in Agenda 2063, the plan from the African Union to achieve inclusive and sustainable socio-economic development in the next 50 years.

Ensuring universal and sustainable energy access will be an important lever for further priority goals concerning economic growth and job creation, education, health and climate-resilience. Despite decreasing technology cost and abundant natural renewable resources, however, Africa's clean energy potential remains largely untapped.

Successful power sector transformations cannot be delivered through public finance alone. A greater involvement of the private sector is required to unlock new levels of finance and enable the development of more renewable energy projects at small and large scale. Mobilising private sector investment, however, is dependent on bankable and robust regulation that provides investment security while promoting viable business models.

With this report, critical knowledge is shared on a powerful regulatory mechanism: renewable energy auctions. They have proven a particularly potent tool in procuring Independent Power Producers (IPPs), which are renewable energy projects that are constructed and managed by the private sector. IPPs have emerged as a principal avenue for investment in Africa's electricity sector today. If designed effectively, auctions cannot only help to accelerate the rollout of IPPs but also foster competition and improve project implementation rates.

The report delves into the design and execution of renewable energy auctions, examining the intricate interplay between national policies, programme design, and project-specific variables that are crucial for the successful deployment of private power projects.

We are excited to announce that the generated insights on best practices and success factors are not only shared through this report but have actively informed the design of a new support window under GET.transform's Policy Catalyst. Together with the Sustainable Risk Mitigation Initiative (SRMI) of the World Bank's ESMAP programme and in partnership with the lead authors of this report, the Power Futures Lab, GET.transform has developed a comprehensive window to enhance IPP procurement capabilities in Sub-Saharan Africa. The "Effective Renewable Energy Tendering" window addresses officials from finance and energy ministries, public utilities and regulators to help them position their jurisdiction at the leading edge of renewable energy investment and innovation.

Convinced that efficient renewable energy auction schemes have a role to play in shaping the continent's future energy landscape, we are certain that they provide African nations with powerful means to simultaneously address energy security, sustainable growth and climate change mitigation.

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Executive Summary

Access to reliable, affordable, and clean energy is a linchpin for Africa's economic growth, improved living standards, and sustainable development aspirations. Yet, despite the continent's rich energy potential, a stark reality persists: energy poverty remains a pervasive challenge. Millions of Africans continue to live without access to electricity, hindering their ability to meet basic needs, pursue education, engage in productive work, and access critical healthcare services. The financing requirements of the power sector surpass the limited resources of many countries' public finances, which were historically the primary means of investment in power generation. Today, Independent Power Projects (IPPs), financed, built, owned, and operated by the private sector, have become one of the main sources of investment in Africa's electricity sector. In the same vein, the continent's renewable energy sector has recently witnessed substantial growth, driven by the expanding role of these privately-funded projects, declining technology costs, environmental imperatives, favourable policies and market incentives, and a growing rural and urban demand.

The procurement mechanism employed in contracting IPPs have proven to be a key contributing factor in determining their successful realisation. Amongst these methods, auctions have emerged as a powerful tool for accelerating the deployment of renewable energy projects, fostering competition and enhancing project realisation rates. With African countries looking to address the double challenge of energy security and climate change, the design and implementation of effective renewable energy auction programmes have become a critical aspect of shaping the energy landscape for the future. To this end, this report analyses the design and implementation of renewable energy interaction between country-level policies, programme design and project-specific factors for successful private power project deployment.

Analytical Framework

The report's analytical framework combines insights from IPP success factors and studies on auction design and implementation to offer a comprehensive understanding of the factors influencing auction outcomes.

IPP Success Factors

The factors contributing to the success of IPPs in Africa can be categorised into country, programme, and projectlevels.

Country-level factors

- Stability of economic and legal context: Ensuring economic stability, enforceable contracts, and fair arbitration.
- Energy policy framework: Establishing a clear legal framework for private sector involvement.
- Reform-minded leadership: Appointing individuals committed to long-term energy sector development.
- **Regulatory transparency:** Implementing transparent licencing and tariff structures.
- Coherent sectoral planning: Clearly defining planning roles and fairly allocating development opportunities.
- **Competitive bidding practices:** Linking planning to timely initiation of competitive tenders that are adequately resourced, fair, and transparent.

Programme-level factors

- **Programme design:** Restricting participation to capable companies, ensuring bankable contracts, and balancing competition and investment risks.
- **Programme implementation:** Garnering political support, having a capable procuring entity, effective government co-ordination, and a transparent procurement process.

Project-level factors

- **Favourable equity partners:** Encouraging local capital contributions, experienced and risk-tolerant partners, and potential involvement of development finance institutions.
- **Favourable debt arrangements:** Competitive financing, mitigating foreign-exchange risk, and matching risk premiums to country/project risk.
- **Creditworthy off-taker:** Ensuring managerial capacity, efficient operations, low technical losses, and sound customer service.
- Secure and adequate revenue stream: Establishing robust Power Purchase Agreements (PPA) and security arrangements when necessary.
- **Credit enhancements and risk management:** Employing sovereign guarantees, political risk insurance, partial risk guarantees, letters of credit, international arbitration, and other measures to mitigate risk.
- **Positive technical performance:** Maintaining efficient technical performance and anticipating and mitigating potential conflicts.
- **Strategic management and relationship-building:** Building a positive image in the country through political relationships, development funds, effective communications, and contract management during exogenous shocks and other stresses.

Auction Design & Implementation

To deepen understanding of the programme-level factors for IPP success in the context of auctions, the analytical framework investigates key programme design decisions and implementation considerations.

Auction design

- **Project-Site Selection:** Deciding whether the government or project developers select the project-site, impacting upon resource availability, environmental and social impact, as well as grid stability and transmission costs.
- **Auction Demand:** Determining how much is procured, dividing it among technologies, bidders, regions, projects, and time periods.
- Qualification and Compliance Requirements: Ensuring projects adhere to international standards, site-readiness, environmental, social performance, and local economic development criteria.
- Winner Selection Process: Defining bidding procedures and criteria for selecting auction winners.
- Seller and Buyer Liabilities: Addressing bid bonds, contract schedules, remuneration profiles, penalties for underperformance, and transmission delay liabilities.
- **Bankability and Risk Mitigation:** Offering standardised, non-negotiable contracts, credit enhancements, and payment security measures for attracting international financing.

Auction implementation

- **Enabling Environment:** Ensuring high-level political support, capable auctioneers, and supportive policy and planning frameworks.
- **Resource Allocation:** Allocating adequate resources for the auction process, potentially offset by cost savings from low prices.
- **Grid Planning Co-ordination:** Aligning the auction programme with the demands of the grid and system operator.
- Fairness, Transparency, and Trust: Maintaining a commitment to fairness, transparency, and trust during the implementation process.

Case-Study Countries

Five case-study countries – South Africa, Mauritius, Botswana, Ethiopia, and Morocco – have been strategically selected for in-depth analysis using the analytical framework. Their selection aims to provide a better understanding of the successes and challenges associated with designing and implementing renewable energy auctions within diverse contexts. Each country was chosen for specific reasons that collectively provide a well-rounded perspective on the spectrum of experiences in the African renewable energy development and auction programmes.

- South Africa: South Africa's inclusion stems from its status as an initial regional and global trailblazer in renewable energy auctions. It serves as a prime example of how policy certainty, co-ordinated investment strategies, comprehensive planning, and a capable procurer can attract substantial renewable energy investments. Additionally, South Africa's later setbacks provide critical lessons on the repercussions of deviating from the contributing elements for IPP success.
- **Mauritius:** Mauritius was selected as a case-study due to its remarkable success within a smaller power system. It demonstrates the effectiveness of clear policy objectives, transparent auction procedures, and a reliable power purchaser in achieving renewable energy goals, showcasing a model for smaller economies.
- **Botswana:** Botswana's inclusion underlines the need for integrated approaches encompassing power planning, procurement, and investment frameworks. Despite abundant mineral resources, a stable political environment, and a favourable investment climate, Botswana's sole auction success hinged on the implementation of a dedicated, well-resourced procurement programme.
- **Ethiopia:** Ethiopia's presence in the study highlights the significance of clear leadership along with political will. Beyond expressing a commitment to renewable energy, Ethiopia's experiences emphasise the importance of well-mandated and co-ordinated leadership to translate ambitions into concrete investments.
- **Morocco:** Morocco's inclusion offers insights into how North African countries, with unique socio-political and economic realities, can successfully expand their renewable energy capacities through the implementation of competitive auctions. The lessons from Morocco also highlight the crucial roles played by political backing, power sector reforms, and support from the international community in achieving these objectives.

Key Findings

Drawing on research and empirical evidence from case-study countries and global best practice, the report provides valuable insights and findings for governments and policy-makers, as well as industry stakeholders and investors seeking to achieve sustainable and effective auction outcomes.

- **Government Commitment and Consistency:** Successful renewable energy auctions are often underpinned by strong government commitment and consistency in policy implementation. African nations, which provide clear and consistent regulatory frameworks, tend to attract more significant investments in renewable energy projects.
- **Private Sector Trust:** Building trust between governments and the private sector is essential to foster a conducive environment for private sector participation. Successful collaboration requires open communication, transparency, and a consistent and trustworthy regulatory framework.
- Fostering Planning-Procurement Alignment: Promoting a strong connection between energy planning and procurement ensures that tenders align with market dynamics and system needs and provide long-term market certainty.
- **Site Assessment:** The site assessment and selection processes are fundamental to the success of renewable energy auctions. Ignoring or underestimating their importance can impact upon project viability, leading to project delays, financial challenges, and potential project abandonment.
- **Grid Integration:** Grid infrastructure and integration play a pivotal role in the success of renewable energy auctions. African countries should prioritise grid expansion and modernisation to accommodate the growing share of renewable energy sources, ensuring efficient and reliable power distribution.
- Procurer Capacity: A credible and capable procurement agency plays a crucial role in overcoming implementation

challenges, thus contributing to successful auctions. This entity should effectively possess the necessary resources, expertise, and independence to effectively co-ordinate and administer the auctions.

- Flexible Auction Design: Effective auction design should be flexible and adaptable to evolving market conditions and project readiness. Continuous learning and stakeholder engagement enable auction programmes to refine their design and evaluation criteria for optimal outcomes.
- Effective Co-ordination: Effective co-ordination amongst decision-makers and institutions involved with implementing the auction is vital for programme success. Lack of co-ordination can result in significant delays or even stall the procurement process.
- Role of Development Partners: Development partners play a critical role in supporting the success of renewable energy auction programmes. Their assistance in key areas, such as policy strengthening, institutional capacity-building, and stakeholder engagement, can be instrumental in reducing financing cost and enhancing project's attractiveness to investors.
- **Government Support and Guarantees:** Investor concerns arise due to insufficient government support and the absence of sufficient credit enhancements, as well as other risk management and mitigation measures. Countries can still attract IPPs without such support or measures, but they must have some fundamentals in place, such as a stable political and macro-economic environment, and a credible and trustworthy off-taker. Unfortunately, most African countries lack these features.
- Socio-economic Benefits: Beyond clean and competitive energy supply, renewable energy auctions have the potential to deliver significant socio-economic benefits. Auctions can empower communities, stimulate job creation, and promote local economic development through targeted requirements in the tendering process. However, these measures, if adopted must be transparently implemented and continuously monitored to achieve their intended objectives of fostering inclusive economic development.

Recommendations

Based on a wealth of experiences and lessons learned, the report offers a set of targeted and actionable recommendations for stakeholders, including African governments and policy-makers. Key recommendations include:

- Strengthening Policy and Regulatory Frameworks: Governments should establish clear and stable policy and regulatory environments, along with IPP legislation, which defines the roles of private and public sectors and clarifies procurement procedures for the private sector. In addition, given the importance of public utilities as ultimate off-takers, continued support to ensure independent, capacitated regulators in setting cost-reflective tariffs should be a key priority.
- Strengthen the Planning and Procurement Nexus: Countries should provide regularly updated power sector expansion plans which project demand, select cost-effective technologies, and allocate new-build opportunities to private or state-owned entities. These plans should be translated into international competitive bidding rounds on a timely and regular basis, without requiring political approval to be effective.
- **Continuous Learning and Stakeholder Engagement:** Auctioneers should continuously assess and adjust their evaluation criteria based on market conditions, auction volumes, and the level of pipeline project readiness in the country. This approach would lead to more balanced and sustainable future auction outcomes.
- **Building Institutional Capacity:** Governments should invest in building the capacity of the implementing agency responsible for auction design and implementation. These agencies should have sufficient resources, expertise and independence to effectively co-ordinate and administer the auctions.
- Pay the 'School Fees': Designing and implementing a successful auction programme can be costly and timeconsuming. Governments, and their development partners, should understand this before embarking on a programme, and should invest the necessary time and resources to ensure successful outcomes.
- **Build and Maintain the Market's Trust:** The procurement programme should be designed with transparent and clear rules, timelines and evaluation criteria. The implementing unit's roles and responsibilities should also be consistent so as to enhance private sector confidence in the procurement process.
- Prioritising Lender Requirements: Lenders' bankability requirements should be prioritised, as they are most

often the ultimate arbiters of project success. It is essential that they are involved early-on in the auction design process to review relevant contracts and documents, and scrutinise their viability against credit requirements.

To summarise, renewable energy auctions have shown promise in addressing Africa's power shortages, with success stories in various countries, such as South Africa, Morocco, Zambia, and Senegal. However, achieving success in these programmes requires substantial investment at the country, programme, and project-levels. This report aims to contribute to a better understanding of renewable energy auctions, and to promote the development of effective and sustainable IPPs across the continent. By learning from both IPP success factors and auction design best practices, African countries can make informed decisions on how to address their electricity access challenges, and accelerate the transition to renewable energy sources. Nevertheless, it is crucial to consider country contexts in applying these approaches, as there is no universally applicable formula that guarantees success. Each African nation presents its distinct challenges, opportunities, and socio-political dynamics, necessitating customised strategies that are founded on a deep understanding of the specific context.



Countries in Africa using renewable energy auctions Source: (PFL, 2023)



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