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**Over 120 independent power producers have been selected as preferred bidders for bid windows 7 & 8, but with limited grid capacity, where does this leave the bidders?**

**Boosting private sector investment into grid-connected renewable energy generation in South Africa.**

## Executive Summary

Minister of Electricity, Kgosientsho Ramokgopa, recently briefed South Africa on the progress of the Energy Action Plan and the challenges associated with its implementation. Minister Ramokgopa further remarked on the positive socio-economic impact that the Renewable Energy Independent Power Procurement Programme (REIPPPP) has had on the industry and economy. Over R300 billion has been attracted for infrastructure investment and over 120 independent power producers have been selected as preferred bidders. These success factors indicate great potential for an optimal energy mix, led by renewable energy sources, to be attained. They also highlight opportunities for more private-sector investment. For this potential to be fully maximised, programme design, programme management and market dynamics will be critical to factor in. This report assesses the abovementioned overarching categories and illustrates mechanisms that will be integral to facilitating increased private sector investment into grid-connected renewable energy generation. This will yield efficient management of REIPPPP and further enable improved economic growth and sustainable development.

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## REIPPPP: Establishment, success factors and challenges

South Africa's power system has been on the decline for over two decades and this has crippled economic growth and industrial development significantly.<sup>1</sup> Eskom, South Africa's state-owned electricity utility, has been under severe public and private scrutiny since 2008, as this period marked the height of Eskom's dysfunction and subsequently became the centre of a national governance debate due to rolling blackouts across the country to alleviate pressure on the national transmission grid. Ultimately, electricity demand has by far outstripped generation capacity, which is currently operating between 60% and 65% of full capacity. It has, at times, dropped to below 50%. The decline in the electricity availability factor (EAF), despite a sclerotic economy, has been particularly concerning. Multiple factors including governance, technical and financial mismanagement<sup>2</sup> explain the power system failures. These highlight the need for private sector players to intervene and assist in power generation to feed the national grid.

Initially released in 2010 and most recently updated in 2019, the Integrated Resource Plan (IRP) 2010-2030 sets a pathway to have new renewable power generation capacities of 3,725 megawatts (MW) and 3,200 respectively, procured to feed into the national transmission grid. Additionally, the IRP is a living plan in alignment with the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP), launched in 2011, structured to have independent power producers (IPPs) contribute to the procurement goals through periodic bidding windows to supply electricity and meet socio-economic development objectives. Its main purpose is to foster a renewable energy sector and specifically address the gap in electricity supply and demand management solutions, offering a flexible procurement mechanism to

respond to pressing power infrastructure development needs and reducing carbon emissions through electricity generation. While Africa only contributes 4% of global carbon emissions, South Africa remains an outlier on the continent, contributing 435.9 million tonnes, making it the 14th largest emitter globally.<sup>3</sup>

Since 2011, REIPPPP attracted approximately R209.7 billion through 92 approved projects.<sup>4</sup> Given its complementary endowment of wind and solar power potential, South Africa remains among the world's most highly ranked renewable energy investment destinations. Since 2011, the Department of Mineral Resources and Energy awarded 6327 MW of capacity to 92 IPPs.<sup>5</sup> One of the key benefits of the programme has been the reduction in tariffs achieved over bid windows. Specifically, wind and solar PV bids proved to be more cost-effective than Eskom's average tariff and below the costs of the coal power plants built between 2007 and 2008.<sup>6</sup> Additionally, REIPPPPs "dual consideration of economic development objectives has also led to the creation of a significant number of jobs as well as contributed to the Broad-Based Black Economic Empowerment and preferential procurement objectives."<sup>7</sup>

Notwithstanding its successes, REIPPPP has fallen short of effectively reducing transaction costs for participating bidders, where this encompasses all costs incurred in bid development and up to the commercial operation date. This is heavily influenced by procurement programme design and management, which impacts bid tariffs and subsequently private-sector investment. Hence a suitable and efficient procurement strategy is now integral to enhancing public-private partnerships.

1 International Monetary Fund. [South African Team, IMF African Department. South Africa's Economy Loses Momentum Amid Record Power Cuts](#). June 2023.

2 Siyobi, B and Moosa, M. 2022. [100 years of Eskom: How did we get here?](#) Good Governance Africa.

3 Aljazeera. [How much does Africa contribute to global carbon emissions?](#) September 2023.

4 IPP Office. 2019. [Independent Power Producers Procurement Programme: An Overview as of 31 March 2019](#).

5 Eberhard, A & Naude, R. 2016. [The South African Renewable Energy IPP Procurement Programme: Review, Lessons Learned & Proposals to Reduce Transaction Costs](#). Graduate School of Business. University of Cape Town.

6 Ibid

7 Ibid

# Analysis

## Prospects for private investment for IPPs

Within programme management, endorsement of REIPPPP by high-level political figures significantly contributed to its accomplishments. The historical commitment to renewable energy, former president Zuma's advocacy for green energy during COP15 and South Africa's hosting of COP17, culminating in the Green Accord, all played pivotal roles. South Africa's voluntary carbon emissions reduction commitment and its integration of renewable energy in the electricity plan signalled a remarkable shift from an almost exclusively coal-based system.

In practice, the informal structure of housing the IPP unit within the DMRE operated independently and in coordination with the DMRE which enabled a problem-solving approach that succeeded in programme implementation. Market dynamics also influenced the effectiveness of REIPPPP. For instance, the slowdown in the Organization for Economic Co-operation and Development (OECD) renewable energy markets directed international private sector attention to South Africa's REIPPPP. South Africa's developed capital market provided long-term project financing, and sophisticated advisory services which were crucial for programme design and management.<sup>8</sup> However, with South Africa benefitting from global investment funds, the risk lies in crowding out local financing solutions.<sup>9</sup> An economic strength is South Africa's effective banking sector, with a solid integration and where global investors can channel funds into domestic capital markets or the banking sector itself.<sup>10</sup> The real measure will be how funding reaches end projects, particularly around renewable energy plants, and this is predominantly done outside of domestic finance ecosystems.<sup>11</sup> Therefore, "banks and other local investors can be squeezed out

of opportunities, either because they are undercut by concessionary rates or because deals are struck at global level without SA institutions in the room."<sup>12</sup> This ultimately digresses the development of local financial systems and therefore should be equally considered in financing renewable energy projects.

The uptake of private equity investments in the energy sector has been progressing gradually and fund managers have seen the opportunities associated with addressing South Africa's energy crisis. To date, REIPPPP has awarded over 6,0000 MW of projects and notably, in the past year, Africa's Infrastructure Investment Managers (AIIM) committed to providing up to \$90 million in initial equity funding for an initiative that aims to develop, finance, and operate a portfolio of over 1GW of renewable energy assets.

## Leveraging government incentives

Government incentives have pushed fund managers to spur private power generation and capitalise on Section 12B of the Income Tax Act which offers tax deductions for assets used in generating electricity from renewable sources. Section 12B allowance has been increased from 100% to 125% until 28 February 2025 with no cap on solar installation output.<sup>13</sup> For example, Grovest, an asset investment firm, launched its Twelve B Green Energy Fund which plans to own and operate solar installations to supply electricity to sectional title complexes and commercial clients on longer-term power purchase agreements which maximises on Section 12B of the Income Tax Act. Consequently, investors in Grovest's fund can claim a 125% tax deduction on their invested amount. As such, the anticipated internal rate of return for the 10-year fund is 18% after deductions.<sup>14</sup>

8 Eberhard, A., Kolker, J. and Leigland, J. (n.d.). 2014. *South Africa's Renewable Energy IPP Procurement Program: Success Factors and Lessons*. World Bank Group, Washington, DC.

9 Theobald, S. *SA institutions risk being crowded out of green financing*. *Business Day*. November 2023.

10 Ibid

11 Ibid

12 Ibid

13 Maritz, J. South Africa: *'Loadshedding is an opportunity' for private equity*. Southern African Venture Capital and Private Equity Association. May 2023.

14 Ibid

## Opportunity in transmission enhancements to enable grid capacity

To facilitate an effective integration of renewable energy sources, South Africa is concentrating on upgrading its transmission infrastructure.<sup>15</sup> Inadequate transmission capacity has been a significant obstacle in effectively incorporating renewable technologies into the national grid. The government has sanctioned legislation promoting private generation initiatives and power trading, to reduce reliance on Eskom and encourage private sector participation. This strategy is expected to enhance competition and gradually lower electricity costs for end-users. This presents an opportunity for IPPs to further scale up in transmission enhancements and ultimately enable grid capacity.

In addressing the energy crisis, South Africa has implemented multiple measures to expedite the approval and connection of power projects. Environmental authorization timelines have been halved, and grid connection clearances are now granted within six months. Additionally, Eskom has plans to establish solar and battery storage facilities at various locations, including Komati, Lethabo, Majuba, and Sere. More recently, Eskom has launched Africa's largest battery energy storage project – Eskom's Hex battery energy storage system (BESS) in the Western Cape's Breede Valley.<sup>16</sup> This innovation will help Eskom to store excess power for use during peak demand.<sup>17</sup>

While renewable sources offer promise, South Africa must consider the role of gas in its energy mix. The development of gas resources, such as the Luiperd and Brulpadda fields, could significantly contribute to meeting the country's power demands.<sup>18</sup>

Battery storage also plays a crucial role in South Africa meeting its energy requirements and decarbonisation objectives. Should gas-to-power not be pursued, the existing coal-based capacity, along with new Kusile units, would need to operate continuously, straining the electricity system. In such a scenario, battery storage would serve as a viable alternative, albeit requiring greater overall capacity compared to gas-to-power and potentially incurring higher costs. Hence BESS is a step in the right direction. The integration of additional intermittent capacity, whether through batteries or gas solutions, would help reduce reliance on coal-based power, especially during periods of limited solar and wind availability.

## Exit prospects for private equity investors

With the potential risk of stranded assets for fossil fuel dependent countries, including South Africa,<sup>19</sup> exit prospects for renewable assets present multiple avenues, particularly for platform businesses with multiple projects. The interest from large energy companies with private equity funds serves as a great exit strategy. For example, in March 2023, Actis, a global investor in sustainable infrastructure, sold its Lekela renewable energy company, which operates five wind farms in South Africa and has a broader African presence to Infinity Power, a global renewable energy company. Moreover, Copenhagen Infrastructure Partners, a Danish fund manager, acquired a majority stake in Mulilo Energy Holdings, a South African renewable energy company, which developed 440MW of operating wind and solar projects.<sup>20</sup>

<sup>15</sup> Eskom. 2020. [Transmission Development Plan 2020-2029](#).

<sup>16</sup> Gordhan, P. [Battery storage system shows SA can get things done](#). *Business Day*. November 2023.

<sup>17</sup> Ibid

<sup>18</sup> American Journal of Transportation. (2023). *Challenges ahead for South Africa's decarbonization as renewable power capacity to fall short of 2030 target*.

<sup>19</sup> Siyobi, B. [Stranded Assets: The Nexus Between Extractives, Climate, & the Circular Economy within the African Extractives Sectors](#). Policy Insights. South African Institute of International Affairs. July 2021.

<sup>20</sup> Maritz, J. South Africa: ['Loadshedding is an opportunity' for private equity](#). Southern African Venture Capital and Private Equity Association. May 2023.



### Way forward

As limitations of coal power become increasingly apparent, the integration of renewable energy sources, supplemented by flexible gas power and battery storage, emerges as a feasible way forward. This requires invested private sector players that embody their role as development partners. As South Africa endeavours to diversify its generation mix and curtail greenhouse gas emissions, proactive measures to enhance transmission infrastructure and development of local financial solutions will be pivotal.

<b>Signature:</b>	
<b>Approved by:</b>	<b>Dr Ross Harvey</b>
	Director of Research and Programmes at Good Governance Africa
<b>Date:</b>	8 December 2023

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**Contact us**  
 Tel: 011 268 0479  
 Email: [info@gga.org](mailto:info@gga.org)

Web: [www.gga.org](http://www.gga.org)

