



Transforming South Africa's Public Power Purchase Agreement (PPA) Process through Transparency

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[The Energy for Growth Hub](#) is a global think tank advancing data-driven solutions to end energy poverty. [PPA Watch](#) is a Hub project focused on power purchase agreements in emerging markets. These complex contracts are the foundation for most power projects and have major consequences on everything from sovereign debt sustainability to energy security. This country summary was prepared based on the Hub's independent research and consultation with key market actors.

Summary

Load shedding is [severely affecting South African GDP growth](#). The year 2022 was the worst year of load-shedding to date, with the country experiencing 157 days of power outages. By March 2023, the country experienced a record [141 consecutive days of load shedding](#), often over 10 hours daily and costing the country [\\$51 million a day](#) according to the Central Bank. Eskom, the heavily indebted state-owned utility and bulk electricity provider, announced that ‘permanent’ load shedding averaging at least 2,000-3,000 MW is expected for the next two years. In February 2023, [President Ramaphosa declared a National State of Disaster](#) to address the power crisis and. The Energy Crisis Committee had been set up in July 2022 to [“end load shedding”](#), yet the situation has worsened.

An Electricity Minister was also appointed in March 2023 [to address inter-departmental alignment and cooperation in government](#), a central issue in this case study. Brazen conflict among key players — the ruling party ANC, national government ministers, Eskom, regulators, organized labor, and local government — has hindered progress.

Despite a solid legislative and world-class institutional framework for renewable energy, demonstrated from 2011-2014 in the initially successful Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), procurement efforts since then have been paralyzed by opaque contracting, corruption, and ideological disputes that have plagued the coal sector.

South Africa’s Just Energy Transition Partnership (JET-P), a package of \$8.5 billion to speed up the transition from coal to renewable energy, raises concerns, particularly due to [limited public consultation](#), and [opposition by the Energy Minister](#), in the development of the [investment plan](#).

Exploring opaque and delayed contracting practices, this case study highlights the potential of PPA transparency to mitigate these challenges in power procurement — and ultimately help South Africa address its economic and electricity woes as well as the inevitable march towards increased renewable energy deployment.

Introduction

South Africa has experienced increasing national power generation shortages and load shedding since 2007, resulting in a steady decline in annual electricity supply. In 2019, the government officially acknowledged a capacity shortage but only aimed to address a “short-term gap” of 2,000-3,000 MW¹ by December 2021. However, as of April 2023, an official acknowledgment of a [6,000 MW gap has been made](#). The power supply shortage, coupled with Eskom’s debt, has contributed to an economic slowdown, rising unemployment, poverty, and sovereign debt risk. Eskom’s financial instability and lack of transparent practices, including corruption and state capture, pose a significant risk to South Africa’s public finances, with the government [guaranteeing as much as \\$14 billion of its debt](#).

[Many allegations of state capture](#) are centered on private interests that influence Eskom’s procurement and contracting, particularly in the coal sector. The aging and poorly maintained 40 GW coal fleet, scheduled for decommissioning in the next two decades, has resulted in declining technical performance.

IPPs played a major role in providing additional and much needed power to complement state-owned generation plants. The Independent Power Producer Procurement Program (IPPPP), the primary vehicle for sourcing new generation capacity, has stalled after an initially promising start from 2011-2014. The latest bid window (BW), BW6, had limited success with only five bidders awarded 490 MW PV out of 56 invited bids for 5,200 MW, due to a lack of collaboration and transparency between the Department of Mineral Resources and Energy (DMRE) and Eskom, as well as insufficient grid capacity. This slow procurement process has hampered efforts to address the energy-supply crisis. Modeling indicates that expediting renewable energy procurement earlier could have reduced load shedding by 96.5% in 2021.²

IPPs of any size are now allowed to contract with customers over the national grid, leading to a significant disruption in new generation capacity additions. Eskom retains an effective monopoly, for now, owning and operating >90% of supply and is still the designated ‘single-buyer’ of IPPs contracted by the public electricity system. The exemptions have led to a substantial pipeline of announced private customer IPP projects which will take much pressure off the public system starting from about 18 months with possibly as much as 6 GW becoming operational from then onwards. However, this is unlikely to solve the supply shortage in the public system. Further reform in the overall electricity supply industry might also alleviate the pressure. But for now, most of the 30 GW of new generation required to meet demand by 2030 is slated to be sourced through the government-run IPP procurement programme that is the subject of this case study.

¹ Department of Mineral Resources and Energy (DMRE) South Africa (2019) Integrated Resource Plan (IRP2019). October 2019.

² <https://www.miningweekly.com/print-version/new-report-outlines-strategy-for-ending-load-shedding-by-early-2024-but-delivery-hinges-on-substantial-political-will-2022-07-01>

Electricity generation capacity overview

TABLE 1: Electricity generation capacity

Market Structure	Total Installed Capacity	Installed Capacity Mix %		Total PPAs
Vertically integrated grid, with some IPP participation	52 GW	Coal	71.3	114 operational PPAs
		Gas	7.4	
		Nuclear	3.6	
		Pumped Storage	5.6	
		Hydro	4.0	
		Wind	3.8	
		Solar PV	2.8	
		Solar CSP	0.6	
		Other	1.0	
		Total	100	

Key players in the power sector

- Eskom Holdings (SOC Ltd):** Eskom Holdings, the state-owned electricity company in South Africa, with a monopoly on bulk electricity supply, owns the national transmission grid and generates most of its electricity from coal-based power stations. Until 2006, Eskom had full control over generation, but new regulations were introduced to increase transparency and involve independent power producers (IPPs).
- Department of Mineral Resources and Energy (DMRE):** Manages energy policy, publishes the IRP, and procures new capacity through the [DMRE IPP Office](#).
- National Energy Regulator of South Africa (NERSA):** Issues generation, transmission, and distribution licenses under NERA (see below) and approves wholesale and retail tariffs. DMRE-procured IPPs are required to be licensed by NERSA.
- Independent power producers (IPPs):** Almost all of South Africa’s renewable energy projects were built in the last ten years by private developers under PPAs awarded by DMRE and signed by Eskom, supplying roughly 6% of generated energy and making up 11% of MW capacity, mostly, wind, and solar PV.

Legal & Regulatory Framework

From 2006 an entirely new electricity procurement system was established.

- The National Electricity Regulation Act (Act 4 of 2006) (NERA)** and **NERA – Regulations on New generation capacity (2011) (NGRs)**: New power procurement via

the Independent Power Producer Procurement Program³ (IPPPP, including the [renewable energy IPPPP \(REI4P\)\) launched in August 2011](#)). This was a radical break from the past. The [NGRs](#) are specifically aimed at “regulating the entry of a buyer and IPP into a power purchase agreement” and are core to the PPA/IPP processes.

- **Integrated Resource Plan 2010-2030 (IRP 2010-2030)**: This initiative was introduced by the Department of Energy (DOE)⁴ in 2011. The plan, published under NERA, established a blueprint for the construction of 17 GW of renewable energy. It represents a fundamental shift in governance, mandating the government to employ a least-cost modeling approach and engage in a public consultation process to create an annual plan that clearly outlines the technologies to be constructed.
- Other important legislation relevant to PPAs includes the Public Finances Management Act (PFMA), Promotion of Administrative Justice Act (PAJA), Promotion of Access to Information (PAIA), and [National Environmental Management Act \(NEMA\)](#), in addition to the general rules of court governing information disclosure.

South Africa's Power Market

Eskom's nationalization of private power stations in the 1920s led to the creation of Africa's largest power system, closely tied to the private sector minerals industries. A significant 27 GW expansion from 1974 to 1983, managed by Eskom, tripled capacity with coal stations, and by 2000, capacity reached 40 GW. A policy shift in 1998 saw Eskom barred from new domestic generation, prompting an Independent Power Producer (IPP) program that struggled due to governance issues. In 2006, Eskom resumed building coal stations in an attempt to avert a crisis, but Medupi and Kusile plants were marred by corruption, reflecting larger mismanagement issues.⁵ A budget increase, declining performance, and corruption contributed to Eskom's financial crisis.⁶

The National Electricity Regulatory Act (NERA) was established to rectify the Department of Minerals and Energy's (DME) inability to secure coal IPPs during 2001-2006, resulting in the creation of a specialized IPP procurement system by 2011. NERA mandates Integrated Resource Plan-driven public consultations and publications, with the Minister of Energy's Determinations guiding technology procurement. IPPs bear the responsibility for new power generation, managed by the DMRE IPP office through confidential bid windows (BWs) utilizing 'single-step auctions' via request for proposals (RFPs) and pro-forma PPAs. Evaluated by the DOE, IPP bids secure non-negotiable PPAs within bid windows (BW) total invited

³ The law does provide for procurement by Eskom but since 2011 policy has been to procure via the IPP Office and no new procurement has been initiated by Eskom.

⁴ The Department of Energy (DOE) was split out of the Department of Minerals and Energy (DME) in 2010 and then joined up again with the Department and Mineral and Energy Resources (DMRE) in 2018.

⁵ [Final Reports - Commission of Inquiry into Allegations of State Capture](#).

⁶ Medupi's sixth (and final) unit achieved commercial operation seven years late in 2021 but one unit exploded catastrophically in 2022 and is scheduled to be repaired by 2024. Kusile's first unit achieved commercial operation in 2021 with four units operating by 2022. The final two are scheduled for 2024. <https://mg.co.za/environment/2023-01-24-eskom-needs-big-money-to-fix-kusiles-chimney-to-cut-load-shedding/>.

megawatts, with final agreements signed between Eskom and IPPs after NERSA licensing, under DMRE's procurement oversight. Financial adherence to NERA and PFMA is ensured by the DMRE, NERSA, and Eskom, with limited publicly disclosed information focusing on technology-specific weighted average tariffs per bid window.^{7,8}

The Renewable Energy Independent Power Producer Programme (REI4P) from 2011 to 2014 aimed to procure 6 GW of wind, PV solar, and concentrated solar power (CSP) by 2020, achieving success with 62 projects totaling 4,303 MW signed during BWs 1, 2, and 3, followed by additional bidders under BWs 3.5⁹ and 4, bringing the total to 90 projects. Despite early criticisms of high tariffs, REI4P BWs 1-4 were hailed as a success.¹⁰ However, after 2014, regulatory processes faced delays, failures, or stalled pre-PPA stages. Eskom's refusal to sign 28 renewable energy PPAs in BW5 until 2018 citing the impact of new PPAs on their balance sheet triggered difficulties, while attempts to update the Integrated Resource Plan were problematic. Coal IPP procurement efforts faltered due to financial withdrawal, environmental challenges, and altered cost dynamics, lacking a robust value for money assessment.¹¹

The Risk Mitigation Independent Power Producer Programme (RMIPPP) in August 2020 aimed to address a supply gap but faced controversies and yielded limited results, contributing to a persistent electricity shortage despite evidence that a smoothly executed REI4P could have averted substantial load shedding. It is also important to note that in 1998, the Department of Minerals and Energy published an [Energy Policy White Paper](#), predicting a supply-demand gap by 2007.

PPAs and Electricity sector challenges

Since 2015, power procurement delays and failures have outnumbered successes. The system established in 2011 under the NERA has become highly contested, revealing significant problems after 2014. Flaws in the processes and a lack of effective management mechanisms in the NERA-NGR system have been major factors. Changing the DMRE RFP/PPA approach from default confidentiality to default transparency, with confidentiality only when justified, would address many identified issues.

⁷ Program [e.g. renewable energy/coal]; Bid Window; Bid ID; Project Name; Technology [e.g. Photovoltaic Crystalline Fixed/Onshore Wind, etc.]; Capacity (MW); Province; Local Community; Project Status.

⁸ <https://www.ipp-projects.co.za/ProjectDatabase> - There are exceptions but most individual PPAs have little detailed information publicly available.

⁹ aip.scitation.org/doi/pdf/10.1063/1.5117581 - "Bid window 3.5 was initiated by the South African DOE in response to the high amount of interest generated in the REIPPPP program. Bid window 3.5 was created specifically for CSP and only allowed for the inclusion of an additional 200 MW of CSP which saw the announcement of 2 preferred bidders in December 2014, namely the Kahtu and Redstone projects each winning 100 MW projects."

¹⁰ [Kitzing et al. 2021](#) BW1-3 were compared with European projects from 2013-2021.

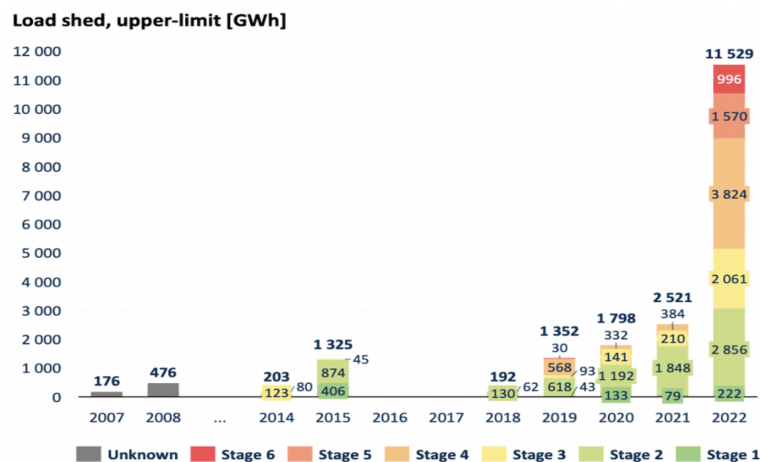
¹¹ Ireland, G. and Burton, J. (2018) An assessment of new coal plants in South Africa's electricity future programme. <https://www.africaportal.org/publications/assessment-new-coal-plants-south-africas-electricity-future-cost-emissions-and-supply-security-implications-coal-ipp-programme/>

Demand for new generation

The scarcity of power purchase agreements (PPAs) since 2015, resulting in only 24 signed agreements totaling 1,759 MW without grid connections, has significantly exacerbated the ongoing electricity supply shortage. Despite this pressing issue, there is a concerning lack of recognition regarding the substantial challenges within the Independent Power Producer Programme (IPPPP). Independent studies reveal that incorporating an additional 5 GW of wind and solar capacity in 2021 and 2022 could have averted up to 96.5% and 92% of load shedding respectively, had the REI4P progressed seamlessly after BW4.

The situation prompted the RMIPPP in response to the IRP 2019's identification of a short-term supply gap. However, this effort has faced complications, including controversy over favoring gas-powered solutions, leading to legal disputes and Value for Money (VFM) concerns that have delayed crucial PPAs. Looking forward, meeting future energy demands requires the immediate construction of approximately 60 GW of wind and solar PV by 2030, escalating to 150 GW by 2050, necessitating a consistent annual build rate. Transparent disclosure of PPAs and related information would provide essential financial and environmental insights, reinforcing the urgency for South Africa to transition to cleaner and more sustainable energy sources.

FIGURE 1: Eskom load-shedding 2007-2022 (CSIR, 2023)



Lack of transparency as a major cause of delayed contracting

The previously efficient regulatory processes of the Renewable Energy Independent Power Producer Programme (REIPPPP) have encountered delays, failures, or pre-PPA signature challenges since 2015. Eskom's refusal to sign renewable energy PPAs in 2015 led to delays until 2018, followed by further difficulties in subsequent attempts. Additionally, lack of transparency in the DMRE's IPPPP contradicts open governance principles, contributing to conflicts and poor performance.

The DMRE's IPPPP system, which requires confidentiality, contradicts the principles of open and transparent governance outlined in the Promotion of Administrative Justice Act (PAJA)

and the Public Finances Management Act (PFMA). The lack of transparency has led to conflicts and contributes to the poor performance of the DMRE IPP Office. While NERA does not explicitly require confidentiality, it is a decision made by the DMRE.

Transparent financial information and upfront VFM assessments could have prevented failures in coal IPPs and [Karpowership projects](#), where lack of transparency resulted in non-compliance with NERA and PFMA. To address these issues, revealing confidential cost and pricing information, especially VFM analysis, in PPA processes could alleviate delays and streamline resolutions throughout each stage, encompassing internal RFP-pro-forma-PPA, NERSA licensing, and the final PPA from the bidding process. Confidentiality prevents a transparent public assessment. Disclosures from the start, in the request for proposal (RFP) and PPA formulation, could have averted these issues.

Governance and dispute risk

The long-standing conflicts surrounding coal, fossils, renewables, privatization, and anti-privatization are exacerbated by the lack of transparency in the PPA process, particularly regarding key financial information.

One of the main causes of delays in the IPPPP, once the bid process has been completed, is [disputes over VFM of renewables](#). Influential anti-IPP and anti-renewable energy lobbies promote false narratives that secretive deals between government and renewable energy companies expose South Africa to unnecessarily high electricity costs. Transparent PPAs would go a long way to debunking these false narratives. [Incorrect reports of PPA costs in renewable energy projects](#) have been used to lobby against both renewables and the inclusion of the private sector in the energy system via IPPs, delaying processes. More transparent PPAs could assist in discrediting this incorrect information.

High utility debt & sovereign debt risk

Eskom's high debt continues to pose a significant risk to public finances, with the government guaranteeing as much as 350 billion rand (\$19.9 billion) of its debt in 2023.¹² Eskom has previously received a total of 263.4 billion rand (~\$14.4 billion) in bailouts since 2008/09. Non cost-reflective tariffs and debt from municipalities owed to Eskom of about 56.3 billion rand (~\$3 billion) and incidents of rife corruption and state capture have contributed to the utility's current financial crisis.

IPP-Office PPAs are covered by a sovereign guarantee. While Eskom is the prime counterparty to the IPP in the PPA, the National Treasury provides guarantees of payment. Transparent PPAs including associated National Treasury agreements could provide additional investor comfort to expedite the IPPPP although this has not been a significant problem.

¹² <https://allafrica.com/stories/202211030018.html>.

Investment risk

The failure of coal IPP procurement efforts, initiated in 2012 and ending in 2022 due to financiers withdrawing, poses a significant investment risk. Environmental approval challenges and inclusion in the "Policy Adjusted IRP" rather than the cost-effective "Revised Balanced Scenario" further questioned the feasibility of these projects meeting a robust Value for Money (VFM) assessment. The initial VFM assessment based on outdated 2010 comparative costs, misaligned with altered costs of coal versus renewable energy by 2016, rendered coal uncompetitive for the envisaged commissioning date. Transparent publication of a prudent bid assessment in 2016 could have highlighted the high risk of VFM not being achieved. In this case, the DOE published additional details on the RFP qualification and evaluation criteria.¹³ Unfortunately, a credible VFM assessment was omitted, resulting in costly consequences for all parties involved. Organized labor and coal lobbyists' influence on the ANC, incorrectly blaming IPPs for Eskom's financial crisis as part of an anti-privatization campaign, has created political pressure with misleading information. Transparent PPAs could counter false claims and enhance understanding of IPPs' impact on Eskom finances.

Tariff pricing

Bulk electricity prices have increased by 400% since 2007.¹⁴ Tariffs are set by the National Electricity Regulator of South Africa (NERSA). While a substantial subsidy to poor households contributes partially to Eskom's inability to recover costs, the main causes are extensive inefficiencies in Eskom including corruption, severe problems with non-payment by municipalities, and a regulated wholesale bulk tariff that does not cover costs. Most households are connected but energy poverty is rife owing to affordability. Contracting more low-cost renewable energy would lower average generation costs and improve cost recovery.

Conclusion and Recommendations

The lack of interagency coordination and transparency among the various institutions that conduct VFM assessments has led to disputes and power plays that have delayed power procurement. Eskom is excluded from the PPA drafting process, despite complaints in formal NERSA procedures, leading to PPAs in RFPs with questionable economic rationale, BW-awarded PPAs that Eskom refuses to sign, and no mechanism for resolving these disputes. Confidential internal processes within the DMRE IPP Office develop detailed technical aspects of the confidential RFP and pro-forma PPAs. The PPAs awarded in the BWs are also confidential. The DMRE lacks cogent reasons for the level of PPA secrecy, except for a default position favoring confidentiality unless acceptable reasons are provided to the DMRE.

It is recommended that unless specific items compromise commercial competitiveness, all PPA information and procurement processes should be transparent. When public funds or public procuring entities are involved, the onus should be on making a cogent case for

¹³ DOE, 2016. FACTS SHEET Bid Window 1: Coal Procurement Programme.

¹⁴ https://www.gsb.uct.ac.za/files/Eskom_Enquiry_booklet_V3_Web_2.pdf.

confidentiality, not the other way around.¹⁵ This has been effectively implemented in other countries through competitive public tendering systems, including fully disclosed PPAs.¹⁶ South Africa could apply lessons from similar markets' experiences with disclosure practices for both open contracting processes and post contract award disclosure.¹⁷

The chronic and severe electricity shortage poses a threat to economic, social, and political stability, necessitating government action to address poor IPPPP performance. Significant improvements can be achieved by reforming the DMRE-managed NERA-NGR IPP procurement RFP and PPA processes, eliminating unwarranted confidentiality in the development of RFPs and pro-forma PPAs, NERSA licensing, bid assessments, and final PPA contracts.

¹⁵ <https://energyforgrowth.org/article/the-case-for-transparency-in-power-project-contracts-a-proposal-for-the-creation-of-global-disclosure-standards-revised-august-2022/>.

¹⁶ https://ppawatch.org/data/https://ppp.worldbank.org/public-private-partnership/sites/ppp.worldbank.org/files/documents/USA_Power%20Purchase%20Agreements%20between%20National%20Grid%20and%20Cape%20Wind%20Associates_EN.pdf.

¹⁷ [Register of power purchase agreements - Accra.](#)