

Enhancing Energy Project Bankability

Moving Beyond National Utility Credit Risk



Foreword

Zambia's energy transition has reached a clear pivot point. While policy discussions focus on state utility restructuring, private capital is ready to deploy into greenfield power projects. Yet mid-ticket investments in the USD 20 million to USD 50 million USD range (typically 25 MW to 60 MW assets) routinely stall due to a single barrier: securing senior debt without sovereign guarantees.

Historically, utility-scale power relied on direct government payment backstops. Today, severe hydrological constraints, Open Access regulations, and expanding mining power demand require a new model built on private-to-private power delivery. Mid-market projects cannot absorb the time and legal cost of legacy sovereign guarantee frameworks, nor can they rely on a single utility balance sheet. Unlocking institutional debt requires novel off-take engineering. However, sponsors and lenders must recognize that these structured de-risking mechanisms do not operate in isolation their effectiveness remains susceptible to broader macroeconomic shocks, foreign exchange volatility, inflation pressures, and sector-specific operational risks.

BDO Zambia published this paper to deliver a practical execution blueprint for project sponsors, corporate CFOs, and institutional lenders. Providing actionable financial mechanics beyond theoretical policy analysis: blended power purchase agreements, aggregator risk-sharing, and capital stack optimisation designed to bring mid-market energy assets to financial close.



Godsave Nhekede

Partner, Deal
Advisory

BDO Zambia



Vincent Daka

Senior Consultant, Deal
Advisory

BDO Zambia

Purpose for this paper

This paper is a contribution to the growing body of knowledge within the renewable energy sector in Sub-Saharan Africa. It does not constitute investment advice but is an overview of the Zambian renewable energy sector to support project sponsors, investors and development partners in deployment of their mandates. It also contributes to the efforts of the Zambian Government in making energy and electricity more accessible and increase understanding of the role of private players, the challenges they face and improve scalability, replicability and deployment of capital towards renewable energy projects.

BDO Zambia Deal Advisory and Business Development Team

Douglas Ironside, Godsave Nhekede, Jonathan Ambali, Thato Mtumbi, Mwape Sumbukeni, Vincent Daka and Mukupa Sata.

The list includes the deal advisory team at BDO Zambia, and those who peer-reviewed this paper.



Executive Summary

Zambia's power sector has reached a critical inflection point, driven by supply deficits and an urgent imperative for private capital deployment. The convergence of market deregulation, expanding regional mining demand, and grid vulnerabilities has fundamentally redefined how utility-scale and mid-market energy projects are developed, structured, and financed. As traditional sovereign backstops phase out, unlocking non-recourse project capital now demands a strategic transition from balance-sheet-supported utility models to market-driven, risk-mitigated corporate off-take architectures.

What are the commercial consequences of the energy market shift in Zambia?

Historically Zambia's energy sector relied on a vertically integrated state model with high barrier to entry. Following the 2024-25 energy crisis and inline with global practices, the market shifted towards an Open Access framework which made power a trading commodity¹. However, commercialisation has been slow to meet global standards due to limited market data to provide investors comfort and predictability as well as reliance on legacy Power Purchase Agreements (PPAs) operating under a single buyer approach. The National Utility's constrained balance sheet render standard PPAs unsatisfactory for commercial investors.

How does this impact project bankability for mid-level power generation assets?

With improvement in regulation for greenfield renewable energy projects within the USD 20 million to 50 million range (25MW to 60MW), bankability now hinges on credit enhancement². Without sovereign guarantees and the governments limited ability to provide first loss investment, securing non-recourse financing requires alternative off-take approaches and structured financial engineering to demonstrate downside protection, off-taker credit assessment to demonstrate revenue stability across the project lifecycle.

What role does off-take and financial engineering play in enhancing bankability?

In a liberalized Open Access market, securing a buyer only is no longer sufficient, independent power producers must demonstrate cost competitiveness and deliver risk-adjusted returns. By leveraging aggregator off-takers, dual-tranche capital structures, and hard-currency arbitrage, sponsors can effectively demonstrate stronger return.

Notes: (1) Statutory Instrument No. 40 of 2024

(2) Project Appraisal of a World Bank IDA Guarantee to the Republic of Zambia



1. Intermediary Aggregator Model: Moving Beyond National Utility Credit Risk

The bankability and success of renewable energy Independent Power Producers (IPP) is heavily dependent on the PPA. Historically project finance models have relied on PPAs from national utility providers, this being the case for Zambia.

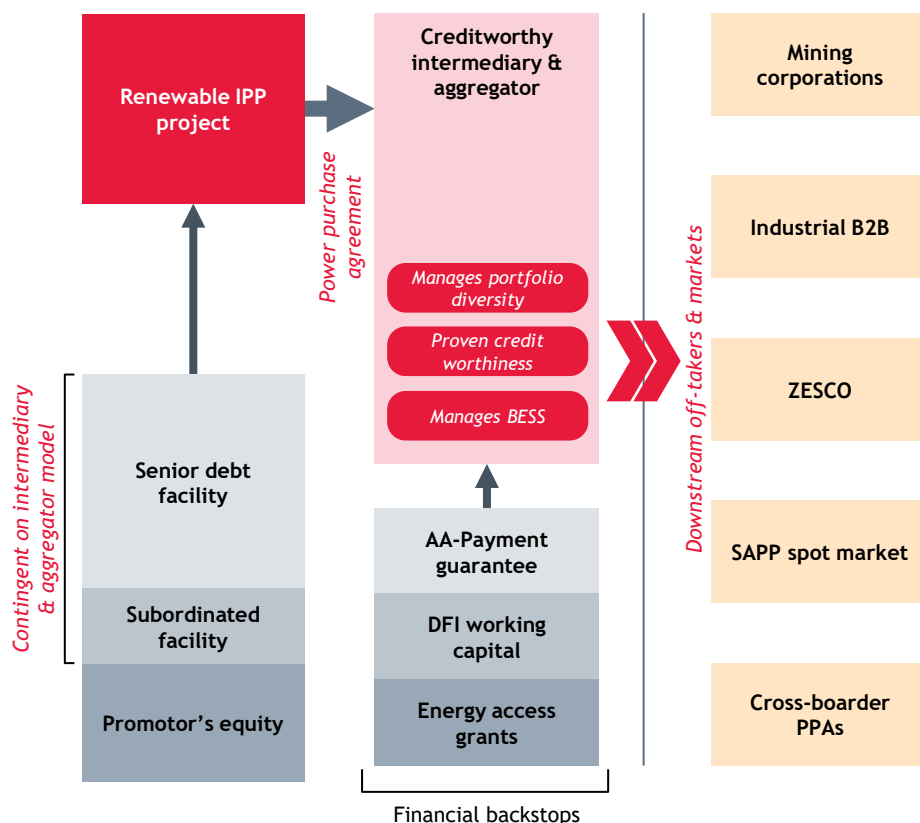
The evolving market and challenges faced have led to reduced investor confidence in sovereign backed PPA due to constrained balance sheets, administrative bureaucracies and delayed payments or total inability pose significant risk to cost overruns and project execution timelines.

While direct Business to Business (B2B) corporate PPAs offer higher tariffs they lack the diversification that protects senior lenders from default risks and overall are seen to be concentrated assets.

These dynamics create project threatening bottlenecks for mid-market renewable energy assets. Commercial investors and senior lenders are often reluctant to underwrite against unhedged merchant risk. However, IPP are often not well placed to manage the corporate and technical complexities that a diversified energy off-take portfolio demands.

To address this challenge the intermediary and aggregator model which was pioneered and deployed by entities like Africa GreenCo directly addresses these gaps and provide a platform for IPPs' success. The risks and challenges are addressed through;

- i. Central counterparty risk management
- ii. Portfolio diversification
- iii. Institutional credit enhancement
- iv. Access to concessional funding



The off-take structure shown in Figure 1 demonstrates:

- Multi currency revenue generation model: Supply national utility while maintaining a strong hard currency base (mining operators, SAPP Spot market and cross-boarder PPAs)
- Leveraging grant access: Aggregators leverage DFI-backed TA facilities and grants to underwrite early-stage product development, structure risk-hedging tools, and optimize overall capital deployment costs for the IPP

Figure 1: Intermediary aggregator off-take and risk mitigation architecture

2. Multilateral Credit Enhancement: The Scaling Solar De-Risking Blueprint

The persistent supply deficit on the national grid serves as the primary catalyst for Zambia's transition toward an Open Access market framework³. While market liberalization progresses, power sales to the national utility remain an unavoidable reality for utility-scale IPPs despite inherent credit risks. This section evaluates proven financial engineering structures to de-risk projects holding ZESCO PPAs⁴.

Multilateral credit enhancements, such as those deployed under the World Bank's Scaling Solar program in Zambia, demonstrate how concessional facilities can bridge this bankability gap⁵. By providing payment guarantees backstopped by Partial Risk Guarantees at concessional pricing (75-80 basis points per annum), these mechanisms insulate lenders against off-taker payment defaults⁵. However, institutional sponsors must recognize that concessional capital is designed to absorb targeted market failure and transition risk, rather than serve as a permanent subsidy for unhedged commercial off-taker default³.

To convert a ZESCO PPA into a bankable asset suitable for limited or non-recourse project finance, the government deploys a multi-layered credit enhancement framework. This framework relies on a three-tiered security stack designed to protect project cash flows from off-taker illiquidity:

- i. **Commercial Liquidity:** A commercial cover bank issues a revolving Standby Letter of Credit covering 3 to 6 months of debt service to absorb immediate billing delays.
- ii. **Multilateral Risk Transfer:** An IDA Partial Risk Guarantee backstops the commercial bank, converting off-taker default into a concessional sovereign obligation.
- iii. **Fiscal Alignment:** A Sovereign Indemnity Agreement binds ZESCO's performance directly to national public finances.

For IPPs, sponsors can source regional credit enhancement. Facilities like ATIDI's Regional Liquidity Support Facility provide revolving letter of credit protection, while GuarantCo offers local currency guarantees to mitigate foreign exchange mismatch risk.

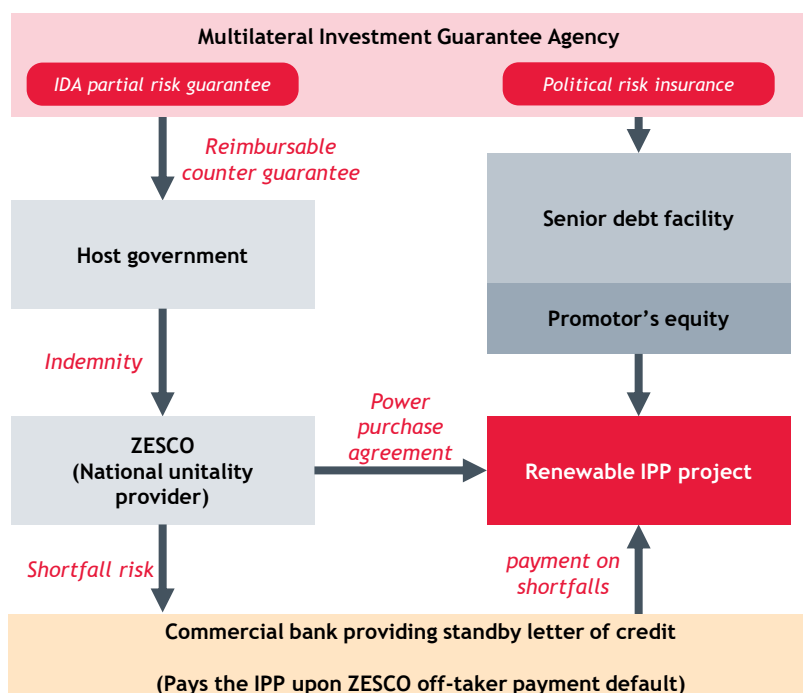


Figure 2: Multilateral Credit Enhancement Architecture and Sovereign Risk Allocation for Utility Off-Take

The structure is reliant on the following:

- A revolving Letter of Credit covering 6 months of debt service. Upon a ZESCO payment default, the IPP draws directly on the Letter of Credit to avoid debt service disruption.
- If ZESCO fails to replenish the Letter of Credit within the contractual cure window, the commercial bank draws on the World Bank (IDA) Partial Risk Guarantee.
- An Indemnity Agreement requiring the host government to reimburse IDA for any PRG payout, converting off-taker risk into a direct sovereign obligation.

Notes: (3) Energy Regulation Board (ERB), *Open Access Framework Guidelines for the Zambia Electricity Supply Industry*.

(4) Energy Sector Report, *National Grid Off-Take Constraints and Credit Assessment*.

(5) World Bank Group. (2017). *Zambia - Scaling Solar Guarantee Project: Project Appraisal Document* (Report No. PAD1832), p. 12.

3. Corporate Off-Take and the Commercial & Industrial Transition

While the first section of this paper discusses the single corporate off-taker risk and establishes the role of regional aggregators in eliminating single asset default risk by taking on an intermediary and portfolio diversification role the Open Access environment has liberalised, energy source options for corporate off-takers. These include tier-one mining houses, large scale manufacturing and industrial operations, this category of off-takers offer an irreplaceable advantage which includes hard currency (USD) backing, cost-reflective tariffs that are commercially negotiated at rates higher than the national utility base rate. The bankability of direct C&I PPAs hinges on de-risking mechanics that shift from portfolio diversification to contractual ring-fencing.

Two core issues remain to address bankability., The first being debt amortisation schedules in project finance typically require 12 to 15 year horizons, whereas corporate off-takers typically commit to fixed supply agreements around 5 to 8 years due to commodity cycle volatility and secondly, the risk of concentrated off-take default.

To overcome concentrated and corporate counterparty risk, project finance structures for direct C&I PPAs substitute portfolio diversification with contractual ring-fencing, structures.

- i. **Liquidity and revenue reserves mandates:** As part of securitisation, lenders mandate that the C&I counterparty establishes an offshore cash collateral accounts or letters of credit to maintain a 6month revenue reserve. This creates a buffer against short-term operational disruptions or commodity price downturn.
- ii. **Parent company guarantees and cross-default provisions:** local subsidiaries often lack standalone credit ratings, PPAs must be backstopped by parent guarantees to leverage parent entity rating and the wider operational asset portfolio.
- iii. **Blended finance mezzanine tranches:** The tenor mismatch can be addressed by incorporating mezzanine tranches and risk-sharing facilities. These subordinated tranches are meant to absorb refinancing risk, enabling commercial lenders to deploy shorter tenor facilities.

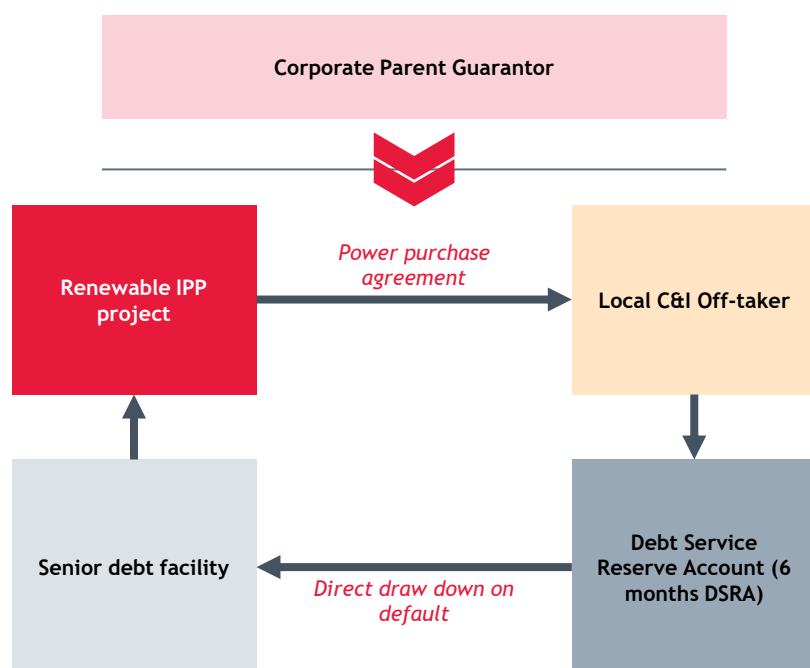


Figure 3: Contractual Ring-Fencing and Offshore Credit Enhancement for Corporate PPAs

- In instances where local operations face disruption, senior debt service is immediately drawn from the 6-month DSRA, while the parent guarantee legally obligates the global holding entity to replenish liquidity before default cascades to the SPV.
- Foreign financiers often require that the DSRA is held in an offshore account to hedge against capital controls, and foreign exchange volatility.
- PPAs indexed directly in USD eliminate ZESCO Kwacha exposure, allowing debt service coverage without local currency hedging costs.

4. Merchant Transition and Regional Export: Southern African Power Pool (SAPP)

Thus far the paper has established contractual mechanisms to enhance project bankability within domestic borders, scaling IPP operations and risk hedging for senior debt against single-jurisdiction macro risks require a regional perspective. Incorporating SAPP trading rights shifts a Zambian power generation assets into a regional energy merchant. This integration enables project sponsors to directly benefit from cross-border price arbitrage, where prices fluctuate between USD 6.4 and 17.6 cents/kWh across off-peak and peak trading intervals⁶.

Beyond capturing price differentials, the SAPP trading platforms offer a vital liquidity outlet for uncontracted generation, or excess capacity not absorbed by domestic off-takers. By shifting away from exclusive reliance on a single state utility or corporate buyer, IPPs can route uncommitted capacity through regional trading mechanisms, effectively diversifying revenue streams and decoupling asset performance from localized off-taker illiquidity.

To satisfy conventional non-recourse senior debt covenants while taking advantage of the SAPP spot market upside, project promoters should structure their assets' capacity into **separate cashflow tranches**

- i. **Senior debt tranche:** This tranche is dedicated to long-term, fixed tariff domestic C&I or de-risked ZESCO PPAs. This predictable cashflow is ring-fences strictly to meet senior Debt Service Coverage Ratios (DSCR) this protects the senior debt portion from regional spot price volatility.
- ii. **Subordinated or mezzanine tranche:** This tranche is anchored on the SAPP spot market where the upside of higher tariffs is captured through the Forward Physical Market (FPM) with additional spot market arbitrage through the Day-Ahead Market (DAM)

Traditional lenders will not underwrite uncontracted merchant price risk, project sponsors must utilize subordinated financial engineering methods including junior mezzanine capital and SAPP settlement escrow accounts.

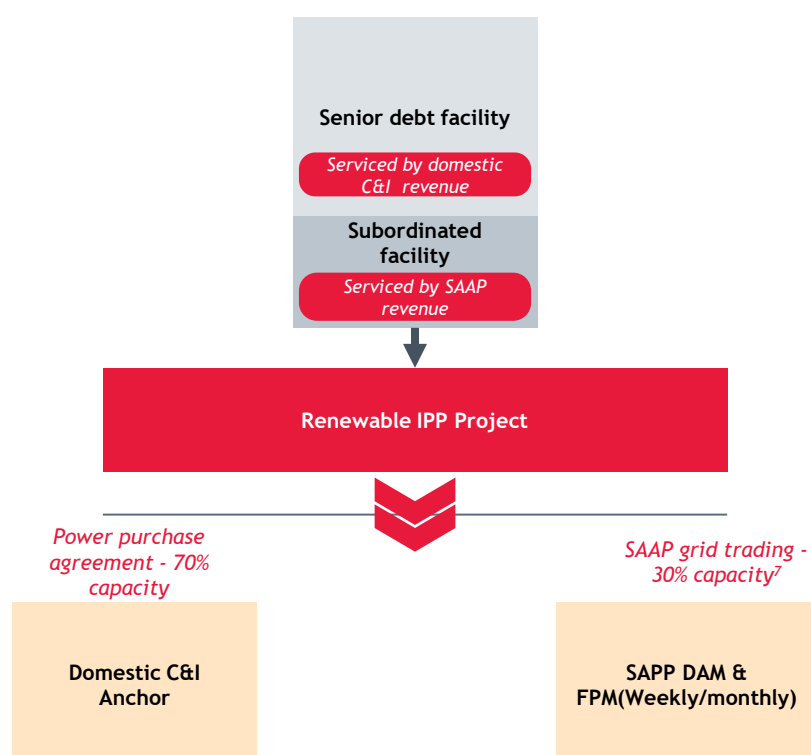


Figure 4: Contractual Ring-Fencing and Subordinated Capital Mechanics for Regional Spot Arbitrage

The SAPP trading structure provides two upside benefits:

- Merchant volumes clear through SAPP's competitive trading tiers utilizing FPM (Weekly/Monthly) to secure baseload revenue floors and the DAM to capture peak price spreads.
- SAPP market clearing proceeds settle directly into offshore USD escrow accounts via SAPP's regional clearinghouse, bypassing local banking liquidity constraints and enforcing automated waterfall distributions to senior debt service before equity/mezzanine service.

Notes: (6) SAPP Market Performance Report (October 2025)

(7) The 70/30 capacity split may vary based on project capacity and needs

FOR MORE INFORMATION:

Godsave NHEKEDE
Godsave.Nhekede@bdo.co.zm

Vincent DAKA
Vincent.Daka@bdo.co.zm

+260 211 254623

This publication has been carefully prepared, but it has been written in general terms and should be seen as containing broad statements only. This publication should not be used or relied upon to cover specific situations and you should not act, or refrain from acting, upon the information contained in this publication without obtaining specific professional advice. Please contact BDO Zambia to discuss these matters in the context of your particular circumstances. BDO Zambia, its partners, employees and agents do not accept or assume any responsibility or duty of care in respect of any use of or reliance on this publication, and will deny any liability for any loss arising from any action taken or not taken or decision made by anyone in reliance on this publication or any part of it. Any use of this publication or reliance on it for any purpose or in any context is therefore at your own risk, without any right of recourse against BDO Zambia Limited or any of its partners, employees or agents.

BDO Zambia Limited, a Zambian company limited by shares which is affiliated to BDO Zambia Audit Services, a partnership, is a member of BDO International Limited, a UK company limited by guarantee, and forms part of the international BDO network of independent member firms.

BDO is the brand name for the BDO network and for each of the BDO Member Firms.

Copyright © August 2026 BDO Zambia. All rights reserved. Published in the Republic of Zambia.

www.bdo.co.zm