



ENERGY REGULATION BOARD

POWER PURCHASE / SUPPLY AGREEMENTS AND CONTRACTS OF SUPPLY REGULATORY REVIEW GUIDELINES

2018

FOREWORD

Energy is a key driver of economic growth and development. There is evidence that it propels the economic machinery world-over, including Zambia. Economic reforms are known triggers of economic growth. Zambia has seen a significant share of economic reforms since 1990. Of extreme importance to Zambia's energy sector was the enactment of the Electricity Act that succeeded the ZESCO Act and brought to an end the monopoly of ZESCO as a sole generator, transmitter, distributor and supplier of electricity. This entailed the commencement of the liberalization of the energy sector in Zambia. With this came the constitution of the Energy Regulation Board (ERB) through the Energy Regulation Act of 1995. Since then, Zambia has recorded significant progress in expanding power generation and supply infrastructure to increase the population's access to electricity. The liberalization of the sector has seen the proliferation of the private investors. However, to support this growth in investment, there is need to create more stimuli for private capital investment in the sector. One way of attracting such private investment is through the creation of an enabling regulatory environment.

In this regard, the ERB is committed to providing a regulatory framework that supports the growth of private capital in the sector. One of the tools that are critical to attracting private investment in the energy sector is the existence of equitable Power Purchase Agreement (PPA) or Power Supply Agreement (PSA). The PPA or PSA facilitates power trading between the power generating companies and the off-takers or consumers.

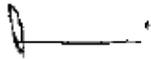
The ERB recognizes that there are many moving pieces affecting the future of electric power development in emerging markets such as Zambia. Today's PPA/PSA contracts demand more innovative incentives to ensure better availability, better performance, as well as more attractive and sustainable mixtures of energy sources. Emerging economies, therefore, need to master the key tools, models and lessons learned for transforming and strengthening today's electricity sub-sector. These include the latest models in negotiating Power Purchase Agreements (PPAs), in designing and managing new competitive power markets, as well as attracting the right mix of energy sources.

The ERB has the mandate to review and approve PPAs/PSAs and Contracts of Supply. It is a legal requirement that such Agreements are approved by the ERB before execution.

Providing clear guidelines for approving such agreements is pivotal to attracting private sector participation especially Independent Power Producers. It is for this purpose that these Guidelines have been developed. The Guidelines will provide guidance on how the ERB will undertake the regulatory review of intra and cross border power trading agreements. The PPA Guidelines will also give clear explanations of the new models of PPA risk allocation.

It's the ERB's hope that these guidelines will be found useful to many industry stakeholders which among others include the following: contract/agreements specialists, negotiators, legal practitioners/regulators/compliance specialists, policy analysts, projects managers, economists and investors. Specifically, from the energy sector, the Guidelines are targeting the electricity regulators and ministries, power utility companies, IPP developers, banks/investors, energy supply companies, law firms and consultant firms.

The envisaged benefit of these Guidelines is provision of essentials for negotiation of fair and sustainable PPAs based upon each company's risk profile and risk allocation needs.



Langiwe H Lungu (Ms.)
Executive Director

1. BACKGROUND

The Energy Regulation Board (ERB) is a statutory body created by the Energy Regulation Act of 1995 Chapter 436 of the Laws of Zambia, to regulate the energy industry. The specific functions of the ERB as provided in the Act are;

- i. To issue licenses;
- ii. To monitor the efficiency and performance of the undertakings, having regard to the purposes for which they were established;
- iii. To receive and investigate complaints from consumers on price adjustments by any undertaking, and regulate such adjustments by the attachment of appropriate conditions to licenses held by undertakings or by such other means as the Board considers appropriate;
- iv. To receive or investigate complaints from consumers and licensed undertakings on services provided by the undertakings and regulate such services by the attachment of appropriate conditions to the licences held by undertakings or by such other means as the Board considers appropriate;
- v. To approve the location and construction of, and receive and investigate complaints concerning the location or construction of any common carrier or any energy or fuel facility or installation or the carrying out of any works by any undertaking, and regulate such location and construction by the attachment of appropriate conditions to licenses held by undertakings;
- vi. In conjunction with the Competition and Consumer Protection Commission (CCPC) established under the Competition and Consumer Protection Act No. 24 of 2010 to :
 - a. Investigate and monitor the levels and structures of competition within the energy sector with a view to promoting competition and accessibility to any company or individual who meets the basic requirements for operating as a business in Zambia; and
 - b. Develop and implement appropriate rules to promote competition in the energy sector.
- vii. In conjunction with the Zambia Bureau of Standards, established under the Standards Act, design standards with regard to the quality, safety and reliability of supply of energy and fuels;

- viii. In conjunction with the Zambia Environmental Management Agency (ZEMA) established under the Environmental Management Act, formulate measures to minimise the environmental impact of the production and supply of energy and the production, transportation, conversion, storage and use of fuels and enforce such measures by the attachment of the appropriate conditions to licences held by the undertaking; and
- ix. To make recommendations to the Minister as to the measures to be taken through regulations to be made under the ERB Act

In addition to the foregoing, the ERB is also required to grant regulatory approval of power purchase or supply agreements as they pertain to the purchase and supply of electricity. A Power Purchase Agreement (PPA) is an agreement entered into between a generator as a seller of the electricity and the Buyer, who can be a Distributor, Service Provider, a Retail Trader, or any other customer. On the other hand, a Power Supply Agreement (PSA) is an agreement for the sale and purchase of electricity entered into between a licensed entity, other than a Producer, as a seller of the electricity purchased and another licensed entity.

These Guidelines provide the basis upon which the ERB regulates the sale and purchase of electricity within and outside Zambia, as it is considered that these agreements are a critical part of planning a successful energy project because they secure a long-term stream of revenue for the project. Further, these, Guidelines provide an outline of the contents expected in a standard PPA/PSA and the key issues to consider during negotiations.

Furthermore, the Guidelines provide Government, utilities, investors and other interested stakeholders with a guide to understand:

- i. The legal requirements;*
- ii. The technical requirements;*
- iii. The economic, financial commercial requirements; and*
- iv. The regulatory approval process.*

Notwithstanding these Guidelines, it is incumbent upon the negotiating parties to ensure that the provisions included in the PPAs/PSAs adequately comply to any other legal and regulatory requirements. For instance, parties are responsible for obtaining any necessary consents, permits, licences and approvals from other authorities.

The contracting parties are required to submit the *Initialed* draft Agreements, together with the accompanying financial models before the Off-taker or service provider executes the agreement.

2. LEGAL AUTHORITY

The ERB is empowered under section 27 of the Electricity Act Chapter 433 of the Laws of Zambia to request an operator of an undertaking to provide such information relating to the activities and operations of the undertaking, including such records, documents and agreements relating to the purchase and sale of electricity such as PPAs, PSAs and contracts of supply as the Board may require.

In addition, under the provisions of section 12 of the Energy Regulation Act Chapter 436 of the Laws of Zambia, the ERB is empowered to issue licences to undertakings carrying out entrepreneurial activities in the energy sector and impose such conditions as it may deem fit. In this regard, the licences issued to undertakings engaged in the generation, distribution, transmission and supply of power or energy require the holders thereof to submit for approval all contracts for the supply or purchase of power or energy entered into by the licensees.

The specific licensing requirements stipulate as follows:

- i. Licensees are mandated to provide for the ERB's prior review of all contracts and agreements:*
 - a) With other licensees or with retail or wholesale customers;*
 - b) For the import or export of power or energy; and*
 - c) For the transmission or the purchase or sale of bulk power or energy, including any and all contracts or agreements for the purchase or sale of electricity being entered into for the purposes of enabling or securing financing for new or expanded capacity.*
- ii. Contracts or Agreements concluded without the ERB's prior approval of their pricing provisions shall be considered null and void for the purposes of the ERB's determination of tariffs.*
- iii. The ERB has the right to retain copies of such Contracts and Agreements.*

It should be noted that the licensing conditions require that the regulatory review and approval be conducted *ex ante* to the two parties signing the agreement.

The foregoing provisions form the legal basis for the ERB's power to provide regulatory oversight on PPAs, PSAs, Contracts of Supply and any other agreement relating to the purchase or sale of power.

3. PPA/PSA PRINCIPLES

These guidelines have been developed to provide licensees with regulatory requirements to be met and considered by contracting parties as they negotiate PPAs, PSAs and Contract of Supply as the case may be. In undertaking regulatory review of the said Agreements, the ERB will ensure that the interests of the Government, investors and consumers are addressed. For the purpose of these guidelines, the ERB will, among others, have regard to the following:

Government

- Compliance to national policy
- Compliance to national legal and regulatory requirements
- Security of supply
- Safety
- That the tariffs are fair and balanced to all parties that are affected directly and indirectly by these transactions.
- That the terms of the Agreements are transparent and fair as well as guarding against any uncompetitive trading practices.

Investors/Utilities

- fair return on their investments
- Equitable allocation of risks
- Investment protection
- Predictability
- Transparency

Consumers

- Fair and affordable tariffs
- Efficiency
- Quality service provision

4. LEGAL REVIEW

In conducting legal review of the PPA/PSA, the ERB considers whether the following requirements in table 1 are met:

Table 1: Legal Requirements

No.	Requirements	Description
1	Contracting Parties	The names and addresses of the contracting parties should be clearly stated in the agreement
2	Legal Status	The contracting parties should be legal entities under the laws of origin. For local entities, obtain company status from Patents and Companies' Registration Agency (PACRA) i.e Certificate of Registration or Certificate of Incorporation as the case may be.
No.	Requirements	Description
3	ERB Licensing	Contracting parties should have a valid ERB licence including associated permits or approvals.
4	Signing	provision for signing should be made at the end of the agreement for the parties to sign after reaching closure
5	Duration of PPA	The start date and end date should be clearly stated.
6	Renewal of Agreement	the agreement should state whether its renewable or not
7	Termination provisions	The grounds for termination should be clearly stated and should not disadvantage any of the contracting parties
9	Dispute Resolution	The agreement should make provision for resolution of disputes amicably failing which, the parties can resort to have the dispute resolved through any formal dispute resolution mechanism.
10	Transfer of ownership & obligations	Provision should be made for circumstances under which parties may transfer ownership of obligations under the agreement to third parties
11	Permits/Approvals/Licensing by other Authorities	The parties are responsible for ensuring that all relevant approvals are obtained. For cross-border transaction, Ministerial approval should be obtained prior to submission of the agreement for regulatory approval.
12	Impact on change in laws/Force majeure'	The agreement should state whether any regulations, laws or institutional changes would affect rights or obligations of the parties and make provisions for implementing the changes.

5. COMMERCIAL/FINANCIAL REVIEW

In undertaking the commercial/financial regulatory review of the said agreements, the ERB will mainly focus on the provisions here-under outlined:-

5.1 Assessing Financial and Economic Viability

Financial and economic review will ensure that the project is financially and economically viable and that there is no cross-subsidization and the tariffs are cost reflective. The financial and economic viability assessment will take into account the following:

Table 2: Financial, Economic and Commercial Requirements

No.	Description	Detailed Description
1	Investment Cost	<ul style="list-style-type: none"> a. Total project cost; b. Breakdown or composition of financing; c. Sources of financing; d. Financing costs e. Timing of financing f. Capital structure
2	Financial Model	For new projects, excel based financial model showing the tariff build-up and the return on investment
3	Financial Analysis	<ul style="list-style-type: none"> a. Amount of electricity – the amount of electricity to be sold or purchased should be stated in MW/kW b. Charges – charges should be stated as either capacity or energy charge and or any other charge as agreed and the method of calculation applicable. c. Tariffs and the assumptions included like rate of return, inflation, indexation rates d. Project NPV, IRR, Pay-back period.
4	Escalation or indexation of tariffs	The escalation of tariffs should be stated in terms of: <ul style="list-style-type: none"> i. Period ii. escalation factor iii. reference or source for escalation factors
5	Taxation	Applicable taxes should be stated and who bears the tax
6	Economic Analysis	Cost and Benefit analysis of the project – who benefits and who loses from the project? What are the costs and benefits of the project? Economic NPV and IRR Regulatory determination of risks and financial viability of proposed project <ul style="list-style-type: none"> a. Risk determination b. Risk allocation c. Risk mitigation process d. Financial viability

No.	Description	Detailed Description
7	Allowable and Disallowable Costs	Unjustified costs from IPPs shall not be allowed such as: <ul style="list-style-type: none"> a. Over burden on rate-payers b. Demands for subsidies from government c. Hardship on single buyer d. Uncertainty for IPPs and its economic configuration

5.2 Tariffs

As a general guide, the PPA/PSA tariff is usually composed of fixed and variable charges. The **capacity charge** (i.e for despatched plants) and **energy charges** constitute the fixed and variable charges respectively. It is not however, uncommon to have **other charges (supplemental charges)** — usually set to recover any other costs (such as start-up costs), or for providing any other services (such as reactive support, reserve energy, and black-start capability). Different PPAs will contain a different balance of fixed and variable charges, and therefore pricing terms need to be converted into an average cost for a meaningful comparison. The effective average tariff will be computed as outlined in table 3.

Table 3: Effective Average Tariff Computation

<p>Effective Average Tariff = Base Energy Tariff (USc/kwh) + Capacity Charge expressed in US cents/kwh</p> <p>Capacity Charge is usually given in USD/KVA/Month. Therefore it has to be converted to UScents/kwh using the steps and conversions outlined below.</p> <p>Step 1: Conversion of Capacity Charge from USD/KVA/Month to USD/KVA/Year =capacity charge * 12 (Number of months in a year) We name the result as X</p> <p>Step 2: conversion of USD/KVA/Year to USD/kW/Year = X/Power Factor We name the result as Y</p> <p>Step 3: Conversion of USD/kw/year to USD/kwh =Y/[Load Factor *8760(Number of hours in a year)] We name the result as Z</p> <p>Step 4: Conversion of USD/KWh to UScents/kWh =z*100 This gives us capacity charge in UScents/kwh as requires in our main formula stated above</p> <p>Step 5: to obtain the effective average tariff we add the result of step 4 and the given base energy tariff as stated in our initial formula.</p>
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BET	Energy charged as stated in the PPA
Capacity Charge	Capacity Charge as stated in the PPA
Capacity	MVA or KVA
Power Factor	0.92 (Zambian Grid Code)
Load Factor	Ranges from 80% to 95%
1000	Conversion factor
12	Number of months in a year
8760	Annual operating hours

Energy charge is the amount paid in each period for each kilowatt hour of energy dispatched and delivered at the agreed delivery point during that period. It includes variable costs incurred in the generation of energy delivered, including charges for:

- Each unit of fuel used including the cost of transportation
- Variable operation and maintenance costs
- Major maintenance costs

Capacity Charge is the fixed payment that is paid each period for each kilowatt of available capacity. It includes fixed charges involved in the construction, operations and maintenance of the power plant, including charges for the following:

- Payment of principal and interest of the debt
- Return on equity
- Fixed operation and maintenance costs
- Possible fixed costs related to fuel supply and transportation

It is a regulatory requirement for the Agreement to separately show the following:

- i. The Capacity Charge and how it was computed;
- ii. The Base Energy Charge and how it was computed; and
- iii. The Effective Average Tariff and how it was computed.

The parties are allowed to negotiate and agree on the tariff. The ERB reviews the effective average tariff to ensure that it is not only cost reflective but also that it is fair to both the purchaser and the vendor.

The tariff review is guided by the tariff determination principles and methodology set by the ERB anchored on Revenue Requirement, which ensures cost recovery, reasonable return and prudential costing that only include costs associated with the generation, transmission, distribution and supply of electricity. The export PPA/PSA tariff is benchmarked with the regional market tariffs such as Southern African Power Pool (SAPP).

5.3 Transmission Or Wheeling Charges

The ERB's role in regulating wheeling charges between contracting parties will follow the parties' negotiations and mutual agreement.

The Transmission or Distribution tariff determination methodology will be anchored on Revenue Requirement (RR)¹. Where the ERB has established cost reflective tariffs for utilities' Business Units of Generation, Transmission, Distribution and Supply, tariffs will be benchmarked to these business unit tariffs.

As for wheeling transactions that transcend Zambian borders, the ERB will be guided by SAPP power trading guidelines as well as the RERA cross-border power trading guidelines.

For export PPAs, the wheeling charges are benchmarked also with the prevailing wheeling charges in the SAPP. Further, cross-border wheeling will be treated in terms of the SAPP rules as contained in the SAPP Agreement between operating members and the SAPP Operating Guidelines which governs trade between SAPP members. Charges for incremental losses incurred as a result of these wheeling transactions will also be treated according to these SAPP rules.

ERB requires that transmission asset owners/operators avail their transmission infrastructure to parties other than their own customers, with non-discriminatory terms negotiated by the contracting parties and approved by the ERB.

5.4 Tariff Escalation (Indexation)

In order to take into account inflationary movements and maintain tariffs at cost reflective levels over the life of the PPAs, the ERB will allow tariff escalation. A key feature of PPA pricing schemes is the fixed escalator where the electricity produced by the generator is sold to the transmission system operator or national utility at a price that increases at a predetermined rate, usually linked to a reference **Price Index (PI)** or inflation. For United States Dollar denominated tariffs the US Producer Price Index (PPI) is used while for Kwacha denominated tariffs the domestic CPI-X² maybe used. The Agreement shall also stipulate the escalation period which is usually annually.

In a case where there is a Multi-Year Tariff Framework and Methodology, the ERB will review the elements for automatic pass through in the PPA.

¹ Revenue Requirement as provided for under the ERB Tariff Determination Methodology, full details available in a separate set of Guidelines.

² Where, X is an Agreed factor as Utility costs do not usually increase at exactly same rate as CPI factor

Table 4: Indexation formula used by the ERB.

PPA Indexation for Energy and Capacity Charges		
Energy Charges	ECT (i)	= ECT (i-1) x (1+ USPPI (i));
Capacity Charges	EMCT (i)	= EMCT (i) x (1+ USPPI (i)).
Where	ECT (i)	= Effective Energy Tariff for the current year
	ECT (i-1)	= Effective Energy Tariff for the preceding year
	EMCT (i)	= Effective Monthly Capacity Tariff for the current year
	EMCT (i-1)	= Effective Monthly Capacity Tariff for the preceding year
	USPPI (i)	= Annual percentage variation in US Producer Price Index

5.5 Payments and Invoicing

The Contracting parties will be required to agree and specifically state all pertinent invoicing and payment provisions in the PPA. The invoice should clearly indicate the following:

- i. Capacity payments;
- ii. Energy payments;
- iii. Supplemental payments; and
- iv. Liquidated damages and/or penalties

In addition to the above, the billing period, preparation of invoice, processing of invoice and late payment implications must be clearly stated.

The buyer or off-taker has the right to review the invoice prepared by the seller and if it disagrees with the amount payable in the invoice, it may require clarification of such invoice within a specifically agreed time, this process shall be stated and provided for in the Agreement.

Where any portion of the invoiced amount is in dispute, these maybe withheld from payment and contested as part of the agreed dispute resolution mechanism under the PPA.

5.6 Escrow Accounts

As part of risk mitigation, the ERB recognises the use of Escrow Accounts (EA). To address any perceived liquidity concerns the off-taker may be requested to establish an escrow account to govern the payment obligations under the PPA. The terms of the EA shall be specifically stated in the Agreements.

5.7 Currency

The ERB approves the use of United States Dollar denominated currency in the Agreements. However, where the parties agree to use the local currency this is within the rights of the contracting parties.

6. REGULATORY REVIEW RISK ALLOCATION

Power projects are usually of high risk and therefore project success is dependent on the appropriate allocation of risks to the party best able to bear it. PPA/PSAs are usually signed for long periods of time with huge financial implications for the contracting parties as well as the consumers. These factors implicitly mean assumption and imposition of risks on contracting parties and other stakeholders. In view of the foregoing, Regulators can play a critical role in mitigating the risks via regulatory oversight of these PPA/PSAs. Table 5 below list the risks and their typical allocation in PPAs.

Table 5: Risk Allocation

RISK	EXPLANATION	ALLOCATION
Completion risk	The possibility that a project's construction or installation will be delayed, with additional cost or other implications.	Mainly by the construction contractor - it will be liable for liquidated damages for late completion
Cost overrun risk	The possibility that during the design and construction phase, the actual project costs will exceed projected costs.	Shared by Project owners and the Project company. The Project Company must lock certain costs such major plant equipment and commodity costs as early as possible
Design risk	The possibility that the private party's design may not achieve the required specifications.	Project company & main plant / equipment supplies. Performance tests must be before full hand over.
Construction risk.	Probability of loss associated with the physical (construction) phase of a project.	The EPCM or EPC company.
Exchange rate/ forex risk	The possibility that exchange rate fluctuations will impact on the costs of imported inputs or the project's debt or equity. . Including: - Forex availability. - Currency interchangeability.	The lenders will want to see appropriately robust hedging arrangements or some other mechanism to manage currency exchange risk such as price increase that is link to foreign exchange variations.

RISK	EXPLANATION	ALLOCATION
Force majeure and change in law.	The occurrence of certain unexpected events that are beyond the control of the parties, whether natural or manmade, that affects the project.	The lenders will want to review the force majeure and change in law provisions in the project documents and ensure that they are back to back (as far as possible) with the concession agreement.
Interest rate	Fluctuations in the rate at which the project borrows money.	Project finance debt tends to be fixed rate. This helps provide a foreseeable, or at least somewhat stable, repayment profile over time to reduce fluctuations in the cost of infrastructure services. If lenders are unable to provide fixed rate debt and no project participant is willing to bear the risk, hedging or some other arrangements may need to be implemented to manage the risk that interest rates increase to a point that debt service becomes unaffordable to the project.
Market / demand risk	The demand for the services generated may be less than projected.	This market risk is usually assigned to the off taker in PPAs. The rationale of the off taker taking this risk is that the off taker is a government utility and it is the government that is charged with the responsibility of ensuring it meets its projected development levels and a failure on the government's side implies paying for the predetermined volumes even with non-existent demand for it. The tool in the PPA that is used to allocate this risk is the take or pay clause. Take or pay clauses simply contract to guarantee a market for the product through pricing arrangements which cover operating expenses, debt service and retirement.
Price Risk	The risk to the generator is that the purchase price of electricity would go too low, such that the generators cash flows are not enough to meet the operational and management as well as equity and debt payments.	In regulated economies, price management is done through price regulation by government which is a way of making the consumers bear the economic costs of price risk management. In deregulation economies, the free market forces of demand and supply come into play causing volatility hence the need to manage price volatility through hedging in options and future contracts. Most markets are regulated and the price and escalation factor is stipulated in the contract and the risk is borne by the off-taker, which passes on to the consumer.

RISK	EXPLANATION	ALLOCATION
Volume Risk	It is the risk that the generator is not able to produce the contracted volumes or that the off taker is not able to take up all the contracted volumes for one reason or another.	The operational aspect of volume risk is on the plant operator and is usually allocated thus because the operator has to ensure that the plant is always available so as to generate a continuous stream of revenue. In the PPA, It is reflected in capacity recovery charge and a fixed operation and maintenance charge, which are all indexed to the inflation and exchange rates.
Operating Risk	Factors other than Force Majeure such as projected operating expenditure, skills requirements, labour disputes, and employee fraud	Operating costs can be locked in, to some extent, through hedging and futures contract and through input agreements but there are likely to be some costs that are not hedged and the lenders will want to be sure that these are limited.
Political Risk	Unforeseeable conduct by a government institution that materially and adversely affects the expected return on equity, debt service or costs of the project. This includes expropriation and nationalisation	Political risk should be managed in the project agreements with the government taking some of the risk in terms of compensation to be paid in the case of unilateral termination or expropriation, but not all political risks are likely to be borne by the government. Many project sponsors have turned to multilateral agencies or export credit agencies to shoulder some or all of this burden.
Regulatory Risk	Consents required from government authorities or an independent regulatory agency are not obtained or result in additional costs.	Government – particular in the case where prices are not adjusted as per agreement
Resource risk (i n c l u d i n g climate change)	The resource (water, steam, gas, etc) for the project are not available.	Resource risk must be shared or borne by the host utility or government, depending on the Agreement. It could also be borne by the project developers / owners.

Source: Adapted from COMESA POWER PURCHASE AGREEMENT GUIDELINES, 2016

Risk assessment analyses the risk exposure to increases in costs for the all the parties under the PPA/PSAs. The ERB adopts the balancing perspective to allocate the risk to the party that bears the best ability to manage it.

It is noted that while the PPAs govern the sale and purchase of power there are, usually, a host of other Contracts that interplay and relate to the financing, building and operation of the power plants. It is important that the contracting parties ensure that these agreements are aligned with the PPA to ensure apportionment of risks. In this respect, parties must specifically ensure that the duration of the PPA is synchronized with the life of the loan to ensure that the tariffs are stable and the loan is repaid before the PPA expires.

6.1 Insurance

Typically, the kind of insurance that is experienced under the PPA/PSA framework are construction and operational period related. Construction related insurance includes such things as delay in start-up, environmental liability, public liability and commercial crime. Operational insurance include such things as machine breakdowns, replacement costs, escalations and business interruptions. It is a regulatory requirement that the Agreements include provisions for insurance cover for both seller and off-taker, at their respective expenses, for commercial general liabilities.

7. TECHNICAL REGULATORY REVIEW

The ERB undertakes regulatory review to ensure that the PPA/PSA adheres to the codes and standards in Zambia. The technical review of the PPA aims to ensure that the parties operate, maintain and develop the electricity system that is safe, reliable and efficient. The technical review looks at the technical configuration of the project. The following issues should be considered:

Table 6: Technical Regulatory Requirements

No	Technical Requirement	Description
1	Project details	size, location, primary energy source, key project characteristics
2	Technology proposed	Technology should be internationally acceptable and tried and tested. It should not be obsolete
3	Least cost options	project should consider least cost options of available resources and technology
4	Plant configuration	Will it be a base load or peaking plant
5	Plant capacity/ capacity contracted	PPA should clearly the Plant rating, capacity factors, capacity contracted etc.
6	Power Quality Monitoring	Parties should agree at the point of common coupling to monitor power issues in accordance with the provision of powers quality standards (ZS 387)
7	Grid Code/Distribution Grid Code	Configuration of the project should be compliant with provisions of the Zambian grid code and the PPA/PSA should state this
8	Firm or Non-firm Energy	Type of energy should be indicated as firm or non-firm energy

No	Technical Requirement	Description
9	Metering & billing	Should conform to the Metering Standard ZS647. The meters should be at a point/s of common coupling as stated in the standard
10	Environmental Impact Assessment	if the project is new or being modified, extended etc, an approved EIA from Zambia Environmental Management Agency (ZEMA) should be submitted by the applicant
11	Project description	Technical description of the project and drawings should be provided
12	Dispatch and electricity flow	the flow or path of electricity should be stated. if power causes congestion, measures should be taken to minimize the congestion
13	Feasibility study of the project	applicability and feasibility of the proposed technology, technical parameters and efficiency levels proposed
14	Project implementation schedule	indicate commencement and commissioning dates of the project
15	Operation and Maintenance	There should be clarity on the party that will be responsible for the operation and maintenance of the infrastructure or apportionment of the part of the infrastructure to be maintained by either parties.
16	Connection Agreements	The parties should agree the delivery point
17	Other technical issues	Other additional technical information that the parties deem helpful to the ERB

Before the ERB grants regulatory approval of any PPAs, it is a requirement that the project company and the off-taker shall have reached agreement on which party shall be responsible for the construction of the transmission line as well as ownership and operation of the line.

Where the project company constructs the transmission line, the contracting parties shall, as part of the Agreement clearly state the applicable transmission tariff separate from the generation tariff. The determination and approval of the tariffs is based on Revenue Requirements Methodology.

8. REGULATORY REVIEW WORK FLOW PROCESS CHART

To trigger the Regulatory Review, the Applicant will be required to submit the following:

- i. Hard copy of the PPA,
- ii. Soft copy of the PPA and
- iii. Unlocked excel based financial model used in computing the tariffs.

Note that the ERB does not participate in the Contracting parties' negotiation of the terms of the Agreements. Once the PPA has been fully negotiated and **initialed**, but before execution, the seller is required to formally submit the PPA to the ERB for review and grant of consent to execute the PPA.

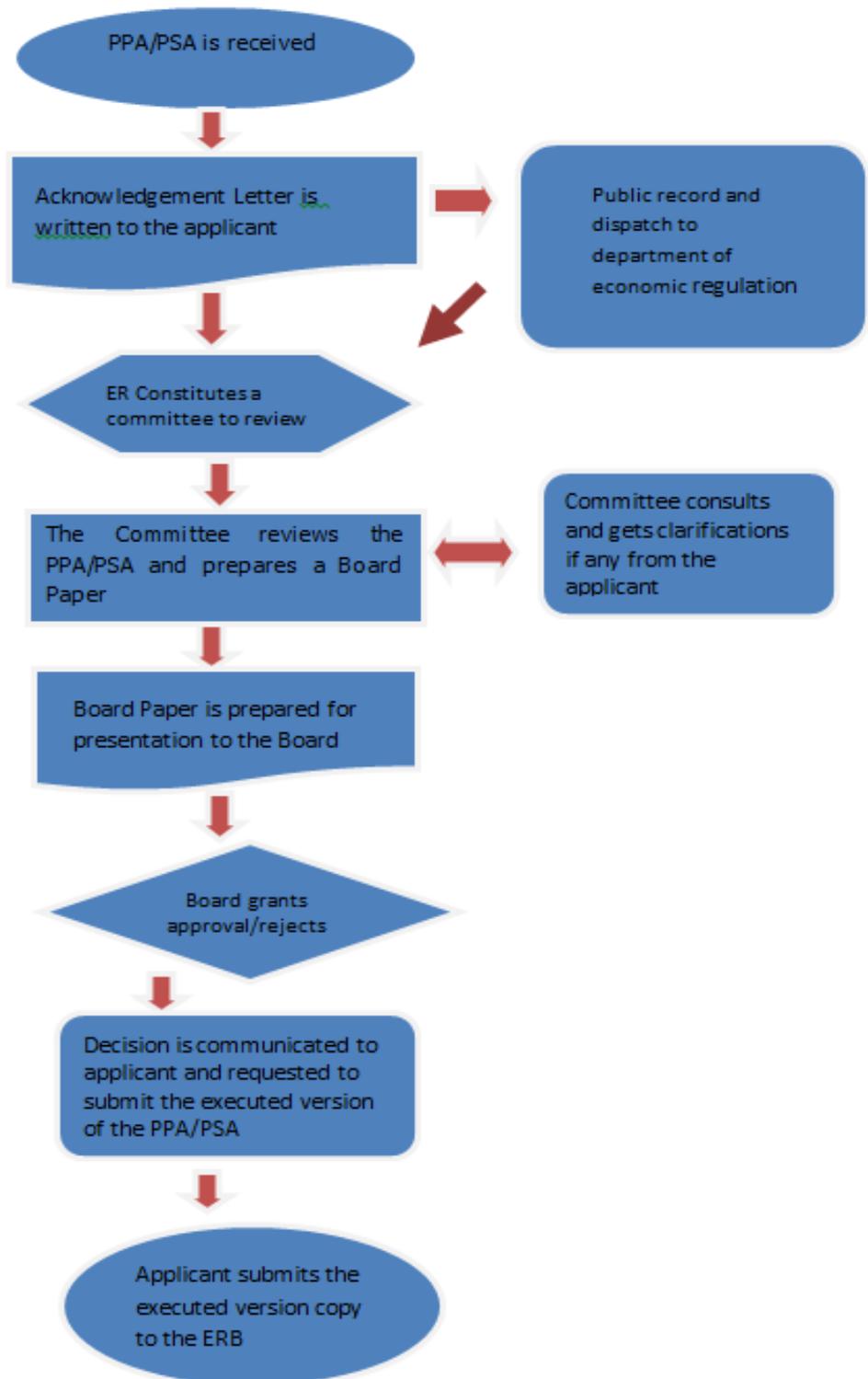
The Applicant will be required to vouch by means of a declaration in writing for the accuracy and completeness of the information submitted. In the declaration the Purchaser will also be required to vouch that the terms of the Agreement including the tariff were negotiated in good faith and that it can afford the purchase obligations under the Agreement.

The ERB encourages the submission of the application for regulatory consent of the Agreement so as to ensure timely review. As a guide, the application shall be submitted at least **4 months** in all cases before the intended effective commercial operation date.

PPAs/PSAs require the ERB's review within the shortest period of time as they impact on the timely and smooth execution of power trading, ensuring security of supply as well as the smooth implementation of projects. In some instances, the agreements are required by the parties in order to reach financial closure on funding for the project (generation projects especially).

The ERB will endeavor to undertake and complete the internal PPA/PSA review process within (thirty) 30 work days as illustrated in figure 1. This process will then result in a Board Paper that will be presented for consideration at the next sitting of the Board of the ERB.

Figure 1: PPA/PSA review work flow process chart



9. ERB - ENGAGEMENT WITH APPLICANT

The observations and findings highlighted during the review will be communicated to the Applicant within 10 working days of the application. The Applicant will be given 5 working days in which to provide clarifications or further information as the case maybe. After the clarifications have or have not been made, a Board paper will be drafted and finalized with appropriate recommendations on whether regulatory consent should be granted or not. The approval will be granted on the basis of what will be known at that material time.

As it is not the intention of the ERB to micro-manage the licencees, it is the responsibility of the licensed entity to ensure inclusion of all material provisions in the PPA. The ERB Guidelines provide the minimum requirements that will form the basis of the regulatory review and the grant of Regulatory Consent.

10. BOARD DECISION AND COMMUNICATION

The ERB Board will make a decision on the review of the application within a period of four (4) Months at the most from date of formal receipt of such application and applicant will be informed of the Decision in writing within 14 days of the Board Decision. The four months period is with respect to the board meetings which take place every quarter.