

OPEN ACCESS MARKET STRUCTURE and Transmission Pricing – A case for Zambia



By: Alfred Mwila | Director Economic Regulation
Chairperson – Technical Committee

Presentation to the ECB - SAPP-Namibia conference
28th August, 2023

Background

Towards an Open Access Regime

- The Zambian **Energy Policy and Energy Act of 2019** makes provisions for establishing an Open Access Regime to make the power sector more responsive to the energy needs of the country.

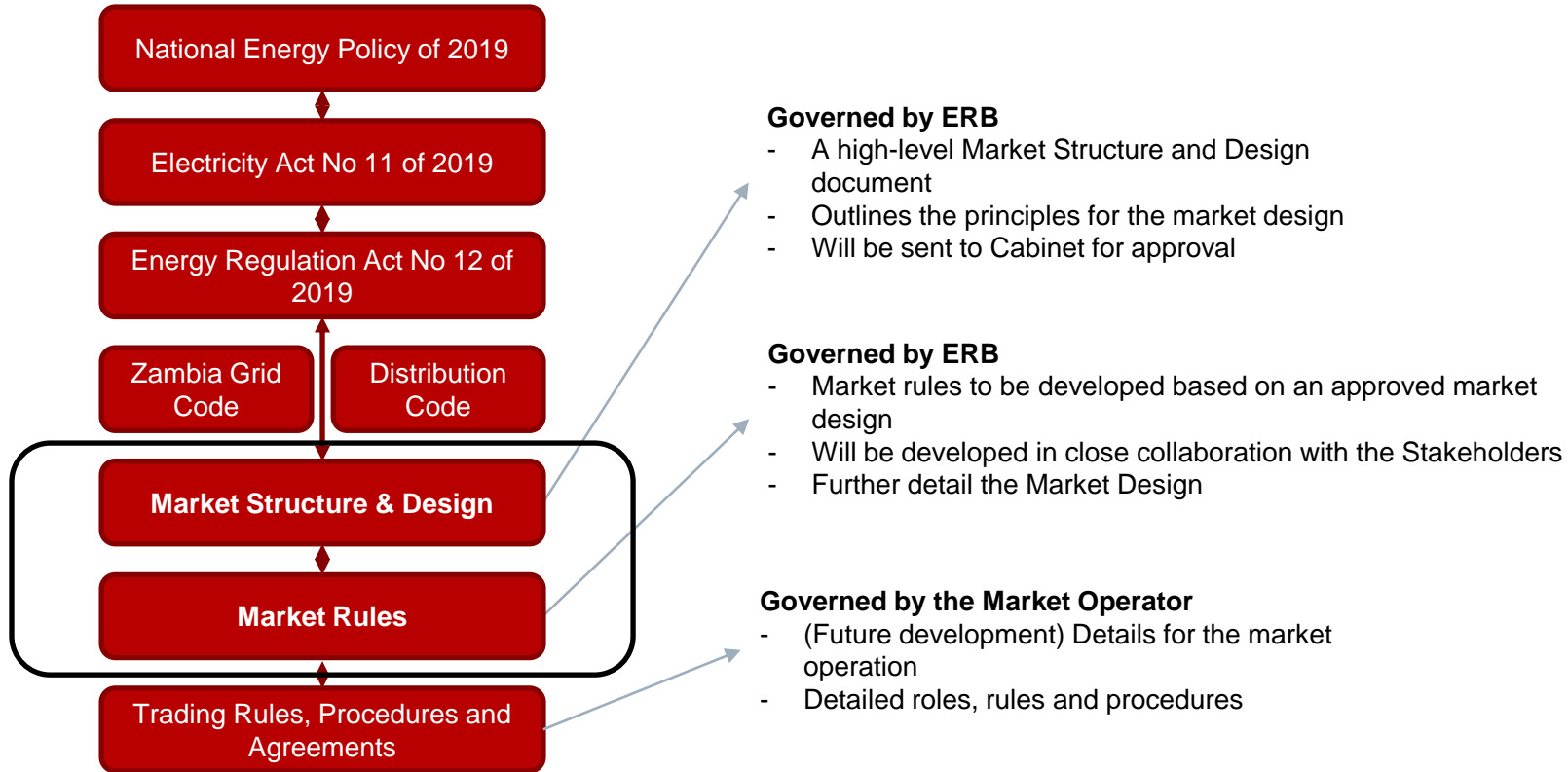
- Open access T&D infrastructure will give third parties access to grid** to allow for power trading without ZESCO serving as the off-taker.

- Included is the **Transmission & Distribution Pricing Framework that will support the proposed market design** – i.e outlining a pricing methodology for wheeling of power.

- Application:** The proposed methodology should be applicable to all transactions, including those between utilities and their customers.

Why Open Access, Objectives and Outcomes

- Existence of barriers to trade in electricity.
- Dominance of ZESCO as the default off taker and owning most of the infrastructure (Generation, Transmission, Distribution & supply).
- Limited private sector participation.
- Lack of diversity in generation mix.
- Inadequate Regulatory Frameworks.
- Lack of transparency and independence in Market and System operation.
- Limited grid VRES integration capacity.
- Financial sustainability challenges.



High level market design objectives and outcomes

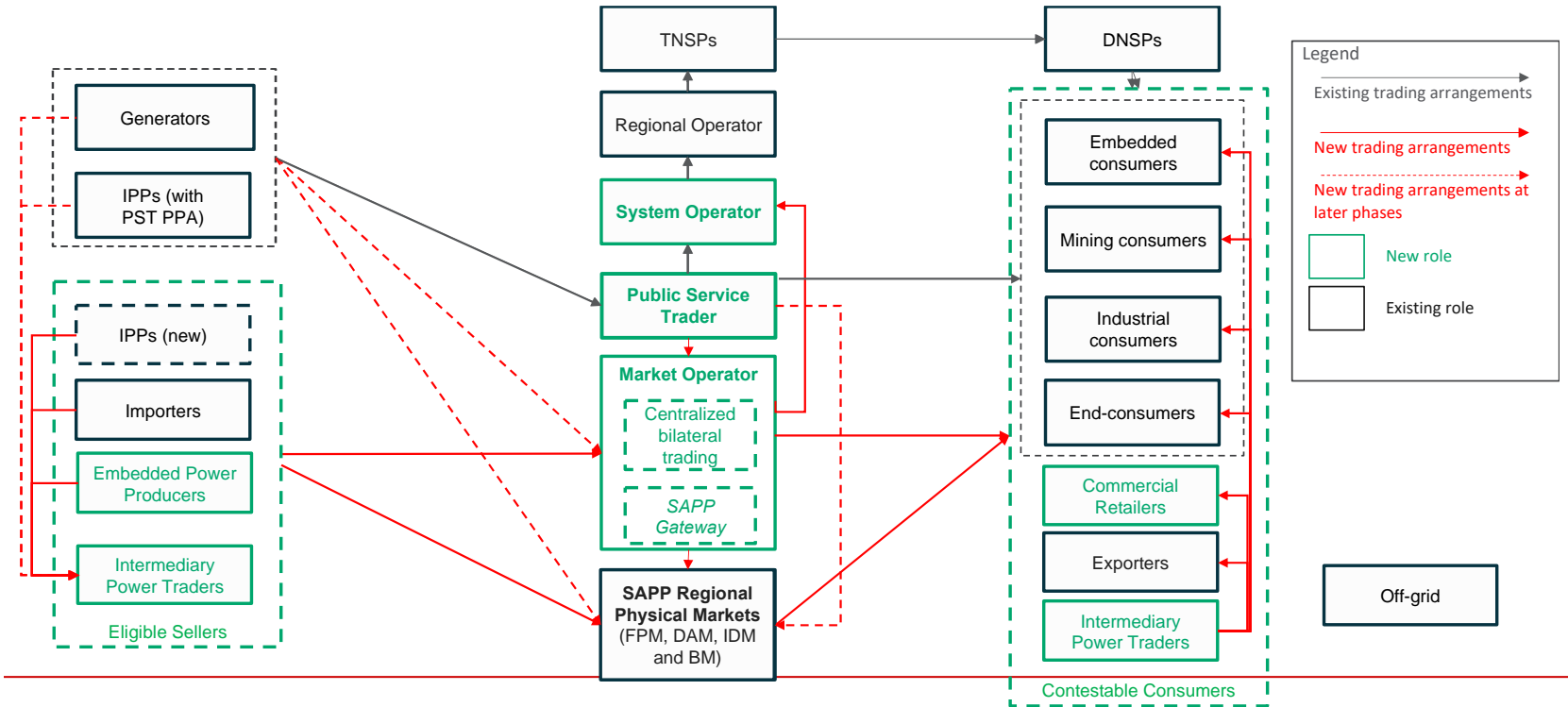
- Existence of barriers to trade in electricity.
- Dominance of ZESCO as the default off taker and owning most of the infrastructure (Generation, Transmission, Distribution & supply).
- Limited private sector participation.
- Lack of diversity in generation mix.
- Inadequate Regulatory Frameworks.
- Lack of transparency and independence in Market and System operation.
- Limited grid VRES integration capacity.
- Financial sustainability challenges.

Approach: Phased Opening of Market

Phase	Market structure	Market Opening	Markets & Products
<i>Phase 1</i>	Independence of the System Operator role Unbundling of ZESCO SO	1 st level of mandatory participation	<ul style="list-style-type: none"> • Bilateral agreements between ES and CC • Access to all SAPP regional markets for ES and CC • Study on OTC market
<i>Phase 2</i>		2 nd level of mandatory participation	Potential implementation of the OTC market
<i>Phase 3</i>		3 rd level of mandatory participation	

Proposed Market Structure in Zambia – Market arrangements

Trading arrangements – generic roles (changes in RED and Green)



Proposed Transmission and Distribution pricing

Objective

To support a more sustainable, efficient and equitable utilization of Zambia's open access transmission and distribution networks.

Regulatory Principles

- Allocative Efficiency
- Sustainability
- Equity
- Transparency, Non-Discrimination and Predictability
- Simplicity and Ease of Implementation

KEY STEPS : IN THE PROPOSED T&D PRICING FOR ZAMBIA

- Determine **revenue requirements** of service providers, as well as the tariff structure
- Establish **applicable charges**
- Determine **pricing methodology** for each charges
- **Allocate Charges** to market participants, ES and CC.

ILLUSTRATION OF ALLOCATION OF CHARGES

Transmission

Charge	EG	CC	Pricing Methodology	Cost driver
Tx Connection Charge	✓	✓	Contract Path (with LRMC)	Transaction Specific
Tx Average Losses Charge		✓	Postage Stamp	Volume (ZMW/kWh)
Tx Marginal Losses Charge		✓	Transaction Specific	Transaction Specific
Tx Network Charge		✓*	Postage Stamp	Peak demand (ZMW/kVA/mo)
Tx Service Charge	✓**	✓	Postage Stamp	Fixed (ZMW/month)
Tx Reliability Charge		✓	Postage Stamp	Volume (ZMW/kWh)
Tx Balancing Charge	✓***		Postage Stamp	Volume (ZMW/kWh)

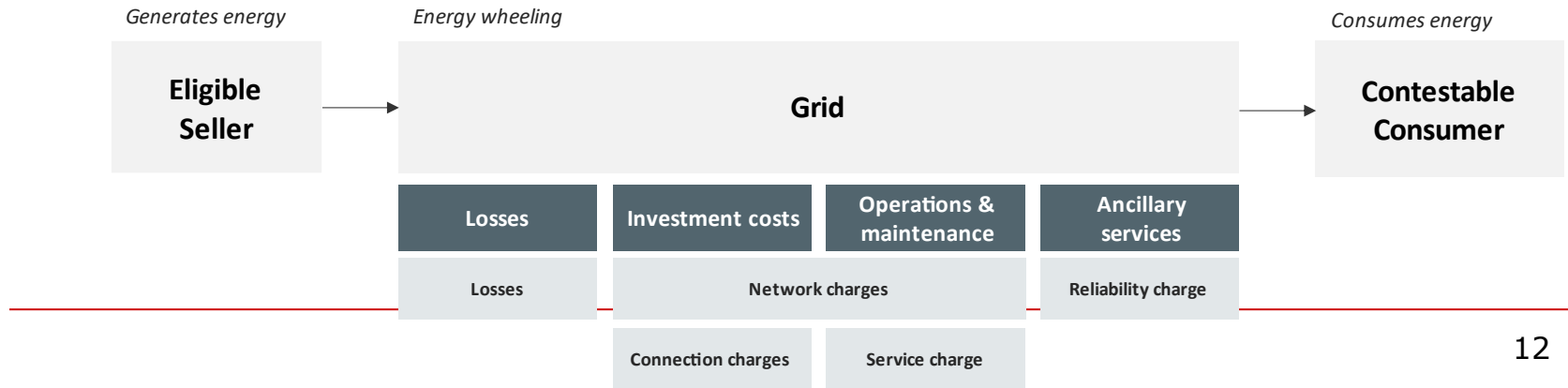
Distribution

Charge	EG	C C	Pricing Methodology	Cost driver
Dx Connection Charge	✓	✓	Contract Path (with LRMC)	Transaction Specific
Dx Average Losses Charge		✓	Postage Stamp	Volume (ZMW/kWh)
Dx Marginal Losses Charge		✓	Transaction Specific	Transaction Specific
Dx Network Charge		✓	Postage Stamp	Volume (ZMW/kWh)
Dx Service Charge	✓**	✓	Postage Stamp	Fixed (ZMW/month)

- * The network charge does not apply if the contestable customer is an exporter.
- ** The service charge does not apply to the EG if it is embedded at the CC.
- *** Does not apply if the Contestable Customer is an exporter. In that case, balancing is done in accordance with SAPP market rules. This has to be verified after the SAPP discussion.

Basics of T and D pricing: Unbundling of T&D Tariffs and Charges

- A bilateral transaction for use of grid infrastructure to transport electricity from the generator to the customer.
- These grid services are associated with costs (losses, investment costs, O&M, ancillary services) that need to be recovered by the service provider(s) for sustainability.



Immediate Policy and Administrative Actions Required

1. Legal Separation of System Operator
 - Cabinet Approval
 - Appoint Board, management, secondment of staff etc

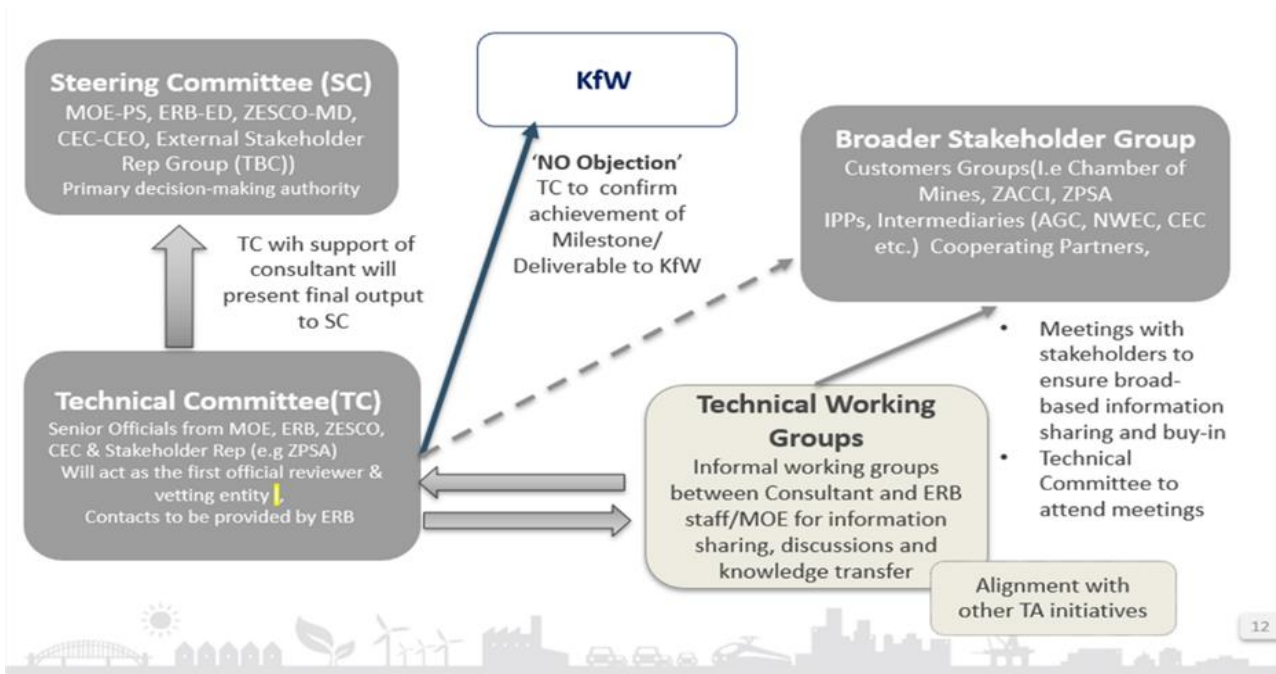
2. Introduction of Market Operator
 - Cabinet Approval
 - Creation of MO License by ERB
 - To be co-located with SO and called (ISMO)

3. Introduction of Public Service Trader (PST)
 - Creation and ring-fence business unit within ZESCO (ZESCO Board Resolution)

Other Policy and Administrative Actions Required

1. Introduction of “Eligible Seller” and “Contestable Consumer” by ERB via Market Rules criteria and appropriate licensing conditions
2. Ring-fencing core business units in Licensed utilities to be enforced by ERB via licensing conditions

Governance of the Process





Thank You for Your Attention!
