WHOLESALE ELECTRICITY PRICING METHODOLOGY CONSULTATION PAPER

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Issued by

The National Energy Regulator of South Africa

526 Madiba Street

Arcadia, Pretoria

0007

Contact Details:

Tel: +27 (0)12 401 4600

Fax: +27 (0)12 401 4700

www.nersa.org.za

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1. Introduction

The Wholesale Electricity Pricing Framework provides a transparent, regulated approach for determining the charges that make up the wholesale cost of electricity supply. It ensures that essential and unavoidable system costs – such as transmission services, capacity requirements, legacy contract obligations, and subsidies – are recovered fairly from all market participants. By creating consistent pricing principles, rules and aligning regulated charges with emerging competitive market structures, the framework supports South Africa's transition to the South African Wholesale Energy Market (SAWEM) while maintaining system stability, cost-reflectivity and financial sustainability.

2. Purpose

2.1 The purpose of the Wholesale Electricity Price Framework is to establish a transparent and regulated wholesale pricing structure that:

(i) enables the effective operation of the future wholesale electricity market (SAWEM);

(ii) ensures recovery of regulated and unavoidable system costs; and

(iii) provides a clear and consistent transitional interface between regulated components and emerging market-based elements in the early stages of the market liberalisation.

2.2 In addition, given the transitional context, the framework is intended to support the shift from a vertically integrated system towards a more competitive market structure over time. This methodology is not only a pricing tool but also a key enabler of broader market reform.

2.3 The Wholesale Electricity Price Methodology sets out the structure of charges applicable to market participants, including Balance Responsible Parties (BRPs), licensed distributors procuring electricity in the wholesale market and users of the transmission system, including both generators and loads. These wholesale charges will be regulated and subject to approval by NERSA, particularly where they relate to monopoly services (such as Use-of-System Charges - TOUS, connection charges, transmission network expansion and maintenance) or represent unavoidable costs within the wholesale market.

2.4 Applications for wholesale electricity tariffs submitted to NERSA will follow the NERSA-approved Wholesale Price Structure Methodology and associated Wholesale Pricing Rule, in line with section 4(a)(ii) of the Electricity Regulation Act (as amended) ('the ERA'), which requires that the Energy Regulator must set and approve prices and tariffs in accordance with a rule. The resulting wholesale price structure will reflect NERSA-approved revenue requirements and align with the cost drivers of the underlying services.

2.5 Even where increases in wholesale electricity prices are allowed by NERSA to be included in retail prices, these are not the final prices that customers pay. The final price for electricity or network services is set by licensed distributors.

2.6 This document does not address the methodology for revenue determination. Instead, it focuses on wholesale price build-up and subsequent structure of wholesale pricing and the process for obtaining regulatory approval from NERSA. Subsequent to the electricity pricing review, the underlying price of tariff determination for the relevant licensed activities may serve as the basis for wholesale price applications, in accordance with the applicable regulatory methodology. Furthermore, this document does not cover the design or approval of retail tariffs.

2.7 The Wholesale Price Framework is intended to be implemented at the commencement of the South African Wholesale Energy Market (SAWEM), covering all regulated and market-related charges required during the transition period and beyond. This document will be the basis from which the wholesale price rules will be developed.

3. Legal and Regulatory Basis

3.1 The mandate of the National Energy Regulator of South Africa ("NERSA") to develop a wholesale electricity pricing methodology derives from a combination of constitutional, statutory, and policy instruments governing the South African electricity supply industry. The mandate is both regulatory and economic in nature, aimed at ensuring that electricity tariffs are fair, transparent, cost-reflective, non-discriminatory, and supportive of an efficient electricity market.

3.2 The principal legal authority arises from the Electricity Regulation Act 4 of 2006 ("ERA"). Section 4(a)(ii) empowers NERSA to regulate prices and tariffs. This provision gives NERSA the express authority to determine methodologies used to regulate wholesale electricity prices. Wholesale pricing methodologies are a necessary regulatory instrument through which NERSA performs this statutory duty.

3.3 Section 15 is the central empowering provision. NERSA must enable an efficient licensee to recover the full cost of its licensed activities, including a reasonable margin or return. This creates the legal basis for cost-of-service methodologies, revenue requirement models, and wholesale energy pricing frameworks. Furthermore, a licensee may not charge a tariff other than that approved or determined by NERSA. These statutory criteria directly shape the content of any wholesale pricing methodology.

3.4 NERSA's mandate extends beyond retail tariffs into the structure of the electricity market itself. A wholesale pricing methodology becomes necessary where

electricity is traded between generators and distributors, transmission services are unbundled, wheeling occurs, ancillary services are procured, balancing markets operate, or vesting contracts allocate legacy generation output.

3.5 The development of a wholesale electricity pricing methodology is therefore integral to the operation of the future competitive market, third-party grid access, open access principles, and electricity trading arrangements under the evolving market code. The development of a wholesale electricity pricing methodology is therefore integral to the operation of the future competitive market, third-party grid access, open access principles and electricity trading arrangements under the evolving market code. Any methodology developed by NERSA must satisfy constitutional principles of legality, rationality, transparency, procedural fairness, and cost reflectivity.

4. Definitions and Abbreviations

Definitions

4.1 Definitions not included in this document shall be as defined in the Electricity Regulation Amendment Act, the Electricity Pricing Policy (EPP), the Market Code, the SA Grid Codes and/or the Distribution Codes.

Term	Definition
Generation Capacity Charge	Means the charge raised by NTCSA to downstream Market Participants and Balance Responsible Parties.
Generation Capacity Payment	The payment by the NTCSA to generators that provide capacity.
Hedge	A hedge is a contractual or financial arrangement used by market participants to reduce exposure to volatility in electricity prices by locking in, or stabilising, the price of energy over a defined period
Legacy Charge	Means the charge raised to downstream Market Participants and Balance Responsible Parties to cover the difference between the System Marginal Price and the hedge in the Legacy Contracts and the Vesting Contracts.
Legacy Contracts	Means the contracts for the procurement of energy by the CPA from generators established under the ERA Section 34 determinations.
Licensed Distributor	Means a Distributor that is licensed to act as a distribution network service provider and a Regulated Retailer.
Losses Charge	The charge to cover the cost of Technical Losses.
Market Code	Means the Market Code and all its appendices
Market Participant	Means a Party that participates in the Day-Ahead and Intra-Day Markets in the South African Wholesale Energy Market and is a Balance Responsible Party for trades undertaken on these platforms

Term	Definition
Maximum Export Capacity	Means the maximum capacity at the point(s) of supply notified by a generator for the transmission of electrical energy between a generator and the Transmission System.
Reliability Services	Means the services provided by the System Operator to ensure the short-term reliability of the power system.
Retail Tariffs	Means the charges to customers and the tariffs charged by the Distribution Network Service provider.
Regulated Retailers	Means licensed Traders purchasing and selling electricity to customers and whose tariffs are fully regulated by NERSA.
System Marginal Price	Means the price for energy determined by the price of the marginal unit scheduled to run in the Unconstrained Schedule in a scheduling period in SAWEM.
Technical Losses	Means the loss of energy within the networks as a natural consequence of transporting energy because of the characteristics of the physical equipment usually associated with dissipation.
Trader	Means a person who trades in electricity.
Trading	Means the wholesale or retail buying and selling of electricity and Trade has a corresponding meaning.
Transition Period	Means the period starting on the Commencement Date and continuing to a date as determined by NERSA following a market assessment.
Transmission Network Service Provider	Means the Transmission Licensee licensed to operate and provide Transmission services.
Transmission Power System	Means a network for the conveyance of electricity which operates above a nominal voltage of 132kV including assets that are approved by the Regulator to be part of the transmission power system.
Use-of-System Charges	Means the unbundled regulated tariffs charged for the use of the Transmission Power System.
Utilised Capacity	Means the higher of the contracted notified maximum demand or the maximum demand (highest demand in a month), per point of delivery measured in kVA over a rolling 12-month period, registered by a load on the Transmission Power System.
Vesting Contract	Means a contract or other financial arrangement between the National Transmission Company of South Africa SOC Ltd through CPA, (or Transmission System Operator SOC Ltd once established) and an Eskom generator or a Distribution licensee, as the case requires, for the sale of a specified amount of electricity at a price determined by the Regulator as a mechanism to facilitate the transition to a competitive market.
Wholesale	Means the Trading of electricity between generators, retailers, or Traders.
Wholesale Price for Energy	Price paid by market participants for each unit of electricity generated by.
Wholesale Tariff	Means the regulated tariff approved by NERSA for wholesale Energy and related services.

Term	Definition

Abbreviations

DEE	Department of Energy and Electricity
EPP	The Electricity Pricing Policy administered by the DEE
ERA	Electricity Regulation Act as amended
CPA	Central Purchasing Agency
NERSA	National Energy Regulator of South Africa
NTCSA	National Transmission Company of South Africa
SAWEM	South African Wholesale Energy Market
TOU	Time of Use
TUOS	Transmission Use-of-System charges

5. Applicability of the Methodology

5.1 This methodology shall apply to the determination of the Wholesale Tariff for the SAWEM for the duration of the MYPD6 period or until replaced by new methodologies determined by NERSA.

6. Market Structure

6.1 The wholesale electricity market is undergoing a structural transition from the existing single-buyer model to a multi-buyer framework that enables licensed generators, traders, and distributors, as well as eligible consumers, to engage directly in wholesale energy transactions. This reform is intended to align the market with the requirements of the Electricity Regulation Act, 2006, as amended, and to promote competitive market participation, ensure non-discriminatory access to the transmission network, and support the establishment of the South African Wholesale Energy Market (SAWEM).

6.2 The 1998 White Paper on Energy Policy outlined the government's vision for the energy sector. It included the vertical and horizontal unbundling of the electricity supply industry, separating competitive and natural monopoly components, introducing competition, ensuring non-discrimination, enabling open access to transmission, and establishing independent regulation. The Energy Policy identified an independent transmission entity as a necessary step. The 2019 Eskom Roadmap also envisaged market design with the unbundling of Eskom. The Eskom Roadmap for the restructuring and unbundling of the electricity supply industry aims to transition South Africa from a vertically integrated monopoly utility to a competitive and transparent electricity market.

6.3 The Energy Action Plan, announced by President Ramaphosa in July 2022, highlighted the need to reform the energy sector for long-term energy security in South Africa and measures to address supply shortages, restructuring of Eskom and establishing a competitive energy market.

6.4 This led to changes in the Electricity Regulation Act, 2006, establishing an independent state-owned Transmission System Operator and providing for the creation of a competitive electricity market.

6.5 The amended ERA outlines the process and high-level inclusions in the Market Code, to be developed by the market operator, and submitted to NERSA for approval. The Market Code also sets out the parameters of the market structure.

6.6 The transition to a competitive market model will be based on a stepwise implementation of various market segments, as well as a phased introduction of participants to the South African power market. The processes required within an electricity market are shown below:

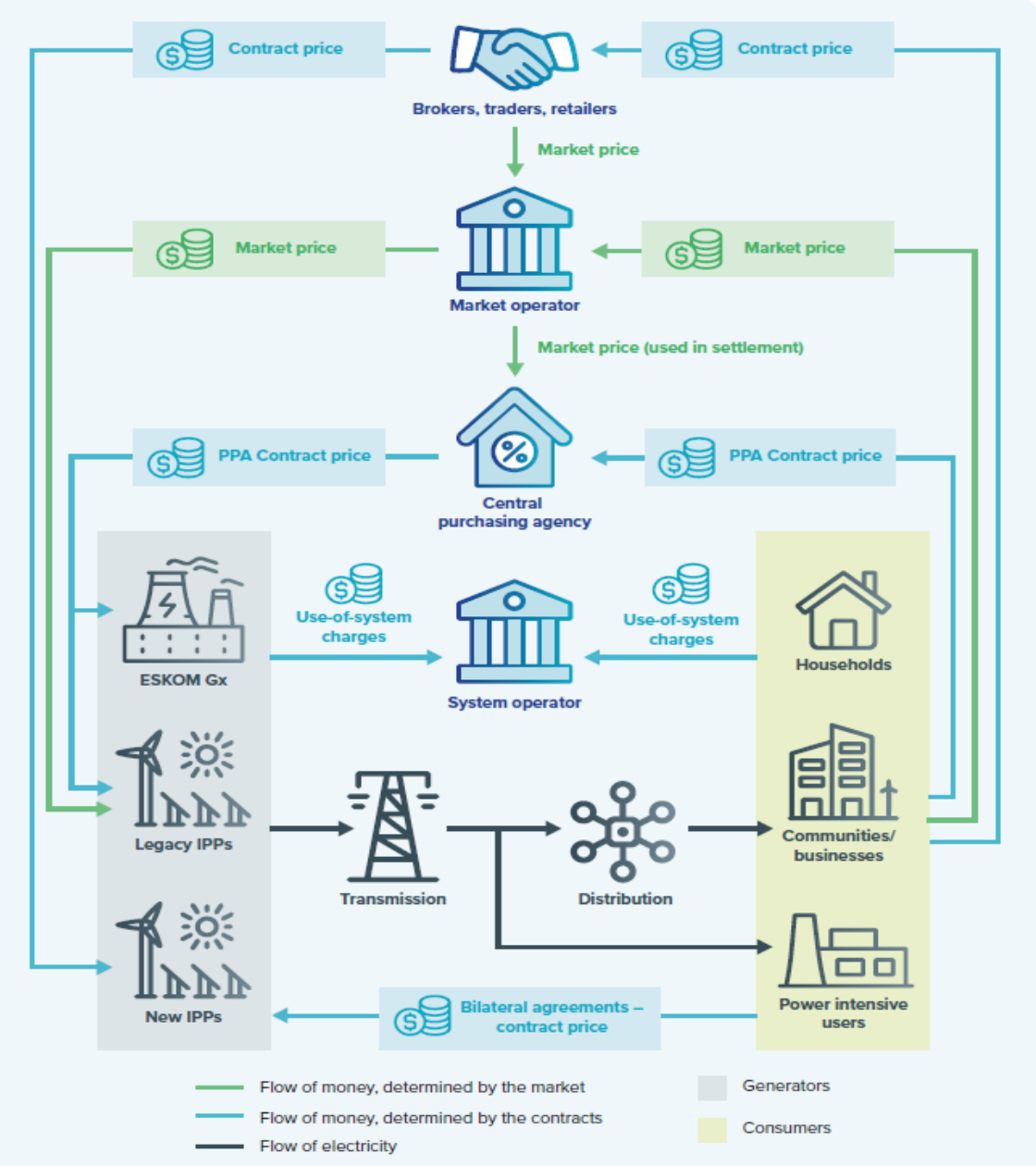

Figure 1: Participants in the South African Electricity Supply Industry in a Competitive Market

6.7 The wholesale price deals with certain aspects of the market that relate to regulated charges. These are specified further below.

Role of the Central Purchasing Agency

6.8 In addition to the market platforms introduced by the Market Operator, a market support entity called the Central Purchasing Agency (CPA) will fulfil the role of counterpart to the state-procured contracts and vesting contracts as necessary to facilitate the transition to a competitive market, as well as manage non-market agreements or services to enhance the functionality of the market.

6.9 The CPA within the NTCSA will perform these support functions, with activities including the following:

- Concluding Power Purchase Agreements (PPAs) with Eskom Generation power stations through Vesting Contracts
- Becoming the counterpart to existing PPAs with Section 34 independent power producers or any other procurement as mandated by Section 34 of the ERA decision through legacy contracts
- Trading all energy purchased under legacy REIPP PPAs into the Day Ahead Market (DAM)
- Concluding sales agreements with distributors (Vesting Contracts)
- Procuring the ancillary services and capacity from Eskom generators, as required by the System Operator.

6.10 The CPA will hold the legacy PPAs (with the Renewable Energy IPP Programme as well as other Section 34 IPP programmes) and the Vesting Contracts with Eskom Generators and Eskom Distribution's retail trading division. The CPA must sell and buy this energy through the competitive market and settle the difference through the legacy charge.

6.11 Vesting Contracts will be used to manage the transition to full competition in electricity and manage the financial risk of market participants and shall be valid during the transition period. The transition period is the period before a fully competitive market, during which certain participants will be allowed by NERSA to hedge against the market price through Vesting Contracts.

6.12 The Central Purchasing Agency (CPA) operates as an intermediary between the market and key participants, including generators and buyers. The magnitude of any shortfall or surplus experienced by the CPA on a monthly or annual basis is largely driven by the prevailing prices in the day-ahead energy market.

6.13 When the market price exceeds the agreed-on contract or vesting price, CPA's financial position improves, resulting in a reduced shortfall or the creation of a surplus.

Conversely, when the market price is lower than the agreed price, the CPA experiences an increased shortfall or a reduction in any surplus. Any resulting imbalance is addressed through the application of a legacy charge.

6.14 The Vesting Contracts shall be valid during a transition period, widely anticipated to be between 5 and 10 years; however, they will be subject to NERSA approval in terms of contract prices and duration and subsequent oversight – all clearly mandated in the amended ERA, 2006.

Legacy Contracts

6.15 Legacy contracts are established for the procurement of energy and capacity by the NTCSA-CPA from generators as procured under the ERA Section 34 determinations. The CPA will take over the role of counterparty to existing PPA's established under section 34 and will participate as a balance responsible party in the market for the electricity produced under these agreements.

Vesting Contracts with Eskom Generation

6.16 The CPA will serve as the financial counterpart for electricity generated by Eskom Generation through the Generation Vesting Contracts per Power Station. The Vesting Contracts and the tariffs in these contracts (to be paid to Eskom Generation) shall be subject to NERSA approval and oversight. The Wholesale Price structure does not address the underlying revenue or tariff structure or approved strike price in the Vesting Contracts; it is the mechanism to build up the relevant components from various tariffs and use of system charges to achieve a universal wholesale price.

Vesting Contracts with Qualifying Distributors

6.17 Eskom Distribution and any licensed distributor applying for market participation shall conclude a Vesting Contract with the CPA during the transition period. The Vesting Contracts shall be subject to NERSA approval and oversight and shall contain:

a) energy hedge payments to manage the price risk for the distributor during the transition; and
b) some elements of wholesale pricing as required by NERSA, including, but not limited to, generation capacity charges, legacy charges and subsidy charges.

6.18 Any Licensed Distributor's wholesale or retail trading arm or division that applies for market participation during the Transition Period shall conclude a Vesting Contract with the Central Purchasing Agency before market participation. The Wholesale tariff for energy shall inform the price against which the hedge will be based. The hedge will protect participants against market price volatility.

7. The Relationship between the Wholesale Price and Retail Tariffs

The Wholesale Price

7.1 The costs arising from participation in SAWEM include contractual arrangements, such as CPA Vesting Contracts, Legacy Contracts or physical or financial bilateral contracts, use of the transmission network, and the statutory and social obligation charges (Cross-subsidy/social charges, environmental taxes) must ultimately be allocated and recovered through regulated charges and non-regulated market settlements.

7.2 The Wholesale tariff may evolve from a single annually approved price to one that will change more periodically due to legacy contracts, hedging, ancillary service costs, and evolving exposure to competitive markets, but there will continue to be a regulated approach to allocating and passing through real costs.

7.3 These wholesale charges include both market-related and non-market charges, reflecting the full range of services and obligations associated with purchasing energy and use of transmission services.

Market-related charges will include the following, which will not form part of the Wholesale Tariff:

- Energy in the Day-Ahead Market (DAM) and Intra-Day Markets
- Balancing mechanism charges
- Credit and collateral
- Market Operator (MO) charges
- Bad debt recovery.

Non-market costs that will be recovered in the Wholesale Price include:

- Capacity charges
- Energy price hedges under Vesting Contracts
- Network charges
- Legacy charges
- Social or cross-subsidy charges.

7.4 The total Wholesale cost, therefore, extends beyond the energy price in the day-ahead market and reflects the full set of financial obligations required to ensure secure, reliable, equitable and sustainable electricity delivery in South Africa. These costs must be efficient, and reasonable risk adjusted return allowed costs considered by the Regulator when setting or approving any tariff or price.

Retail Tariffs

7.5 Retail electricity prices will be based on the Wholesale tariff structure and charges, with added costs for the Distribution network, retail trading of power, cross-subsidies (not recovered in the Wholesale Price) and administrative services. The distribution and retail tariffs will be separately submitted to NERSA, as ringfenced costs for each licensed activity, for a tariff decision in terms of a prevailing NERSA methodology. This document does not deal with the determination of distribution or retail tariffs.

7.6 The Wholesale tariff for energy will serve as a reference for licensed distributors when setting their tariffs – i.e., similar to the previous "bulk electricity price" that was used as the transfer price from Eskom to Distributors as the baseline for their tariff applications. It will also act as a form of protection against fluctuations in hourly market prices during the transition period for distributors participating in the market.

7.7 NERSA shall be responsible for testing any revenue shortfall or over-recovery for any Licensed Distributors against NERSA-determined revenue for captive customers and the Distributors' network service customers. The methodology for the setting or approval of retail tariffs under SAWEM is to be developed by NERSA.

7.8 It is proposed that this methodology deals with the following aspects:

During the Transition Period

7.9 Licensed Distributors who also may be regulated Retail Traders would have a Vesting Contract with the CPA, which would use the Wholesale Price for energy as the strike price for the hedging energy consumed on the market. This would be a hedge on full volumes for the first year or for the period determined by NERSA. Any difference not covered by the hedge due to a volume variance from that approved using the prevailing NERSA methodology.

7.10 As the Vesting Contract volumes adjust during the Transition Period, Licensed Distributors whose retail trading divisions are Market Participants (regulated Retail Traders) may be hedged to gradually lower volumes with the CPA. This does mean that regulated Retail Traders may be exposed to market prices. These Retail Traders can then enter other hedges with producers or other Traders. Where Retail Traders are exposed to volume risk outside of their control, the vesting volume must be adjusted where the costs are proven to have been efficiently incurred, and the Energy Regulator allows them to be recovered through the tariff. This is further illustrated in the figure below.

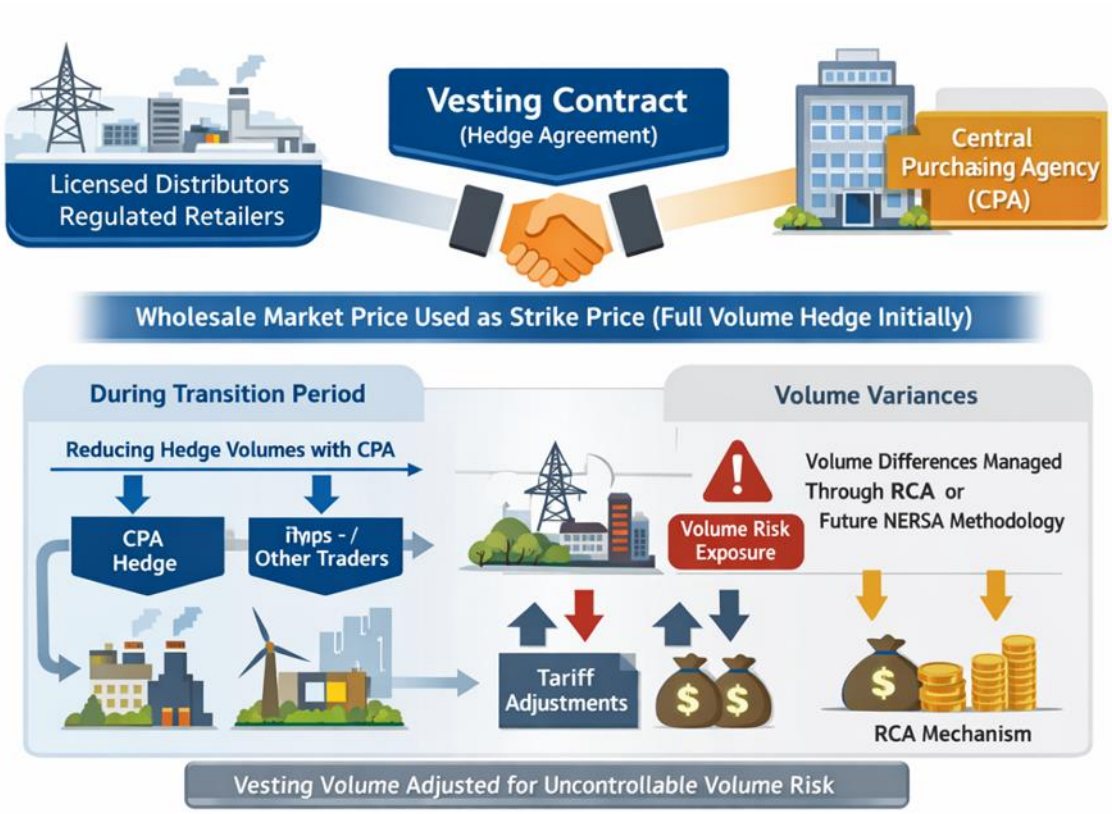

Figure 2: Indicative role of Vesting Contracts to stabilise wholesale prices

After the Transition Period

7.11 The Wholesale Tariff for Energy will continue to be calculated even after the Transition period as an estimation of the year ahead, prudently incurred wholesale costs informed by assumed volumes and assumed SMP and other efficiency benchmarks[1]. The Wholesale Energy Charge will continue to be approved by NERSA.

7.12 As stated above, the Wholesale Energy Charge shall then be included in the retail energy charges. The Regulated Retailer is exposed to shortfalls or surpluses in revenue caused by buying in the SAWEM (including related hedges) and selling at the retail tariffs informed by the benchmark. Such shortfalls shall not be recovered from customers through revenue-clearing mechanisms.

7.13 However, any monopoly-based services, such as network services, shall continue to be fully regulated and managed through a regulatory revenue formula.

[1] Such as capacity utilisation or revenue caps as a counterbalance to the blunt volume risk metric and protect consumers from inefficient licensed activities. The Act requires the Regulator to ensure the interests of consumers are protected taking cognisance of the interests of suppliers, and a more sophisticated set of metrics will need to be employed in this regard. Increasingly.

Question #2

Market Price vs Regulated Charges

a) Do stakeholders believe that the proposed separation between market prices and regulated prices and that this separation will result in efficient and competitive electricity prices as follows:

- competitive market prices (e.g. Day-Ahead Market prices); and
- regulated charges (e.g. capacity, legacy, and subsidy charges under the wholesale pricing framework) market entry requirements for Distributors?

b) Do stakeholders support the requirement that all licenced retail traders must conclude Vesting Contracts with the CPA before participation in the wholesale market?

c) Retail electricity prices will be based on the Wholesale tariff structure and charges, with added costs for the distribution network, retail procurement of power, cross-subsidies (not recovered in the Wholesale Price) and administrative services; if so, how should NERSA's oversight role in approving these retail charges be defined?

d) What is the stakeholder's view on the relationship between retail and wholesale prices?

8. Objectives of the Wholesale Tariff

8.1 The Wholesale tariffs charges shall comprise regulated charges levied on all Market Participants, including Balance Responsible Parties and transmission-connected generators and loads. These charges are designed to recover the costs associated with regulated monopoly services and other non-contestable components of the electricity supply value chain, which should be unavoidable for participation in the wholesale market. As such, they should ensure equitable cost recovery while maintaining transparency, cost-reflectivity and non-discriminatory access across all market participants, assuming the underlying costs have been incurred efficiently.

8.2 Non-contestable elements would include distribution and transmission network charges; System operation services, and Ancillary services.

8.3 The objectives of the Wholesale Tariff Methodology shall be to:

a) recover the NTCSA's efficient costs to deliver its licensed activities as approved by NERSA in the transmission tariffs;

b) introduce a cost-reflective, transparent wholesale Tariff build-up mechanism;

c) promote transparent wholesale regulated charges through an understandable methodology;

d) ensure that all customers connected directly to the Transmission Power System and all participants (including balance responsible parties) do not avoid charges, or escape payment for valid services received, or escape contribution to legacy costs from which 'school fees' all electricity consumers have and are benefiting; and

e) ensure financial viability of transmission as well as all generators established under the ERA Section 34 determinations and ensure grid financial stability through adequate charges.

9. The Wholesale Tariff Methodology

9.1 This Wholesale Tariff Methodology does not deal with the determination of revenue or the Wholesale charges and only deals with the structure of the Wholesale tariff. However, a revenue decision by NERSA for Eskom Generation and the NTCSA will form the basis of the Wholesale Price charges application by the NTCSA until NERSA develops an alternate mechanism.
However, a revenue decision by NERSA for Eskom Generation and the NTCSA will form the basis of the Wholesale Price charges application by the NTCSA until NERSA develops an alternate mechanism.

9.2 NERSA will address the determination of revenue for Licensed Distributors during the Transition Period, including any revenue and volume variances not covered by the hedge, through a separate methodology.

9.3 This Wholesale Price Methodology may be updated by NERSA over time to reflect changes in the electricity sector and regulatory environment, ensuring continued alignment with cost reflectivity, transparency and fairness.

10. Wholesale Tariffs Application to Market Participants and Balance Responsible Parties

10.1 The wholesale tariff will apply to all generators and loads connected to the Transmission network, Downstream Balance Responsible Parties and Downstream Market Participants. The Wholesale tariffs will not apply to the buying or selling of energy at the System Marginal Price in the wholesale energy market or balancing charges. The Transmission Use-of-System Charges shall also apply to cross-border import and export trade.

11. Wholesale Tariff Structure

11.1 The Wholesale Tariff structure will comprise:

Charges payable by regulated Retail Traders that are Market Participants during the Transition period	
Energy charge (R/kWh)	Based on the average cost of generation per TOU period and season

Charges payable by all Market Participants (downstream)	
Generation capacity charge (R/kW/month)	Contribution to generation capacity

Charges payable by all Market Participants and Balance Responsible Parties (downstream)	
Legacy charges (c/kWh)	Recovery of any difference due to competitive market prices that are less than or more than the legacy PPA costs (REIPPP) and legacy cross-border contracts, stranded assets and vesting imbalances. Initially, c/kWh on gross consumption and may later potentially have a fixed demand charge.

Transmission charges payable by loads and generators connected to the Transmission Power System	
Transmission Use-of-System Charges (R/kVA or R/MW)	Payable by all generators and loads
Loss adjustment Factor	Locational charge reflecting Transmission technical losses.
Ancillary service charge (c/kWh)	Payable by all generators and loads
Cross-subsidy charge (c/kWh)	Payment for socio-economic subsidies raised to loads connected to the Transmission Power System

Wholesale Tariff Paid by regulated Retail Traders that are Market Participants

11.2 These charges will be based on the tariffs approved for the NTCSA and shall be submitted by the NTCSA as part of the wholesale tariff application. After the MYPD 6 period, the prevailing methodology will apply after having been considered and approved by NERSA.

Wholesale Tariff for Energy

11.3 The wholesale R/MWh energy charges will be structured on a TOU basis for peak, standard and off-peak and be seasonally differentiated. The charges will apply during the vesting contract period and be based on the upstream generation costs not recovered through the Generation Capacity Charge and the Legacy Charge. After the

vesting contract period, a Wholesale tariff for Energy will still be determined as the reference price for retail energy tariffs.

11.4 The energy charges and structure to be submitted to NERSA will include the time periods, the seasonal periods and the rates.

11.5 Changes to the above must be based on cost signals required by the system operator to manage constrained periods.

11.6 The formula for the calculation of the TOU energy price for electricity is:

A = The revenue to be recovered = The % of generation costs allocated to energy (total cost less expected revenue allocated as a Generation Capacity Charge and Legacy charge, less any other revenue payable to applicable generators).

B = Determine the ratios per TOU period

C = Expected volume per TOU period

D = Multiply B by C per TOU period

E = Sum the result of D to get a total of the ratios

F = Divide A by E

G = Multiply F by the ratio in B – c/kWh values per TOU period

H = volume multiplied by G – revenue per TOU period

Example:

A = Revenue to be allocated = R250B
B = TOU Ratio
C = GWh volumes per TOU period

B	6.00	1.50	1.00	2.49	1.40	1.00	Total
C	8 182GWh	20 594GWh	20 195GWh	23 505GWh	58 485GWh	58 755GWh	189 717GWh

D = Multiply B by C and get a total for E *Total = E*

D	49 092	30 891	20 195	58 527	81 879	58 755	299 339

F = Divide 250b by 299339 X 1000 (in MWh) = 835.16

G = Multiply F by the TOU ratios in B = c/kWh rates per TOU period

G	501.10	125.27	83.52	207.96	116.92	83.52

The sum of the above revenue per TOU period equals the total revenue requirement

H	R41b	R25.8b	R16.87b	R48.88b	R68.38b	R49.07b	Total =R250b

11.7 The revenue or cost to be allocated for Eskom Generation after the MYPD 6 period and during the Transition period on which the Wholesale Energy Price is based, will be determined according to prevailing NERSA methodology. It must be noted that the MYPD relates to revenue or cost determination, while ERTSA relates to cost allocation.

Table 1: Example of Wholesale Tariff Calculation

Period	TOU Ratio	Energy (GWh)	WP (R/kWh)	SMP (R/kWh)	Eligible Energy (GWh)	Total Weighted Energy(B*C)	WP Revenues	SMP Revenue (R)	EHP (R)	Net Position (R)
1	6,00	8 182	5,01	0,90	8 182	49 092	41 000 276	7 363 800	33 636 476	41 000 276
2	1,50	20 594	1,25	0,85	20 594	30 891	25 799 306	17 504 900	8 294 406	25 799 306
3	1,00	20 195	0,84	0,70	20 195	20 195	16 866 303	14 136 500	2 729 803	16 866 303
4	2,49	23 505	2,08	0,95	23 505	58 527	48 880 502	22 329 750	26 550 752	48 880 502
5	1,40	58 485	1,17	0,80	58 485	81 879	68 383 068	46 788 000	21 595 068	68 383 068
6	1,00	58 755	0,84	0,72	58 755	58 755	49 070 545	42 303 600	6 766 945	49 070 545
Total		189 716			189 716	299 339	250 000 000	150 426 550	99 573 450	250 000 000
WP						0,84				

Wholesale Tariff Paid by all Downstream Market Participants

Generation Capacity Charges

Question #4

Wholesale Overall Tariff Design

a) Do stakeholders agree that the proposed wholesale tariff structure:
   - appropriately separates competitive energy pricing from regulated charges;
   - provides efficient price signals; and
   - supports a fair and transparent transition to a competitive market?

b) What risks or unintended consequences do stakeholders foresee in the proposed structure?

c) The Wholesale Tariff Methodology includes an illustrative calculation showing how R250bn in Eskom Generation revenue, as per MYPD 6, can be allocated across TOU periods and seasons to derive a wholesale energy price (Table 1). Do stakeholders agree with this approach, and if not, what alternative methodology or allocation basis would they propose?"

11.8 Generation capacity charges are raised as a cost signal to all Market Participants buying energy through the wholesale market, to ensure generation availability or capacity.

11.9 The revenue risk of any difference between the generation capacity payment to generators and the generation capacity charge paid as part of the Wholesale Price shall be covered by the CPA and may impact the Legacy Charge due to potential volume risk. A licensed distributor will not be exposed to volume associated with the difference between the upstream and downstream capacity charges, noting that the Energy Regulator will determine if costs incurred due to volume risk are efficient and therefore allowable.

11.10 The generation capacity charge shall be recovered as an R/MW charge, based on the maximum demand in all time periods over a 12-month rolling average.

11.11 The percentage of generation fixed costs raised as a generation capacity charge shall be motivated to NERSA for a decision. The impact on retail customers of any increase to the percentage and therefore recovered as a fixed charge, and resultant decrease in energy charges must be shown as part of the submission.

Formula:
Annualised capital and O&M costs of an appropriate generation capacity to provide balancing services (e.g. OCGT)/ 8760 hours

Wholesale Prices Paid by all Downstream Market Participants and Balance Responsible Parties

Legacy Charges

11.12 Future competitive market prices may differ from the legacy Section 34 PPA costs and the Vesting Contracts, or for stranded assets (in a future capacity market). This difference will be managed through a legacy adjustment to ensure that customers exercising choice of supplier (via the competitive markets or self-supply) continue to contribute to the full efficient costs of providing any licensed activity or service linked directly to the licensed activity, such as, inter alia, capacity charges.

11.13 This charge is not avoidable and is payable by all Market Participants buying energy through the wholesale market, and to balance responsible parties that are not market participants.

11.14 Regulated Retail Traders that are Market Participants will recover this cost in their retail tariffs from their Captive Customers.

11.15 The Legacy Charge may also include the difference between the Vesting Contract upstream and downstream payments from the CPA during the Transition Period, if there is any.

11.16 It is proposed that the legacy charge is allowed to vary through a surcharge, either up or down from the approved charge within an NERSA-approved range, with a cap (positive) and floor (negative) for this surcharge (monthly or quarterly) If not allowed to vary, the CPA will have to cover any shortfall or be overpaid.

The Legacy Charge Formula:

Legacy charge = (Legacy Contract cost + Vesting Contract difference)/total purchased volumes as adjusted per period (+or-)

Legacy contracts

Legacy Contract cost = Total payments made by the CPA under Section 34 PPAs less Total revenue from the SAWEM for this energy (net of balancing payments)

Legacy Contract cost/total purchased volumes = legacy charge as adjusted per period (+or-)

Vesting Contracts

Vesting Contract difference = Monthly difference between the hedge payments and capacity payments to Eskom Generation and the hedge payments from Distributors that are Market Participants less capacity receipts from the Wholesale tariff

Transmission Network-related Charges

11.17 These charges recover transmission and system operation costs. These charges and their zones must be periodically updated based on more recent cost allocation and submitted to NERSA for a decision. These charges will be based on the revenue approved for the NTCSA in the MYPD or any other future methodology and the SA Grid Code and shall be submitted as part of the Wholesale Price application and shall apply to generators and loads connected to the Transmission Power System. Distributors that are Market Participants will recover the Transmission related charged in their retail tariffs from all customers connected to their Distribution System.

Ancillary Services Charges

11.18 Ancillary charges are for services supplied to the National Transmission Company by generators, distributors or end-use customers, necessary for the reliable and secure transport of power from generators to distributors and other customers. In future, there may be a significant number of parties participating in providing these services across the value chain in an ancillary service market. The payment for Ancillary Services will compensate providers for amongst others, services

necessary to support the continuous and secure operation of Transmission Power System and necessary to maintain reliable operations for Market Participants, Balance Responsible Parties and customers connected to the Transmission Power System, including, but not limited to, those services necessary for voltage and reactive power control, automatic generation control, frequency control and black start capabilities.

11.19 The ancillary services costs are recovered through a c/kWh ancillary service charge payable by all generators and loads connected to the Transmission Power System. These charges may in future be raised on demand (R/kVA) for loads.

Transmission Use-of-System Charges

11.20 The Transmission Use-of-System Charges recover the cost of capacity and for the use of the NTCSA Transmission system. Transmission Use-of-system charges (TUOS) are based on distance and congestion into zones.

11.21 These charges are raised as a R/kVA for loads based on the Utilised Capacity at each main Transmission station or as a R/MW based on the Maximum Export Capacity for generators at their point of supply to the Transmission System.

Transmission Loss Factors

11.22 Losses charges are raised to account for losses in transmission based on distance and congestion per Transmission Zone raised to generators and loads. Loss factors are applied to all MWh consumption or exported generation. The SA Grid Code states that the cost of losses is equal to the volume of energy consumed as losses on the Transmission System, multiplied by the energy tariff. The recovery of the cost of losses from customers is calculated from the purchase costs. As the purchase cost will vary once the volumes purchased are not fully hedged, a regulated losses charge will apply based on the Wholesale Energy tariff.

Cross-subsidy Charges

11.23 There are socio-economic cross-subsidies prevalent at a wholesale level between different retailers and direct customers. If these tariff cross-subsidies continue to be funded through electricity tariffs, then a mechanism will have to be developed to ensure consumers of energy are not able to avoid a contribution to these charges, noting that they must be explicit and quantified. The cost of subsidies would be recovered through a charge raised at the Transmission network level, as either a c/kWh charge on all consumption or a demand-related charge.

11.24 The subsidy charges application in the Wholesale Price must be quantified by regulated Retail Traders through a cost of supply study, and the mechanism will follow a National Subsidy framework still to be developed. Transmission-connected customers shall not avoid contribution to these cross-subsidies.

12. Regulatory Considerations around the Timing of Submissions

12.1 The timing of the Wholesale Price application by the NTCSA shall be determined by NERSA.

Question #5

Wholesale Price Framework

a) How does the proposed wholesale price structure ensure full cost recovery without double counting across its components?
b) What could be measures to ensure transparency and auditability of all price components?
c) How could the framework ensure price stability while allowing for necessary adjustments?
d) Does the wholesale price design align with the future competitive market (SAWEM) objectives?
e) Do stakeholders consider the Wholesale Price Methodology to be simple and practical or complex and impractical – if the latter, what alternatives should be considered?

Cross-Subsidisation

f) Do stakeholders agree that socio-economic cross-subsidies should continue to be funded through electricity tariffs at the wholesale level?
g) Are there alternative funding mechanisms that should be considered?

Legacy Charges

h) How could legacy contract costs be defined and verified (especially Section 34 PPAs)?
i) Is it justifiable to make the legacy charge non-avoidable for all market participants and balance responsible parties?

13. Risks and Mitigation

Risk	**Mitigation**
Political and customer resistance	Engage stakeholders; phased implementation
Market abuse	Strong regulatory oversight; transparent bidding
Legacy charge adjustment	Allow for flexibility as prescribed circumstance. *(Section 15 of ERAA 3)*

Risk	Mitigation
	Notwithstanding subsection (2), the Regulator may, in prescribed circumstances approve a deviation from set or approved tariffs.
Timing of approvals and impact on retail tariffs	NERSA to provide strict requirements when the Wholesale Prices and Retail Tariffs submission are made
Alignment with the requirements of the ERA amendment Act Bypass by certain consumers (who are still benefitting from these services and costs) of generation capacity charges and of legacy costs, with such costs therefore having to be carried by other consumers who thus subsidise the 'by-passing' consumers. Insolvent CPA not able to fulfil its contractual obligations in terms of PPAs with REIPPPP generators or any other ERA section 34 generators, and unable to make the required legacy payments – due to unwise design of downstream tariff structures and enablement of consumer bypass and spreading of capacity and legacy costs over a narrow consumer base.	Accurate generation capacity charges and energy charges, in a pricing system that does not enable consumer bypass, and in a pricing system that includes as many as possible consumers so as to spread these Recover costs over as wide a base as possible, thus reducing the impact on any single consumer. Wise design of retail tariff structures and no enablement of consumer by-pass and spreading of capacity and legacy costs over the widest possible consumer base.
Demand Volume Risk, whereby the actual electricity demand differs from the forecasted demand.	Encourage licensees to model using advanced demand forecasting systems, make use of smart meters and consider analysis of historical consumption.
Generation Volume Risk- Power stations generate less or more electricity than planned due to plant outages, maintenance delay and changing weather.	Improved plant reliability and reduced unexpected supply shortages. Strengthen maintenance planning and enforce generator performance standards.
Price volatility Risk-Electricity prices fluctuate due to supply shortages, fuel costs, demand peaks and network constraints	Solutions will be introduction if long-term contracts, vesting contracts and market surveillance.

Question #6

a) Stakeholders are requested to comment on the identified risks in the table above and provide any other possible risks.

b) Stakeholders are requested to comment on the proposed mitigation strategies for the identified risk and provide further solutions.

14. Financial Model and Assumptions

14.1 The wholesale price application shall include the following information in the format to be determined by NERSA:

- Model showing the application of the NERSA approved tariffs and related charges as determined by the prevailing NERSA approved methodology,
- Wholesale energy, Generation Capacity charge and legacy charge;
  - The volumes used – energy and maximum demand;
  - The TOU periods and motivation for changes;
  - Expected legacy costs and potential market revenue for the CPA; and
  - The proposed rates for energy (in time-of-use), capacity and legacy.

- **Transmission Charges**
  - The loss factors and motivation for the values
  - The volumes used – demand, export capacity and kWh
  - Motivation for any changes to the Zones or changes to the rates per Zone.

15. Alternative to Wholesale Price Tariff

Unbundled Pricing Approach

15.1 Instead of one bundled wholesale price, costs are split into two distinct components, such as transmission tariff and retail Vesting Contracts. This would essentially apply the same concepts outlined in sections 5 to 13 of this document but separated into the individual elements to the appropriate transmission tariff or downstream vesting contract.

15.2 Separating charges into a transmission tariff and retail Vesting Contracts is a strong and practical alternative to a single Wholesale Tariff Methodology, especially in a transitioning market like the South African Wholesale Electricity Market.

15.3 Transmission Tariff (Regulated) – Recovered through a regulated framework overseen by the National Energy Regulator of South Africa. These costs would be:

- Network use-of-system (TUOS)

- Losses
- System operation costs
- Ancillary services
- Possibly capacity-related costs.

15.4 These costs would be cost-reflective and regulated, predictable and stable and are paid by all users of the grid.

15.5 Formula concept: Transmission Tariff = Allowed Revenue ÷ Forecast Demand subject to the prevailing NERSA approved methodology.

15.6 This cost approach would aim to ensure recovery of efficient natural monopoly costs independent of energy trading arrangements

15.7 Retail Vesting Contracts (Contract-Based Energy Pricing) – Energy costs are recovered through contracts between the market counterparty and distributors.

15.8 The costs would be as follows:
- Cost of generation (energy)
- Hedging arrangements
- Legacy cost recovery (if included).

15.9 A central buyer (CPA) allocates generation to regulated Retail Traders via Vesting Contracts. Regulated Retail Traders pay a vesting price instead of a wholesale market price.

15.10 These costs are contract-based (not spot market-based), provides price certainty, can be aligned with policy (e.g. affordability, gradual transition).

15.11 The formular would be: Total Cost to Retailer = Transmission Tariff + Vesting Contract Price

15.12 Separating charges into a regulated transmission tariff and contract-based retail vesting prices provides a transparent, stable, and transition-friendly alternative to a bundled wholesale tariff. This approach enables efficient cost recovery for network services while managing energy price risk through contractual arrangements, supporting the phased development of a competitive electricity market.

Question #6

The Unbundled Approach

a) What are the key advantages and disadvantages of separating the wholesale price into:
   - a regulated transmission tariff, and
   - contract-based retail vesting prices?

b) How does this model compare to a bundled wholesale tariff in terms of:
   - transparency
   - efficiency
   - ease of implementation?

c) To what extent does this approach support the transition to a competitive market structure, and are there any ways in which it could hinder that transition?

16. Conclusion

A wholesale electricity price methodology is necessary for implementing the South African Wholesale Market and adhering to the NTCSA License conditions for separate tariff submissions. Part of the industry will still have regulated tariffs even in the wholesale market. It is important to establish certainty and standardisation in how these charges are raised as part of the Wholesale Price during the Vesting Contracts period and how they will impact the retail sector.

17. The Consultation Process

17.1 Stakeholders are requested to comment in writing on the Consultation Paper on Wholesale Price Methodology. Written comments can be forwarded to mypd@nersa.org.za; hand-delivered to Kulawula House, 526 Madiba Street, Arcadia, Pretoria; or posted to PO Box 40343, Arcadia, 0083, Pretoria. The closing date for the submission of comments is **26 June 2025** at **16:00**.

17.2 NERSA will collate all comments received, which will be considered when making a decision. Public hearings will be held via MS Teams, during which interested and affected parties may make presentations.

17.3 NERSA will collate and consider all comments received as part of its decision-making process. Public hearings will be conducted via Microsoft Teams, as indicated in the table below, providing an opportunity for interested and affected parties to make oral submissions.

Table 2: Wholesale Price Methodology public hearing indicative dates

Province	Form	Date
National, including all provinces	Virtual public hearing	01 July 2026

*The date of the public hearings might be extended/reviewed depending on the number of presenters registered.

17.4 For more information and queries on the above, please contact:

Physical address: Kulawula House
526 Madiba Street
Arcadia
Pretoria

Telephone no.: 012 401 4025

Fax no.: 012 401 4700

End.