TARIFF APPLICATION FOR POLOKWANE STORAGE FACILITY
PERIOD COMMENCING 01 JANUARY 2021

SHELL DOWNSTREAM SOUTH AFRICA (PTY) LTD
(REG. NO. 2007/016255/07)

Submission to National Energy Regulator of South Africa (NERSA)

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1. EXECUTIVE SUMMARY

In accordance with Section 28(1) of the Petroleum Pipelines Act 2003, (Act No. 60 of 2003) Mamadi and Company (Pty) Ltd ("the Consultant") on behalf of Shell Downstream South Africa (Pty) Ltd ("Shell") hereby submits a tariff application to the National Energy Regulator of South Africa ("NERSA") for the following petroleum storage facility (Table 1):

Table 1: Storage Facility Tariff for 2021 tariff period

No.	Storage Facility	Licence Number	2021 Tariff (cents per litre)
1	Polokwane	PPL.sf.F3/222/2015	41.31

The tariff applied for is a maximum tariff and is exclusive of VAT. The tariff applied for is based on the total Allowable Revenue (AR) divided by the total volumes projected for the tariff period under review. This tariff application is for a new tariff to commence on 01 January 2021, and to remain in effect until a future tariff application is submitted and approved by NERSA.

The submission for the tariff application has been conducted using the NERSA "Tariff Methodology for the Approval of Tariffs for the Petroleum Storage Facilities and Petroleum Storage Facilities, 4th Edition", approved 24 August 2017 ("the Methodology") for guidance.

2. BACKGROUND

The Consultant hereby submits this petroleum storage application in terms of section 28 of the Petroleum Pipelines Act, 2003 (Act No. 60 of 2003) ("the Act"), on behalf of the Shell to NERSA. This submission will constitute the first tariff application for the Polokwane storage facility.

On 14 March 2016, NERSA issued an operating licence, with conditions, to Shell for the operation of the petroleum storage facility in Polokwane, Limpopo. The licence was granted by NERSA in terms of sections 19(3)(b) and 20 of the Act and is shown in Table 2 below.

Table 2: Storage facility and licence number

No.	Storage Facility	Licence Number
1	Polokwane	PPL.sf.F3/222/2015

The Polokwane facility is operated by Shell and complies with all applicable legislation, operation codes and standards.

The storage facility currently does not have uncommitted capacity for third party access, but where such capacity does arise, Shell will provide access to potential customers as per its allocation mechanism for uncommitted capacity as published on its website.

Shell does have operating licenses for other storage facilities not listed in the above table. These have been or will be covered in separate tariff applications to NERSA.

Section 15 of the conditions of licence stipulates that the Shell must submit a tariff application to NERSA for approval. This tariff application is for new tariffs to commence on 01 January 2021, and to remain in effect until a future tariff application is submitted and approved by NERSA.

This tariff application contains information which will enable NERSA to undertake its mandated role in approving tariffs for the regulated and licensed storage activities currently engaged in by Shell.

A non-confidential version of this tariff application is also submitted to NERSA to allow it to publish on the NERSA website for public comment.

3. TARIFF CALCULATION

The tariff calculated by Shell is based on the total AR divided by total volumes. The proposed tariff is expressed as cents per litre (cpl) and is exclusive of VAT. Slight variances in the total computation may arise due to rounding differences.

The following Table 3 provides an overview of the tariff calculation for the storage facility.

Table 3: Tariff Overview

Detail	Formula	Total*
Regulatory Asset Base (RAB) Calculation		
Asset value (V-d)	(V-d)	■
Land		■
Net Working Capital (w)	Net Working Capital = Inventory + Receivables + Operating Cash + Minimum Cash balance – Trade payables	■
RAB	RAB = (V – d) + w ± dtax	■
Weighted Average Cost of Capital (WACC) Calculation		
Debt ratio	■	■
Equity ratio	■	■
Cost of Equity: Ke (post-tax real)	Ke = Rf + β(1 + MRP) + SSP + α + LP	■
Cost of Debt: Kd (post tax real)	Kd = (1 + PIR * (1 – t) / (1 + CPIf)) – 1	■
WACC	WACC = [(Eq /(Dt + Eq)) x Ke + ((Dt/(Dt + Eq)) x Kd]	■
Allowable Revenue (AR) Calculation		
Return on RAB	RRAB = (RAB X WACC)	■
Operating Expenses	(E)	■
Depreciation (Historic) (D)	(D)	■
Depreciation (Write-up) (D)	(D)	■
Taxation (T)	(T)	■
AR	AR = (RAB X WACC) + E + D + T	■
Tariff Calculation		
AR	AR = (RAB X WACC) + E + D + T	■
Volumes (litres)	(l)	■
Tariffs (cents per litre)	c/l = AR / Volume	**41.31**

*Computational figures may differ slightly due to rounding effects

4. METHODOLOGY APPLICATION

The Methodology is based on the premise that the tariff approved by NERSA will allow the licensee to recover its investment in the storage facility, cover the operation and maintenance of the facility, and make a profit commensurate with the risk undertaken by the licensee. In order to fulfill these criteria, the concept of allowable revenue is used.

Additionally, the Methodology allows to NERSA to approve tariffs in a systematic manner on a consistent and comparable basis.

Shell submits this tariff application using the Methodology as a guide and to allow NERSA to evaluate the application for tariff approval.

4.1. ALLOWABLE REVENUE (AR)

In accordance with the Methodology, the following formula was used to determine the allowable revenue:

$$\text{Allowable Revenue (AR)} = (RAB \times WACC) + E + D + T$$

Where:

AR	*=*	*Allowable Revenue*
RAB	*=*	*Regulatory Asset Base*
WACC	*=*	*Weighted Average Cost of Capital*
E	*=*	*Expenses: operating and maintenance expenses for the tariff period under review*
D	*=*	*Depreciation and amortisation of inflation write-up: the charge for the tariff period under review*
T	*=*	*Tax: estimated tax gross up for the tariff period under review*

Macro-economic data required in the AR calculation was extracted from the NERSA website and referenced in this application. No claw back adjustment was applied as this is a new tariff application.

Explanatory notes covering the various elements of AR are provided in the remainder of this application.

4.2. REGULATORY ASSET BASE (RAB)

According to the Methodology, the Regulatory Asset Base ("RAB") should be based on an inflation-adjusted historical cost or trended original cost ("TOC") of Property, Plant, Vehicles and Equipment less the accumulated depreciation and amortisation of inflation write-up, plus net working capital and making the necessary adjustments for deferred tax as illustrated by the following formula:

$$RAB = (V - d) + w \pm dtax$$

Where:

V	=	*Value of operating property, plant, vehicles and equipment trended upwards by a CPI factor;*
d	=	*Accumulated depreciation and accumulated amortisation of inflation write-up for the period to the commencement of the tariff period under;*
w	=	*Net working capital;*
dtax	=	*Deferred tax.*

The start of economic regulation for the storage facilities commenced on the date the license was granted by NERSA to Shell on 14 March 2016. The asset values of the storage facilities, as contained in the company accounts, were used as a base to determine the Starting Regulatory Asset Base (SRAB) and then trended over the estimated useful life of the assets using the TOC model as prescribed by the Methodology.

In other words, the formulation of the SRAB valuation is based on a depreciated acquisition cost (Net Book Value) as at the start of the regulatory period i.e. 1 January 2017. This then becomes the proxy for the original cost of RAB to be trended in future for subsequent tariff applications.

The cost of land is included in the calculation of the RAB values as Shell does own the land on which it operates. No depreciation was applied to the land.

Net working capital has been determined by summing the inventory, receivables, operating cash, minimum cash/bank balance less trade payables. The calculation of operating cash is on a 45 days operating expenses approach and trade receivables on a basis of 30 days of AR. The computation is summed up in Table 4 below:

Table 4: Net Working Capital (w)

	Total
Inventory	███
Receivables	███
No. of days in Allowable Revenue	30
W/C Payables	███
W/C Cash	███
No. of days in Expenses	45
Total Working Capital	███

No adjustments have been made to the RAB for deferred tax. Thus, deferred tax for this application is treated as zero.

Shell has no assets under construction (AUC) that are expected to become operational for the tariff period under review (i.e. 2021).

The resultant total RAB is summarised in Table 5 below:

Table 5: Regulatory Asset Base (RAB)

RAB	Total
V-d = Value of PPE	███
Land = Land	███
w = Net Working Capital	███
dt = Deferred tax	██
AUC = Assets Under Construction	███
RAB = Regulatory Asset Base	███

4.3.   WEIGHTED AVERAGE COST OF CAPITAL (WACC)

The following formula from the Methodology was used to determine the Weighted Average Cost of Capital (WACC) in this application:

$$WACC = [(Eq /(Dt + Eq)) \times Ke + ((Dt/(Dt + Eq)) \times Kd]$$

Where:

Eq	=	*Shareholders equity*
Dt	=	*Interest bearing debt*
Ke	=	*Post-tax, real cost of equity derived from the capital asset pricing model (CAPM)*
Kd	=	*Post-tax, real cost of debt*

Shell has calculated its WACC to be ███ The WACC value and its components are provided for in the Table 6 below:

Table 6: WACC Calculation

	Shell
CPIf	4.58%
Corporate tax rate	28%
Debt ratio	███
Equity Ratio	███
Risk free rate	5.36%
Market risk premium	4.05%
Beta	██
Cost of equity (post-tax real)	███
Cost of debt (pre-tax nominal)	███

Cost of debt (post-tax real)	
WACC	██

The WACC calculation for Shell was computed in line with the Methodology. More specifically, it is based on a weighted cost of debt that could realistically be obtained during the period under review and weighted cost of equity calculated by means of the CAPM with elements taken from the NERSA website. The WACC values, along with the underlying computations are further explained below.

4.3.1 COST OF EQUITY (Ke)

The Methodology prescribes that cost of equity (Ke) be determined according to the CAPM. The consultant applied CAPM to estimate the Ke for Shell, which is described by the formula below:

$$Ke = Rf + \beta(1 + MRP) + SSP + \alpha + LP$$

Where:

Rf   =   Risk free Rate
β   =   Beta
MRP   =   Market Risk Premium
SSP   =   Small Stock Premium
α   =   Project Specific Risk
LP   =   Liquidity Premium

The Shell Ke is based on a Rf of 5.36%, MRP of 4.05% and a Beta of ████ which resulted in a Ke of ██████ The Rf and MRP represent a 25-year average real rate as a proxy measure rate of return for long term assets.

The consultant did not include any SSP, LP or project specific risks in the Shell Ke calculation as they are not applicable to Shell.

4.3.2 COST OF DEBT (Kd)

The Cost of Debt (Kd) for the WACC calculation is the prevailing Prime Interest Rate (PIR) at the time NERSA considers the application, converted to a post-tax real value. This is formulated below as:

$$Kd = (1 + PIR * (1 - t) / (1 + CPIf)) - 1$$

Where:
PIR = *Prime Interest Rate*
t = *Tax Rate*
CPIf = *Consumer Price Index Forecast: most recent forecast for period under review (i.e. 2021)*

A Kd (real post-tax) of ▮▮▮▮ was calculated using a CPI Forecast (CPIf) of 4.58% and a nominal Kd of ▮▮▮▮ (pre-tax) for the tariff period under review.

4.3.3 DEBT TO EQUITY RATIO

▮▮
▮▮
▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

5. OPERATING EXPENSES (E)

In accordance with the Regulations 5(2) and 4(2)(a), Shell has estimated expenses that will enable it to recover the reasonable operational and maintenance expenses of the storage facilities in the tariff period under review.

The consultant hereby submits the estimated costs as per Table 7 below and any differences between the expenses provided in this tariff application and actual expenses incurred will be subject to a claw-back in the next tariff period.

Table 7: Operating Expenses (E)

Storage Expense	Total
Basic Salaries & Wages	████
PP&E Repair Service	████
Environment & Engineering Services	█
Waste Management & Health Safety Services	████
Security Services	████
Maintenance & Repair	█
Electricity & Other Costs	████
Sub-total	████
Indirect Expenses	
Salaries	███
Bonuses	███
Operation and Maintenance	████
Sub-total	████
Allocated Expenses	
Allocated Corporate Expenses	███
Sub-total	███
Total Operational Expenses	████

6.   DEPRECIATION (D)

The depreciation policy in Shell's Asset Management Policy is that property, plant and equipment are depreciated over the useful economic life (UEL) of the assets. Depreciation is calculated on a straight-line basis over the service life of each of the classes of assets i.e. 25 years.

The accumulated historical depreciation and accumulated amortization in the write-up was based on the Property, Plant and Equipment in service (as per above original costing asset listing) and trended over the useful economic life (UEL) of the asset.

Thus, in line with NERSA guidelines and methodology, the resultant amounts have been trended both at Net Book Value (NBV), for each year and the applicable accumulated depreciation.

The depreciation and amortisation of inflation write-up will be subject to a claw back if any difference arises between the values used in this tariff application and the values actually incurred.

7. TAX EXPENSE (T)

Shell has opted to use the notional tax payment approach in determining its tax expense. Section 10 of the Methodology prescribes the following formula for calculating the notional tax expense:

$$\text{TAX} = \{(NRBTA) / (1 - t) * t\}$$

Where:

NRBTA   =   Net revenue before tax allowance

         = $\{(RAB * WACC) + E + D - (E + \text{Depreciation})\}$

t   =   Prevailing corporate tax rate of the licensee

The notional expense is the tax due according to accounting requirements rather than the actual tax payable in the year under review.

Table 8: Computation of Notional Tax

	Total
Corporate tax rate	28%
Return on RAB	■■■■
OPEX	■■■■
Depreciation (historic)	■■■■
Depreciation (amortization write-up)	■■■
AR before Tax allowance	■■■■
Net Revenue before Tax allowance	■■■■
Taxable (Grossed Up) Income	■■■■
Tax Allowance @ 28% (T)	■■■■

8. VOLUMES (LITRES)

Shell submits the following projected volumes based on its business forecast outlook for the tariff period under review in Table 9 below.

Table 9: Volumes

	Total
Volumes (litres)	■■■

9. CONCLUSION

Shell has endeavoured to meet NERSA's MIRTA requirements in this application.

To arrive at the Allowable Revenue requirements, Shell has applied NERSA's formulae and relied on various engagements with NERSA.

Shell is committed to meeting the regulations governing the industry. This submission represents the willingness to fully conform to the NERSA requirements, and opens transparency to our business.

REFERENCES

1. Tariff Methodology for Petroleum Storage facilities and Petroleum Storage facilities - Version 4 - 24 August 2017 - Approved
2. CPI Forecasts and Prime Rates -Tariff Decision - NERSA
3. Beta Values for tariffs applicable in the Petroleum Pipelines, Storage and Loading Industry – September 2020 to January 2021
4. Economic Data - 25 Years Market Premium up to 29 February 2020 - Petroleum Storage Loading Industry
5. Historic CPI up to January 2020 -Petroleum Pipelines Industry