

Witbank Joint Venture

PETROLEUM STORAGE
FACILITY

SINGLE YEAR
TARIFF APPLICATION
2018

License Number: PPL.sf.F3/13/15/2006

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ABBREVIATIONS AND ACCRONYMS

AR	Allowable Revenue
CAPM	Capital Asset Pricing Model
CPI	Consumer Price index
CPIf	Consumer Price Index Forecast
IOC	Indexed Original Cost
Kd	Cost of Debt
Ke	Cost of Equity
NERSA	National Energy Regulator
NRBTA	Net Revenue before Tax Allowance
PPE	Property, Plant and Equipment
RAB	Regulatory Asset Base
REC	Regulatory Executive Committee
TOC	Trended Original Cost
WACC	Weighted Average Cost of Capital

EXECUTIVE SUMMARY

1. Engen Petroleum Limited, hereafter referred to as Engen, hereby applies for the following storage facility tariff to the Energy Regulator of South Africa (NERSA) (see Table 1):

Table 1: Final Tariff per year: Witbank: 2018 (cents per litre)

	2018
JV Witbank Tariffs	21,92

2. Engen, as the operating licensee of the Witbank Terminal hereby applies for tariffs for the period 1 January 2018 to 31 December 2018 hereafter referred to as the tariff period under review. The tariff will be reviewed annually and adjusted if material differences occur. The tariff will be in place until the next submission to NERSA.
3. This is a joint venture facility operated by Engen on behalf of Engen, Chevron and Total SA. A joint venture is a commercial enterprise undertaken jointly by two or more parties which otherwise retain their distinct identities. This joint venture is structured as a cost share joint venture with a cost share split structure of 50%: 25%: 25% for Engen, Chevron and Total respectively.

1. INTRODUCTION

Licence and licence holders

1. The Energy Regulator issued a licence with conditions to Engen, Chevron and Total for the operation of a storage facility. Engen (Company A) as the operator of the Witbank Joint Venture (JV), submits this petroleum storage and loading application in terms of section 28(2) of the Petroleum Pipelines Act, 2003, on behalf of the Joint Venture Participants Engen, Chevron and Total, to the National Energy Regulator South Africa (NERSA). This report should be read in conjunction with the detailed excel workbook:
 - Witbank Storage Tariff Model_2018.xlsx
2. Engen as the holder of the license for the Witbank Joint Venture Terminal hereby submits its application for storage tariffs facilities as licensed PPL.sf.F3/13/15/2006.

Tariff Summary

3. The tariff applied for by the applicant is for the period from 01 January 2018 to 31 December 2018. The tariff schedule proposed is shown in Table 2 below.

Table 2: Final Tariff per year: Witbank: 2018 (cents per litre)

	2018
JV Witbank Tariffs	21,92

4. The tariff is expressed in cents per litre based on total throughput. These are maximum tariffs and are exclusive of VAT.
5. Engen applied the following formula to calculate the tariff per facility:

$$\text{Tariff per facility (cents per litre (cpl))} = \frac{\text{Allowable Revenue for the facility (Rands)} * 100}{\text{Total volume per facility (Litre) (Throughput per annum)}}$$

6. The total throughput volume is estimated on actual throughput volume submitted to NERSA for the period 1 January 2015 to 31 December 2015 as per volume reports, and forecasted for 2018 based on historic trend analysis by marketing and supply chain departments.

Third party requests

7. Other than existing arrangements with licensed operators there have been, and are currently, no third party requests for use of the storage facility.
8. Engen has committed to enter into an agreement (Third Party User Agreement) with any third party relating to the use by such third party of the Witbank and prescribing the rights and obligations of the parties in the agreement.

2. APPLICABLE LAW

9. The Regulation for the setting of tariffs for Petroleum Storage and Loading Facilities in South Africa is detailed in the Petroleum Pipelines Act, 2003 (Act No. 60 of 2003), published in Government Notice R342 GG 30905 of 04 April 2008. The 4th Edition, approved on 24 August 2017, of the revised methodology was used as reference in this tariff application.
10. Engen, as operating partner of this joint venture, utilised Generally Accepted Accounting Principles in consolidating the tariff calculation. Care was made to ensure that expenses or assets were not double counted. A weighted capital structure was used to determine the weighted average cost of capital. All data used in this application from all JV partners uses budgeted figures for the financial year **1 January 2018 to 31 December 2018**, unless otherwise stated.

3. CALCULATION

Allowable Revenue (AR)

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

$$AR = (RAB \times WACC) + E + D \pm C + T$$

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 expense for the tariff period under review

- C = Clawback adjustment: to correct for differences between actual and forecasts in formula elements from a preceding tariff period in relation to the actual estimates for that tariff period.
- T = Tax: estimated tax expense for the tariff period under review

12. Macro-economic data required in the calculation was extracted from the NERSA website and confirmed with NERSA. An overview of the AR is presented in Table 3. Explanatory notes covering the various elements of the AR are provided in the remainder of this document.

Table 3: Overview on the tariff analysis

Tariff Calculation	2018
Licensed Storage Capacity (litres)*	17 837 000
Projected Volumes (litres)	██████████
AR (R)	██████████
RAB (R)	██████████
WACC (%)	██████
Expenses (R)	██████████
Depreciation (R)	██████████
Clawback (R)	0
Tax (R)	██████████

* As per License

Regulatory Asset Base (RAB)

13. The following formula has been used to determine the value of the regulatory asset base (RAB):

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

Where:

PPE = Original cost and inflation write-up of operating assets (property, plant and equipment)

d = Accumulated depreciation and accumulated amortisation of inflation write-up for the period up to the commencement of the tariff period under review

w = Net working capital

dtax = Deferred tax

Property, Plant and Equipment

14. The value of prudently acquired property, plant, vehicles and equipment that was used in the tariff period under review comprises only non-current assets plus additional property, plant, vehicles and equipment that will be used during the tariff period under review.
15. Non-current operating assets, taking into account allowed deductions, were valued on the trended original cost (TOC) basis.

16. Accumulated historic depreciation and accumulated amortisation of inflation write-up is the cumulative depreciation against operating property, plant, vehicles and equipment in service.
17. The lifetime of assets was determined individually based on the life of the asset have been utilised and the useful life versus years of depreciation utilised in calculating starting regulatory asset base (SRAB). Information on the SRAB as was determined by the consultants with engineers on site and show treatment of depreciation over the lifetime of the assets up to the point of using a specific value as the SRAB.
18. The total useful lives were re-assessed at the start of the tariff period. Using the accounting records to determine years in service from the start date of the asset, the total useful life could then be determined.
19. The differences of individual assets accounting vs useful life and effect on depreciation for tariff period, is shown in the individual company asset calculation sheets for trended cost and the fixed asset register.
20. Assets planned for operation in 2018 were included in this application.

Deferred tax

21. The applicant included deferred tax in its RAB.

Net working capital

22. The following formula was used to determine the net working capital (w).

**Net working capital = inventory + receivables + operating cash + minimum cash balance
– trade receivables.**

23. Tank bottoms, unpumpables and inventory are all valued at the lower of cost or net realisable value.
24. Receivables are based on 30 days of a licensee's annual allowable revenue (AR).

25. Operating cash is based on 45 days' maintenance and operating expenses, excluding depreciation and deferred taxes.
26. Trade payables are based on 45 days of a licensee's annual allowable revenue (AR).

Weighted Average Cost of Capital

27. The following formula was used to determine the WACC:

$$\text{WACC} = \left[\left(\frac{\text{Eq}}{\text{Dt} + \text{Eq}} \right) * \text{Ke} \right] + \left[\left(\frac{\text{Dt}}{\text{Dt} + \text{Eq}} \right) * \text{Kd} \right]$$

Where:

- Eq* = Shareholders equity
- Dt* = Target debt ratio determined NERSA
- Ke* = Cost of equity – post tax, real
- Kd* = Cost of debt – post tax, real

Debt to Equity Ratio

28. Engen determined a debt equity ratio that would reflect both joint venture holders cost of investment in the storage facility. In view of the confidential nature of the companies' debt and debt related information and because the JV is not run as a separate and independent business, the applicant determined the debt ratio as a debt weighted average debt ratio.

Cost of equity

29. In this tariff application the cost of equity was calculated according to the CAPM.
30. Engen deemed NERSA's published prime rate to be appropriate for its cost of debt calculation. This is in line with the Witbank facilities actual cost of incurring debt. Company specific actual debt allocation would not be useful in this exercise.
31. A South African company tax rate of 28% was used.
32. The applicant applied a beta value in line with the guidelines published by NERSA where a specific beta value is linked to a specific debt ratio.

33. The data used by Engen was obtained from NERSA's website and confirmed with NERSA at the time of submission. Data is represented in Table 4 below.
34. The Liquidity Premium compensates players in the industry for the illiquid nature of the non-current asset base of a storage facility.

Table 4: Economic Indicators used to Calculate the Cost of Equity

Indicator/ Year	2018
SA risk free rate	3,82%
Real Market Risk Premium	5,04%
Beta	█
Liquidity Premium	█

Cost of debt

35. The Methodology prescribes the following formula for calculating the cost of debt (Kd):

$$Kd_{\text{post-tax,nominal}} = \frac{1 + [Kd_{\text{pre-tax,nom}} * (1 - t)]}{1 + CPI_f} - 1$$

36. The prime rate is used as a proxy for the nominal, pre-tax cost of debt for the JV.
37. The forecasted CPI values prescribed and confirmed by NERSA are presented in Table 5 below.

Table 5: Economic Indicators used to Calculate Cost of Debt

Indicator/ Year	2018
Prime interest rate	10,50%
Tax rate	28,00%
CPI forward rate	5,80%

Operational Expenses (E)

38. Costs are shared in line with the shareholding agreement. This is done practically by invoicing. Through the companies' management information control system special care is taken to

ensure that exclusive company specific expenses are addressed through invoicing which is the responsibility of the operator (Engen).

39. The total operating expenses in respect of the facility is shown in Table 6.

Table 6: Direct and Indirect Operating Expenses

Expense items/ Year	2018
Direct Expenses	
Indirect Expenses	

Clawbacks (C)

40. A clawback is not applicable to this application as this is the first year of admission.

Depreciation (D)

41. Depreciation has been calculated on the straight-line basis, using the remaining useful lives of the respective asset classes to determine the value for depreciation.

42. The depreciation rate was based on the estimated service life of plant, as developed by a study of the company's history and experience (taking into account all relevant factors including variations in use, increasing obsolescence or inadequacy) and such engineering, economic or other depreciation studies and other information as may be available with respect to future operating conditions.

Tax Expenses (T)

43. The application uses the notional tax payment approach by applying the following formula as provided in the Methodology for calculating the tax expense:

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

Where:

$$\begin{aligned} \text{NRBTA} &= \text{Net revenue before tax allowance} \\ &= \{(\text{RAB}*\text{WACC}) + \text{E} + \text{D (historic \& write up)} \pm \text{C}\} - \\ &= \{\text{E} + \text{D (historic)}\} \end{aligned}$$

t = Prevailing corporate tax rate of the licensee.

44. Notional tax expense implies tax according to accounting requirements rather than the actual tax payable in the period under review. A corporate tax rate of 28% is used in the calculation of tax. Table 7 presents the tax amounts.

Table 7: Tax Calculations

Calculation/ Year	2018
Notional Tax	

Volumes

45. The volume projections used in this application are represented in the Table 8 below.

Table 8: Volume Projections

Volume/ Year	2018
JV Witbank Volumes	

4. CONCLUSIONS

46. The tariffs calculated in the application are represented in Table 9.

Table 9: Final Tariff Calculations

Tariff/ Year	2018
JV Witbank Tariffs	21,92

47. This application is submitted to NERSA for 2018. Subject to regulatory approval, Engen will conduct a review of the Methodology on a regular basis to ensure that the contents of this application reflect the regulatory circumstances existing at the time of the review.