



Consultation document regarding preliminary transmission tariff assessment for Sasol Gas for the period 26 March 2014 to 30 June 2015.

## 1. INTRODUCTION

1.1 The Energy Regulator is mandated in terms of the National Energy Regulator Act, 2004 (Act No. 40 of 2004) (“NERSA Act”) to regulate the electricity, piped-gas and petroleum pipeline industries in terms of the Electricity Regulation Act, 2006, the Gas Act, 2001 and the Petroleum Pipelines Act, 2003.

1.2 Section 4(h) of the Gas Act, 2001 (No. 48 of 2001) (“Gas Act”) provides that the Energy Regulator must ‘monitor and approve and, if necessary, regulate transmission and storage tariffs.

1.3 In line with this requirement, the National Energy Regulator of South Africa (“NERSA”) has given a notice in the media that it has made a preliminary assessment of the gas transmission tariff for the Sasol Gas for the period 26 March 2014 to 30 June 2014. This preliminary assessment is done as per the Guidelines for Monitoring and Approving Piped-Gas Transmission and Storage Tariffs in South Africa (“Tariff Guidelines”) published by NERSA on 1 May 2009.

1.4 This consultation document provides background information to the preliminary assessment of the transmission tariff for the Sasol Gas for the period 26 March 2014 to 30 June 2014. The application was published on 04 January 2013 on the NERSA website.

1.5 Interested parties are invited to provide written comments to the Energy Regulator, which will be considered before taking a final decision on this matter. The deadline for submitting comments is Monday 04 March 2013.

## 2. APPLICABLE LAW

2.1 The Energy Regulator is required to monitor and approve, and if necessary, regulate piped-gas transmission and piped-gas storage tariffs in terms of section 4(h) of the Gas Act of 2001 (Act No. 48 of 2001) (“the Gas Act”).

2.2 Section 4(h) of the Gas Act provides that the Energy Regulator must “*monitor and approve and, if necessary, regulate*” transmission and storage tariffs. In practice, this is interpreted as follows:

### In monitoring and approval,

- NERSA will not set tariffs but will review tariffs prepared by licensees or applicants for transmission and storage facilities;
- NERSA can request licensees or applicants to amend the levels of tariffs or tariff structure or both; and
- NERSA can approve or decide not to approve a tariff.

2.3 If NERSA decides not to approve the proposed tariff, then section 4h of the Gas Act requires the Energy Regulator to regulate the tariff. The process to be followed in regulating the tariff is outlined in the Tariff Guideline.

### In regulating,

- NERSA will regulate by determining the tariffs, if necessary, to ensure that NERSA is fulfilling its regulatory duties, *inter alia* by ensuring tariffs are cost effective and applied in a non-discriminatory manner.

- 2.4 For monitoring purposes, the application for a tariff must be provided on an annual basis, although applicants are allowed to apply for approval of tariffs for a period of several years.
- 2.5 The approved tariff becomes the applicable tariff and discounts are permissible. It must be noted that the discounts should be consistent with the objectives of the Gas Act as well as section 22 of the Gas Act.
- 2.6 The approved tariff by virtue of section 22 of the Act applies to third parties as well as Sasol Gas subsidiaries.

### **3. SASOL GAS TRANSMISSION TARIFF APPLICATION**

#### **The Applicant**

- 3.1 Sasol Gas Limited (registration number 1964/006005/06) is wholly owned by Sasol Gas Holdings (Pty) Ltd (registration number 2000/013669/07), a limited liability company incorporated in terms of South African company law. Sasol Gas Holdings (Pty) Ltd is in turn a wholly owned subsidiary of Sasol Limited.
- 3.2 Sasol Gas is vertically integrated in the gas industry supply chain in South Africa, i.e. it is active in gas transmission, gas distribution and gas trading. Sasol Limited has also secured rights to natural gas from the Republic of Mozambique through a series of agreements with the Mozambican Government.
- 3.3 Sasol Gas distributes and markets;
- piped natural gas from the Mozambican gas fields, as well as
  - piped methane-rich gas produced at Secunda.
- 3.4 The applicant's gas pipeline network covers most of the Gauteng Province, as well as parts of the Free State, Mpumalanga and KwaZulu-Natal provinces.

- 3.5 On 23 December 2012, the Energy Regulator received a transmission tariff application from Sasol Gas. The application is for the period 26 March 2014 to 30 June 2015.
- 3.6 It is split into two tariff periods aligned with Sasol Gas' financial year. The first tariff period is from 26 March 2014 to 30 June 2014. The second tariff period is from 01 July 2014 to 30 June 2015.
- 3.7 Sasol Gas is applying for a postal pricing<sup>1</sup> tariff structure approach whereby the Sasol Gas' transmission infrastructure is divided into three zones, with one tariff applicable to each zone. In effect, this is zonal pricing. The Tariff Guidelines allow both zonal and postage stamp based pricing.
- 3.8 The application proposes three transmission zones namely:
- 1) Zone 1 : Secunda-Gauteng-Sasolburg network – natural gas
  - 2) Zone 2: Witbank-Middelburg network – methane-rich gas; and
  - 3) Zone 3: KwaZulu-Natal network – methane-rich gas.
- 3.9 The tariff per zone is determined by calculating the allowable revenue per zone divided by the budgeted volume commitment for the zone.
- 3.10 The following table summarises the transmission tariffs Sasol is applying for:

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<sup>1</sup> According to the Guidelines for Monitoring and Approving Piped-Gas Transmission and Storage Tariffs (01 May 2009) , postal pricing refers to a system in which each off-take point in a particular region is charged a flat rate, irrespective of its capacity, the distance gas is transported or any other characteristics, similar to a postage stamp system

### Sasol Gas Tariff Application Summary

Zone	Component	26 March '14 - 30 June '14	1 July '14 – 30 June '15
1 Secunda-Gauteng			
	Tariff (R/GJ)	5.09	5.13
2 Witbank-Middelburg			
	Tariff (R/GJ)	14.20	13.36
3 KwaZulu-Natal <sup>2</sup>			
	Tariff (R/GJ)	5.61	5.94

3.11 Note that Sasol Gas has used the full financial year values for 1 July 2013 to 30 June 2014 for purposes of calculations only but the so calculated/approved tariff only becomes effective after the end of the special regulatory dispensation from 26 March 2014.

#### 4. TESTING OF PROPOSAL

4.1 According to the Guidelines for Monitoring and Approving transmission and storage tariffs for the Piped-Gas Industry in South Africa (Tariff Guidelines), applicants are required to submit a tariff application based on their respective preferred methodology that may be chosen from the approved menu of tariff methodologies.

4.2 Each tariff application is reviewed using the same methodology chosen and used by the tariff applicant and any other appropriate information or method for assessing the reasonableness of each application by the Energy Regulator.

<sup>2</sup> KZN customers will also pay Transnet Lilly Pipeline transmission tariff.

4.3 Alternative tariff methodologies or variations on the methods listed on the menu may be used by the applicant, provided that such method is proven, tested and verifiable.

4.4 Therefore, to review the application for reasonableness, the Energy Regulator used the Rate of Return (“RoR”) methodology as it was in line with Sasol Gas’ transmission tariff application.

## 5. ELEMENTS OF ALLOWABLE REVENUE

5.1 As mentioned above, the Energy Regulator used the Rate of Return (“RoR”) methodology to in the determination of Sasol Gas’ gas transmission tariff, in line with the Tariff Guidelines. The formula of RoR used is as follows:

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

Where:

**AR** - Allowable Revenue

**RAB** - Regulatory Asset Base

**WACC** - Weighted Average Cost of Capital

**E**- Expenses

**T** - Taxes

**D** – Depreciation & Amortization

**C** – Clawback

### 2014 Tariff Calculation Summary

		<b>NERSA (R)</b>	<b>Sasol Gas (R)</b>
<b>a</b>	<b>(RAB = v-d +net working capital)</b> Total RAB	4,797,794,516.19	4,791,193,231.00
<b>b</b>	<b>(AR = (RAB*WACC) + E +D +T±C)</b> WACC		
<b>c</b>	Return on assets = <b>(a*b)</b>		
<b>d</b>	Operating Costs		
<b>e</b>	Depreciation and Amortization		
<b>f</b>	Allowable Revenue before tax = <b>(c+d+e)</b>		
<b>g</b>	Tax		
<b>h</b>	Clawback		
<b>i</b>	<b>Total Allowable Revenue (AR) = (f+g+h)</b>	<b>871,637,596.40</b>	<b>936,342,851.08</b>

## 2015 Tariff Calculation Summary

		NERSA (R)	Sasol Gas (R)
a	(RAB = v-d +net working capital) Total RAB	5,114,215,703.37	5,106,154,962.00
b	(AR = (RAB*WACC) + E +D +T±C) WACC		
c	Return on assets = (a*b)		
d	Operating Costs		
e	Depreciation and Amortization		
f	Allowable Revenue before tax		
g	Tax		
h	Clawback		
i	<b>Total Allowable Revenue (AR) = (f+g+h)</b>	<b>929,598,775.78</b>	<b>1,000,456,784.03</b>

5.2 The paragraphs below provide an analysis of each component of the allowable revenue formula.

### Starting Regulatory Asset Base (SRAB)

5.3 In terms of section 4.4.1 of the Tariff Guidelines, the value of the RAB is the inflation-adjusted historical cost or “trended original cost” (“TOC”) of plant, property and equipment less the accumulated depreciation for the period under consideration plus net working capital. The formula for this is as follows:

**Regulatory Asset Base = Trended Original Cost of Property, Plant & Equipment (v) - Accumulated Depreciation (d) + Net Working Capital (w)**

5.4 Using the above formula, the resultant SRAB for transmission as calculated by Sasol Gas is R4,791 million for the period 01 July 2013 to 30 June 2014 and R 5,106 million for the period 1 July 2014 to 30 June 2015. This is 0.14% and 0.16% respectively lower than the calculation done by NERSA.

5.5 NERSA conducted a verification of the Sasol Gas’ detailed asset register and found the reason for the slight difference to be that Sasol Gas’

trending was done per individual asset item in their accounting asset data base while NERSA applied the trending per asset class using weighted average useful lives. The difference is immaterial and NERSA accepts Sasol Gas' SRAB values as trended per asset item.

#### Depreciation (d) and Amortization

5.6 Section 4.4.3 of the Tariff Guidelines provides that accumulated depreciation (d) is the cumulative depreciation against plant property, vehicles and equipment in service should be calculated on a straight line basis over the economic life of the asset.

This yielded a depreciation and amortisation expense of [REDACTED] million for the tariff period ending 30 June 2014 and [REDACTED] million for the tariff period ending 30 June 2015 . The slight difference between NERSA and Sasol Gas depreciation values arises from NERSA's aggregation when trending the SRAB. The difference is immaterial and NERSA accepts Sasol Gas' depreciation values as derived from the SRAB trended per asset item.

#### Net working Capital (w)

5.7 According to the Tariff Guidelines, net working capital refers to the various regulatory asset-base funding requirements other than utility plant in service. This is determined using the following formula:

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

5.8 The Energy Regulator used the 45-day average working capital figure of [REDACTED] million for the tariff period ending 30 June 2014 and [REDACTED] million for the tariff period ending 30 June 2015, as provided by Sasol Gas and required by the Tariff Guidelines.



### Tax (T)

- 5.9 Section 4.4 of the Tariff Guidelines provides that the flow-through tax approach is the Energy Regulator's preferred tax methodology. Under this approach, only the current taxes payable are factored into the allowable revenue and recovered during the tariff period under review.
- 5.10 The Energy Regulator used the flow-through tax approach to determine the amount of tax payable in the allowable revenue. Deferred tax was not taken into consideration since the flow-through tax method does not provide for future income taxes payable outside the tariff period.

### Expenses (E)

- 5.11 The Energy Regulator is required by section 4.3 of the Tariff Guidelines to assess the operating and maintenance expenses using principles such as whether the expenses were prudently incurred and efficient.
- 5.12 The Energy Regulator adopted the operating expenses submitted by Sasol Gas as reasonable forecast compared to the previous year's actuals. The actual expenses for the tariff period will inform the claw-back.
- 5.13 However, NERSA calculated a decommissioning provision of [REDACTED] million, provided in line with section 34 (1) (d) of the Gas Act and Regulation 11 (4) and (5) which require licensees to provide for security in respect of rehabilitation obligations.
- 5.14 Sasol Gas only included the interest adjustment for the provision for the year in order to meet the cash flow requirement at decommissioning date. This treatment is in line with the International Financial Reporting Standards (IFRS) but different from the treatment required in terms of the Gas Act and Regulations.

5.15 Therefore, NERSA will approve the treatment as per the NERSA calculation.

Weighted Average Cost of Capital (WACC)

5.16 The Energy Regulator used the following formula in its determination of Sasol Gas' WACC:

$$WACC_{(real)} = \left[ \left( \frac{E}{Dt + E} \right) * Ke_{(real)} \right] + \left[ \left( \frac{Dt}{Dt + E} \right) * Kd_{(real)} \right]$$

Where:

E = equity

Dt = debt

Ke<sub>(real)</sub> = real cost of equity derived from the Capital Asset Pricing Model (CAPM)

Kd<sub>(real)</sub> = the post tax real cost of debt

2014 WACC calculation summary		NERSA	Sasol Gas
	<b>Cost of Equity (Ke=Rf+(MRP*beta)</b>		
a	Real Market Risk Premium (MRP)	5.57%	7.26%
b	Real Risk free rate (Rf)	3.83%	3.31%
c	Beta		
d	Small Stock Premium		
e	<b>Real Cost of Equity (Ke) = ((b+(a*c)+d))</b>		
	<b>Cost of Debt</b>		
f	Norminal Cost of Debt (kd)		
g	<b>Post tax Real cost of debt (kd)</b>		
h	Debt ratio	30%	30%
i	Equity ratio	70%	70%
j	<b>Real WACC = ((e*i)+ (g*h))</b>		

5.17 Sasol Gas' current gearing levels are below the minimum level required by Tariff Guidelines. Therefore the gearing based on a minimum debt ratio of 30% was used to calculate the WACC.

5.18 The mark-to-market risk free rate of a selected 5 to 10 year government of South Africa bonds were used for the expected risk free return (Rf) in the estimation of cost of equity. This yielded a real risk free rate of 3.83%.

5.19 The market return ( $R_m$ ) was calculated using the JSE ALL Share Index, converted from a nominal to real value for the previous 25 years (ended June 2012). The average month-to-month CPI over the same period (ended June 2012) was used. This yielded a real market risk premium (MRP) of 5.57%.

5.20 The beta ( $\beta$ ) was determined by proxy. As a proxy, the average of six gas pipeline companies chosen by the Energy Regulator and listed on stock exchanges must be used as per the Tariff Guidelines. The following US companies were used by the Project Team as proxies:

- AGL Resources Inc.
- UGI Corporation
- South Jersey Industries
- WGL Holdings Inc.
- The Laclede Group
- Piedmont Natural Gas Company Inc.

5.21 In line with Tariff Guidelines, the beta was calculated using the Hamada formula. However Sasol Gas used the following data to derive a beta of [REDACTED]:

- daily returns observations;
- an estimation window using returns measured over the two-year period to 23 March 2012; and
- the Vasicek approach to adjust the estimated raw equity betas.

5.22 Although Tariff Guidelines do not specify the estimation window nor the raw beta adjustment formula, , it has been NERSA's standard in piped gas to use:

- weekly returns observations, due to the problems associated with daily observations and monthly observations;
- an estimation window using returns measured over the two-year period; and

- adjusted betas from Bloomberg as stipulated in the approved sources of information.

5.23 The NERSA approach yielded a beta of [REDACTED].

5.24 In the determination of return on equity (Ke), NERSA allowed a small stock premium (SSP) of [REDACTED] based on a research study conducted by PWC South Africa in 2009/10. The conclusions of the study are in line with valuation methodologies used by leading international valuation experts such as Professor Aswath Damodaran, who recommends that smaller companies should add a premium to their Ke.

5.25 A cost of debt (Kd) of [REDACTED] as provided by Sasol Gas was used to calculate the post tax real cost of debt of [REDACTED].

5.26 It must be noted that the sources of information prescribed by NERSA were used as data sources for calculating the WACC.

### **Claw-back**

5.27 Since this is Sasol Gas' first transmission tariff application, there was no claw-back calculated for this tariff period.

## **6. TRANSMISSION TARIFF ZONES**

6.1 Sasol Gas proposes three transmission zones namely:

- a) Zone 1 : Secunda-Gauteng-Sasolburg network – natural gas
- b) Zone 2: Witbank-Middelburg network – methane-rich gas; and
- c) Zone 3: KwaZulu-Natal network – methane-rich gas.

6.2 The tariff per zone is determined by calculating the allowable revenue per zone divided by the budgeted volume commitment for the zone.

6.3 Sasol Gas submits that given the level of capacity utilisation of the pipeline infrastructure, full-distance pricing was considered to be inappropriate as it did not provide a balance between cost reflectivity,

appropriate price signals and practicality. It was also considered to be administratively burdensome to implement.

6.4 NERSA's application of the above approach yielded the following tariffs applicable to each zone:

Allowable Revenue Calculation per Zone - 01 July 2013 to 30 June 2014

Zone	Allowable Revenue (R)	Volume (GJ)	Tariff R/GJ
1 Secunda-Gauteng			4.74
2 Witbank-Middelburg			13.22
3 KZN			5.22

Allowable Revenue Calculation per Zone - 01 July 2014 to 30 June 2015

Zone	Allowable Revenue (R)	Volume (GJ)	Tariff R/GJ
1 Secunda-Gauteng			4.77
2 Witbank-Middelburg			12.41
3 KZN			5.52

## 7. CONCLUSION

7.1 These zone tariffs are 7% lower than Sasol Gas's calculation. The tables below give a comparison of the NERSA calculated tariffs against Sasol Gas calculated tariffs:

Allowable Revenue Calculation per Zone - 01 July 2014 to 30 June 2014

Zone	NERSA Tariff R/GJ	SASOL Tariff R/GJ	Variance %
1 Secunda-Gauteng	4.74	5.09	-7%
2 Witbank-Middelburg	13.22	14.20	-7%
3 KZN	5.22	5.61	-7%

Allowable Revenue Calculation per Zone - 01 July 2014 to 30 June 2015

Zone	NERSA Tariff R/GJ	SASOL Tariff R/GJ	Variance %
1 Secunda-Gauteng	4.77	5.13	-7%
2 Witbank-Middelburg	12.41	13.36	-7%
3 KZN	5.52	5.94	-7%

7.2 An analysis of the above tariffs indicate that Zone 2 (Witbank-Middelburg network) will pay the highest tariff compared to Zone 1 (Secunda-Gauteng-Sasolburg network) and Zone 3 (KwaZulu-Natal network), despite having a shorter distance from supply than Zone 3 and a lower asset base allocation than Zone 1.

7.3 This is due to the fact that under the cost of service approach, volume is the main driver of tariffs. The higher the volume which cover the fixed assets, the lower the tariff per gigajoule.

7.4 NERSA's previous decisions in piped-gas tariff applications have been to monitor and approve the tariffs if the difference between the NERSA assessment and application is less than 10%.