NATIONAL ENERGY REGULATOR OF SOUTH AFRICA

Consultation document regarding Transnet Pipelines' preliminary gas transmission tariff determination for the Lilly Pipeline, for the year 2011.

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 determination of the gas transmission tariff for the Transnet's Lilly pipeline. This preliminary determination 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 determination of the gas transmission tariff for the Lilly pipeline as per **Annexure A**. The application was published on 08 April 2011on 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.

1.6 The preliminary determination is summarised in Table 1 below.

Table 1: Summary of Transnet 2011 gas preliminary tariff determination

RoR Methodology Determination		NERSA (Rm)
(RAB = v-d +net working capital)		
TOC		721.40
Non Pipeline Assets Allocated to Gas		0.00
Deferred Tax		
Net Working Capital		51.80
Total RAB		773.20
(AR = (RAB*WACC) + E +D +T±C)		
WACC		6.03%
Return on assets		46.61
Operating Costs		72.40
Decommissioning Provision		1.26
Depreciation and Amortization		43.34
Allowable Revenue before tax		163.60
Tax		22.22
Clawback		0.00
Allowable Revenue		**185.82**
Maximum tariff (R/GJ)		**10.20**
Tariff Applied for in 2011:		
VOLUME (GJ/annum)	**2011 TARIFF R**	**PROJECTED ALLOWABLE REVENUE (Rm)**
0 - 12 m	7.90	94.80
12.1m - 18m	4.53	27.18
>18m	3.99	0.80
Total Allowable Revenue		**122.78**

2. APPLICABLE LAW

2.1 The Energy Regulator is mandated in terms of the NERSA Act to regulate the piped gas industry in terms of 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:

<u>In monitoring and approval,</u>

- 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 decide 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.

<u>In regulating,</u>

- 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 will by virtue of section 22 of the Act also apply to third parties.

3. TESTING OF PROPOSAL

3.1 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.

3.2 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.

3.3 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.

3.4 Therefore, to review Transnet's application for reasonableness, the Energy Regulator used the Rate of Return ("RoR") methodology since this was in line with the methodology followed by Transnet in its submission.

4. TRANSNET TARIFF APPLICATION

4.1 On 08 February 2011, the National Energy Regulator received a tariff application from Transnet Limited ("the applicant") for the 2011 gas transmission tariff, for its pipeline from Secunda to Durban South, commonly referred to as the "Lilly Pipeline". This is Transnet's second application since the Tariff Guidelines were approved and the granting of the Transnet transmission licence.

4.2 The applicant submits that its tariff is derived from a predetermined formula with its client, Sasol Gas Limited, as embedded in clause 11 of their Gas Transportation Agreement ("the GTA").

4.3 In its application, Transnet is applying for a volume based block tariff of R7.90/GJ for volumes from 0-12m gigajoules per annum (GJ/a), R4.53/GJ for volumes from 12.1-18m GJ/a and R3.99/GJ for volumes above 18m GJ/a.

4.4 According to Transnet, the base tariff was derived after applying a basic allowable revenue calculation and considering the forecast volumes to be transported for the year. However, the result was reduced as it resulted in a tariff that the market could not afford at the time, leading to the basic price formula in the agreement.

5. ELEMENTS OF ALLOWABLE REVENUE

5.1 As mentioned above, the Energy Regulator used the Rate of Return ("RoR") methodology since this was in line with the way Transnet submitted its information. The formula of RoR used is as follows:

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

Where:

RAB - Regulatory Asset Base = R773.2m

WACC - Weighted Average Cost of Capital **=** 6.03%

E- Expenses **=** R73.66m

T - Taxes = R22.22m

D - Depreciation = R43.34m

C - Clawback = R0

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

Starting Asset Regulatory Base (SARB)

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 The Energy Regulator used a Starting Asset Regulatory Base of R566m as approved on 25 March 2010, which was based on a 2009 study commissioned by NERSA for Transnet assets valuation.

Depreciation (d) and Amortization

5.5 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.

5.6 Since the TOC and the remaining economic life of assets could be determined, the Energy Regulator used the original/historical value to calculate the straight line depreciation cost. The inflation write up from the trending of the asset value was amortized over the estimated remaining useful lives of these assets.

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 working capital figure as provided by the applicant.

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 tax payable figure 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”, its controllability and efficiency.

5.12 In this regard, the Energy Regulator commissioned a study to carry out an independent verification of Transnet’s expenses and cost of debt.

5.13 The key findings of the study dated 28th February 2010 and 01 March 2011 were considered. The report indicated that the expenses were correctly classified, recorded and allocated between gas and petroleum activities. Based on these findings, the project team adopted the expenses, for the purpose of the current determination, as stated by the applicant.

5.14 Transnet included a decommissioning provision of R26.4 million in its operating and maintenance expenses, as required by the International Financial Reporting Standards (IFRS).

5.15 Regulatory practice, on the other hand, requires that customers using the pipeline must contribute proportionately over the economical useful life of the asset to the decommissioning costs.

5.16 In this regard, NERSA amortised the decommissioning provision over the remaining economical useful life of the asset at R1.26 million per annum.

<u>Weighted Average Cost of Capital (WACC)</u>

5.17 In its application, Transnet did not provide the building blocks for the WACC calculation since they used a WACC of 5.70% as calculated by NERSA in the 2010 tariff period.

5.18 The Energy Regulator used the following formula in its determination of the WACC:

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

<u>Where:</u>

E = equity = 70%

Dt = debt = 30%

$Ke_{(real)}$ = real cost of equity derived from the Capital Asset Pricing Model (CAPM) = 7.48%

$Kd_{(real)}$ = the post tax real cost of debt = 2.64%

5.19 Based on the optimum efficient capital structure study done by NERSA, equity and debt proportions of 70% and 30% respectively were used to calculate the WACC.

5.20 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 4.31%.

5.21 The market return (Rm) was calculated using the JSE ALL Share Index, converted from a nominal to real value for the previous 26 years (March 1984 to March 2010). The average month-to-month CPI over the same period (March 1984 to March 2010) was used. This yielded a real market risk premium (MRP) of 4.67%.

5.22 The beta (β) 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 companies were used by the Energy Regulator as proxies:

- Boardwalk Pipeline Partners LP
- Kinder Morgan Energy Partners LP

- TC Pipelines LP
- ONEOK Partners LP
- Enbridge Energy Partners LP
- Enterprise Products Partners LP

5.23 This methodology resulted in a leveraged beta of 0.68 for Transnet's gas pipeline business and a real cost of equity (Ke) of 7.48%.

5.24 The Energy Regulator used a cost of debt (Kd) of 10.37%, as provided by the applicant, and a corporate tax rate of 28%. This resulted in a post tax cost of debt of 7.47%.

5.25 The CPI used in calculating the real cost of debt is a forecasted CPI for the next 12 months (4.7%). The CPI information was sourced from the Bureau of Economic Research (BER). The resultant post tax real cost of debt was 2.64%, thus yielding a WACC of 6.03%.

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

Clawback

5.27 Clawback on last year's approved tariff was not determined since Transnet's audited 2010 financial statements are not yet available.

6. ANALYSIS OF PROPOSED TARIFF

6.1 Transnet is requesting for a volume based transmission tariff of R7.90/GJ for volumes from 0-12m GJ/a, R4.53/GJ for volumes from 12.1-18m GJ/a and R3.99/GJ for volumes above 18m GJ/a. This is 4% higher than the 2010 tariff application of R7.60/GJ, R4.36/GJ and R3.84/GJ respectively.

6.2 Although Transnet has applied for a volume based block tariff detailed in 6.1 above, its calculation using the RoR methodology yielded a tariff of R10.90/GJ.

6.3 On the other hand, NERSA's preliminary tariff determination highlighted in **Annexure A** yielded a block transmission tariff of R10.20/GJ. This is 31% higher than the 2010 NERSA determination of R7.78/GJ.

6.4 The 32% increase is attributable to the significant increases in Transnet's revised operating and maintenance costs estimate for 2010, from R30.01m to R57.6m.

6.5 In addition, there was a 27% increase in operating and maintenance costs estimate from the revised figure of R57.6m in 2010 to R73.66m in 2011 due to the decommissioning provision and focasted throughput increase.

6.6 Therefore, on a normalised scale[1], after adjusting for extra ordinary increases, there is a 7% increase in the NERSA determined tariff from R7.78/GJ in 2010 to R8.32/GJ in 2011.

6.7 Table 2 below summarises the above comparison.

Table 2: Comparison of 2010 vs. 2011 Transnet tariff determination

	2010 R/GJ	**2011 R/GJ**	**% Difference**
Gas Transportation Agreement Determination	7.60	7.90	4%
NERSA RoR Determination (Actual)	7.78	10.20	31%
NERSA RoR Determination (Normalised)	7.78	8.32	7%

6.8 According to Transnet, the base tariff in the GTA was derived after applying a basic allowable revenue calculation and considering the forecast volumes to be transported for the year.

6.9 Although the determined tariff was cost reflective and economically appropriate, it was discounted as the market could not afford it at the time. Hence the huge variance between the tariffs calculated using the RoR methodology and the GTA price formula.

Economic analysis

6.10 At this 2011 level of operation, Transnet focasts its total operating costs including depreciation and tax to be R152.3 million. The tariff Transnet will need to cover these costs is of R8.37/GJ.

6.11 In contrast, Transnet is requesting approval on a tariff structure that yields a weighted block tariff of R7.13/GJ. This is 17% lower than the R8.37/GJ tariff needed by Transnet to breakeven.

6.12 In should be noted that if Transnet is to attain full cost recovery and get a return commensurate with risk, it has to increase its tariff to R10.20/GJ.

6.13 In light of the above analysis, the NERSA concludes that the volume based tariff which Transnet is requesting for approval does not allow for full cost recovery and earn it a return commensurate with risk, according to the Tariff Guidelines.

6.14 Despite the factors highlighted above, Transnet submits that the volume based tariff it is seeking approval is reasonable, given the market conditions, as it facilitates growth.

[1] The normalised determination has been calculated using the original costs estimates for 2010, escalated at 27% to capture the increase attributable to decommissioning provision and increase in throughput

6.15 NERSA is of the view that where a licensee indicates that a lower than allowable return is reasonable and there is no risk of predatory pricing as defined in the Competition Act, 1998 (Act No. 89 of 1998), flexibility pricing with discounts may be appropriate, especially where a previously stranded asset or sunk cost is involved. In this instance, lower returns appear to be in the interest of all market players.

6.16 Therefore, NERSA would like to solicit stakeholder comments on the proposed tariff of R7.90/GJ for volumes from 0-12m GJ/a, R4.53/GJ for volumes from 12.1-18m GJ/a and R3.99/GJ for volumes above 18m GJ/a.

ANNEXURE A

2011 TARIFF CALCULATION SUMMARY		
(RAB = v-d +net working capital)	**NERSA** (Rm)	**TRANSNET** (Rm)
TOC	721.40	749.28
Non Pipeline Assets Allocated to Gas	0.00	0.00
Borrowing Costs	0.00	0.00
Deferred Tax[2]		8.75
Net Working Capital	51.80	51.80
Total RAB	773.20	809.83
(AR = (RAB*WACC) + E +D +T±C)		
WACC[3]	6.03%	5.70%
Return on assets	46.61	46.16
Operating Costs	72.40	72.40
Decommissioning Provision[4]	1.26	26.40
Depreciation and Amortization[5]	43.34	33.70
Allowable Revenue before tax	163.60	178.66
Tax	22.22	19.80
Clawback	0.00	0.00
Total AR	**185.82**	**198.46**
R/GJ	**10.20**	**10.90**

Transnet Tariff Determination as per GTA[6]

VOLUME		2011 TARIFF		PROJECTED ALLOWABLE REVENUE
		R		R'm
0 - 12 m GJ/a		7.90		94.80
12.1 - 18m GJ/a		4.53		27.18
>18m GJ/a		3.99		0.80
Total Allowable Revenue				**122.78**

[2] NERSA used the flow through tax approach which does not recognize future tax payable outside the tariff period.

[3] Transnet used the WACC determined by NERSA in 2010 tariff application.

[4] The decommissioning provision was amortized over the remaining useful life of the pipeline by NERSA.

[5] NERSA used straight line depreciation method as per section 4.4.3 of the Tariff Guidelines.

[6] Tariff which Transnet is requesting approval for the 2011 period.

RAB CALCULATION

Key Assumptions

Assets

Starting Regulatory Asset Base (m)[7]	**566**					
Estimated Useful Life of Assets (years)	**26**					
Starting Regulatory Base Year	**2006**					
CPI	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
	4.6%	7.2%	11.5%	7.1%	4.3%	4.7%[8]

TOC Determination

	2006	2007	2008	2009	2010	2011
Remaining Useful Life of Gas Assets	**26**	**25**	**24**	**23**	**22**	**21**
Remaining Useful Life of Additional Assets		**40**		**40**	**40**	
	(m)	(m)	(m)	(m)	(m)	(m)
Opening TOC - Gas Pipeline Assets	566.00	569.27	617.41	657.08	696.79	689.01
Gas Assets acquired during the year	0.0	33.4	0.0	30.0	3.0	0.0
Opening TOC CPI write up	26.04	40.99	71.00	46.65	29.96	32.38
Subtotal	**592.04**	**643.65**	**688.41**	**733.74**	**729.75**	**721.40**
Depreciation	(21.77)	(23.61)	(25.73)	(29.32)	(31.75)	(32.81)
Inflation write up amortisation	(1.00)	(2.64)	(5.60)	(7.63)	(8.99)	(10.53)
Closing TOC - Gas Pipeline Assets	**569.27**	**617.41**	**657.08**	**696.79**	**689.01**	**678.06**

RAB Calculation

(RAB= v-d + net working capital)

TOC - Gas Pipeline Assets	592.04	643.65	688.41	733.74	729.75	721.40
Non Pipeline Assets allocated to Gas	0.00	0.00	40.85	52.67	51.58	0.00
Add Borrowing Costs	0.00	0.00	0.00	0.00	0.00	0.00
Net Working Capital	0.00	0.00	15.13	13.38	14.05	51.80
Total RAB	**592.04**	**643.65**	**744.39**	**799.79**	**795.38**	**773.20**

[7] Starting Regulatory Asset Base (SRAB) approved by Energy Regulator on 25 March 2010, based on a study conducted by PwC.

[8] BER focasted CPI for 2011.

Allowable Revenue Determination

(AR= (RAB*WACC)+D+T+E ±C)

	2008	2009	2010	2011
	m	m	m	m
Total RAB	744.39	799.79	795.38	773.20
WACC	7.70%	4.70%	5.70%	6.03%
Return on assets (RAB*WACC)	57.32	37.59	45.34	46.61
Operating Costs (E)	22.04	52.1	57.6	72.40
Decommisioning Provision	0	0	0	1.26
Depreciation - Gas Assets(D)	25.73	29.32	31.75	32.81
Amortisation write up	5.60	7.63	8.99	10.53
Depreciation - Non Gas Assets	2.63	5.30	8.25	0.00
AR before Tax	113.31	131.94	151.92	163.60
Taxable AR	62.92	45.22	54.33	57.14
Tax (T)	24.47	17.58	21.13	22.22
Clawback (C)	0.00	0.00	0.00	0.00
Total AR (AR)	**137.78**	**149.52**	**173.05**	**185.82**

COST OF EQUITY (REAL) CALCULATION

MRP[9]	4.67%
BETA	0.68
Rf	4.31%
Ke	**7.48%**

COST OF DEBT (REAL) CALCULATION

Kd (NOMINAL) pre tax[10]	10.37%
Tax Rate[11]	28%
Kd (nom) post tax	7.47%
Kd (real) post tax	**2.64%**

WEIGHTED AVERAGE COST OF CAPITAL (REAL WACC) CALCULATION

Debt ratio	30%
Equity ratio	70%
WACC	**6.03%**

[9] Data for CPI and JSE ALSI from March 1984 to March 2010 was used.

[10] Based on the WACD provided by Transnet.

[11] SA corporate tax.