Consultation document regarding Virtual Gas Network (VGN) draft tariff assessment for the storage facility, for the year 2012

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 storage tariff for **Virtual Gas Network (Pty) Ltd (VGN).** This preliminary assessment is done as per the Guidelines for Monitoring and Approving Piped-Gas Transmission and Storage Tariffs in South Africa (herein under referred as "the Tariff Guidelines").

1.4 This consultation document provides background information and the basis of the preliminary assessment calculation for the gas storage tariff for VGN. Interested parties are invited to submit written comments to the Energy Regulator on or before 29 February 2012.

1.5 The preliminary assessment is summarised in Table 1 below.

Table 1: Summary of VGN gas preliminary tariff assessment

2012 TARIFF CALCULATION SUMMARY		
(RAB = v-d +net working capital)	**NERSA**[1] (Rm)	**VGN**[2] (Rm)
TOC	[redacted]	[redacted]
Non Pipeline Assets Allocated to Gas	[redacted]	[redacted]
Borrowing Costs	[redacted]	[redacted]
Deferred Tax	[redacted]	[redacted]
Net Working Capital	[redacted]	[redacted]
Total RAB	[redacted]	[redacted]
(AR = (RAB*WACC) + E +D +T±C)		
WACC	6.55%	[redacted]
Return on assets (WACC×RAB)	[redacted]	[redacted]
Operating Costs	[redacted]	[redacted]
Gas Purchases	[redacted]	[redacted]
Depreciation and Amortization	[redacted]	[redacted]
Allowable Revenue before tax	[redacted]	[redacted]
Tax	[redacted]	[redacted]
Clawback	[redacted]	[redacted]
Total AR	**6.42**	**23.13**
Volume (MGJ/a) - current capacity	[redacted]	[redacted]
R/GJ/a	**53.94**[3]	**194.35**

[1] Storage and trading tariffs only

[2] Storage and trading tariffs plus price of gas

2. APPLICABLE LAW

2.1 The Energy Regulator is mandated in terms of section 4(h) of the Gas Act, 2001 (No. 48 of 2001) ("Gas Act") to monitor and approve and if necessary, regulate transmission and storage tariffs. 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.

2.2 If NERSA decides not to approve the proposed tariff, then section 4(h) 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 Guidelines.

In regulating,

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

2.3 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.

2.4 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.

2.5 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 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 VGN's application for reasonableness, the Energy Regulator used the Rate of Return ("RoR") methodology. VGN used the ROR methodology in applying for its storage tariff application.

4. VGN TARIFF APPLICATION

4.1 On 27 May 2010, the Energy Regulator granted Virtual Gas Network (Pty) Ltd (VGN) licences for the operation of a gas storage facility in Langlaagte and for trading in gas in 20 geographic areas of the Gauteng, Mpumalanga, Free State and KwaZulu-Natal provinces subject to appropriate licence conditions.

4.2 On 06 September 2011, VGN submitted a gas storage tariff application for the period 2012 to NERSA, for its storage facility in Langlaagte. A copy of VGN's tariff application is attached and provided on the NERSA website. This is the first tariff application by VGN since NERSA granted VGN a licence to operate, gas storage facilities.

5. ANALYSIS OF VGN TARIFF

5.1 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.

5.2 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.

5.3 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.

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

5.5 In its application, VGN applied for single year bundled price of R194.35 /GJ. According to VGN the volumes of gas sold from May 2011 to August 2011 amounted to [redacted] GJ/a. Full capacity after the two year developmental stage was forecast at [redacted] GJ/a.

5.6 It must be noted that the R194.35 /GJ is a bundled price which erroneously includes the price of gas molecules and the tariff for gas storage. This is because the VGN tariff application does not distinguish between gas prices, trading and storage costs. However, for the purposes of this tariff assessment, only financial information relevant to the storage activities will be considered in the calculation of the storage tariff.

6. ELEMENTS OF ALLOWABLE REVENUE

6.1 As mentioned above, the Energy Regulator used the Rate of Return ("RoR") methodology since this was in line with the information submitted by VGN's in its tariff application. The formula of RoR used is as follows:

AR = (RAB x WACC) + E + T + D ± C

Where:

AR - Allowable Revenue

RAB - Regulatory Asset Base

WACC - Weighted Average Cost of Capital

E- Expenses

T - Taxes

D - Depreciation

C – Clawback

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

Starting Asset Regulatory Base (SARB)

6.3 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)

6.4 NERSA allocated all the applicant's assets to the storage Starting Asset Regulatory Base since they do not form part of trading. The R[redacted] was trended using a focasted CPI of 5.8%. This yielded a trended asset base of R[redacted].

6.5 On the other hand, VGN trended the R[redacted] at a CPI of 7% and depreciated it for two periods to yield a trended asset base of R[redacted]. This formula is different from the one used by NERSA, in line with section 4.4.1 of the Tariff Guidelines.

<u>Depreciation (d) and Amortization</u>

6.6 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.

6.7 Since the TOC and the remaining economic life of assets could be determined, the Project Team 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, in line with the Tariff Guidelines.

6.8 The trended asset base of R[redacted] was depreciated using the straight line method, over the remaining economic useful life of 8 years to yield a depreciation expense of R[redacted].

Net working Capital (w)

6.9 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.

6.10 VGN used the working capital figure of R[redacted] which was later revised to R[redacted] after consultation with NERSA. NERSA used the revised working capital figure of R[redacted] as provided by the applicant.

Tax (T)

6.11 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.

6.12 NERSA used the flow-through tax approach to determine the tax payable figure in the allowable revenue.

6.13 VGN's tax estimation includes its trading business while NERSA only took into account the storage business. The trading business financial information was not considered in the assessment of the storage tariff.

Expenses (E)

6.14 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.

6.15 VGN does not have a complete set of financial statements yet since it is in its first year of operations. The applicant provided bundled operating expenses which include trading activities.

6.16 The project team used the weight of storage related allowable revenue before operating expenses (R[redacted]/GJ/a) over the bundled price before operating expenses (R[redacted]/GJ) to allocate the bundled operating expenses of R[redacted] between storage and trading activities. This formula yielded a cost allocation factor of 27% for the storage business which translates to operating expenses of R[redacted]. This amount is in line with forecasts presented by VGN in its original licence application.

6.17 Table 2 below provide a summary of the calculation:

Determination of Opex split between Trading and Storage

a	Storage Allowable Revenue before Opex (R/GJ)	[redacted]
b	Bundled Price before Opex (R/GJ)	[redacted]
c	% Opex allocation for storage (a÷b)	27%
d	Bundled Opex (Rm)	[redacted]
c*d	Storage Opex Allocation (Rm)	[redacted]

6.18 The cost of gas purchases was disqualified as it does not form part of storage tariff expenses and therefore was excluded in the storage tariff determination. It will be recovered under trading as cost of goods sold.

Weighted Average Cost of Capital (WACC)

6.19 In its application, VGN did not include leverage as it is [redacted]% equity funded, in the calculation of WACC.

6.20 The Project Team used the following formula in its assessment 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) = 8.23%

$Kd_{(real)}$ = the post tax real cost of debt = [redacted]%

6.21 VGN submitted that no allowance for debt should be given since they are [redacted]% equity funded. However, NERSA used minimum equity and debt proportions of 70% and 30% respectively to calculate the WACC as stipulated by the Tariff Guidelines.

6.22 The market-to-market risk free rate of 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 3.68%.

6.23 The market return (Rm) was calculated using the JSE ALL Share Index, converted from a nominal to real value for the previous 25 years (March 1985 to March 2010). This resulted in a real market return of 9.48%. The average month-to-month CPI over the same period (March 1985 to March 2010) was used to adjust nominal figures to real figures.

6.24 The beta (β) was determined by proxy. As a proxy, the average of six gas pipeline companies listed on stock exchanges were selected as per the Tariff Guidelines. The following US companies were used by NERSA as proxies, based on the industry, structure, nature of business and size:

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

6.25 This methodology resulted in a leveraged beta of 0.78 for VGN's gas storage and trading business and a real cost of equity (Ke) of 8.23%.

6.26 VGN used the 2011 set of companies selected and published by NERSA to get to a beta of [redacted]. This list has been updated with the above set of companies for 2012 tariff determination.

6.27 NERSA used a real post-tax cost of debt (Kd) of [redacted]%, as provided by the applicant.

6.28 Table 3 below summarises NERSA and VGN's WACC calculation.

WACC Calculation	**NERSA Calculation**	**VGN Calculation**
Risk free rate (Rf)	3.68%	[redacted]
Beta	0.78	[redacted]
MRP	5.80%	[redacted]
Cost of Equity (Ke) – real	**8.23%**	[redacted]
Cost of Debt (Kd)	[redacted]	[redacted]
Debt	30%	[redacted]
Equity	70%	[redacted]
WACC	**6.55%**	**7.49%**

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

__Clawback__

6.30 This is VGN's first application; therefore there was no claw back during the current tariff determination.

7. ANALYSIS OF PROPOSED TARIFF

7.1 From the above determination, VGN's storage tariff at the current throughput of [redacted] J/a is R53.94/GJ/a. This decreases to R35.01/GJ/a as throughput increases from current levels to full capacity of [redacted] GJ/a at the end of the developmental stage.

7.2 It must be noted that NERSA used the Rate of Return (RoR) to analyse VGN's storage tariff, in line with the Tariff Guidelines. The information used to assess the tariff was provided by the applicant.

7.3 VGN indicated that the financial information provided was for indication purposes only as it does not have a complete set of financial statements on which to base their forecasts.

7.4 The information submitted by VGN might not be 100% accurate as the applicant was unable to split its assets and expenses between storage and trading indicating that they are not yet in a position to submit a fully compliant tariff application until after December 2012 (the end of the pilot phase).

7.5 In addition, VGN will form part of the roll out of the Regulatory Reporting Manual (RRM) Phase Two, which will enable them to unbundle their business into storage and trading activities. This process is expected to take at least a year, with the applicant ready to report per activity at the end of the second year.

7.6 It is therefore the view of the NERSA that only after the unbundling has taken place will VGN be able to provide fully accurate and reliable financial information for tariff approval.

7.7 With regards to NERSA's response on the claim by the applicant that it would be premature for NERSA to publish the tariffs now as the tariff is directly linked to the volumes of gas sold and the capital expenditure and working capital requirements, NERSA is of the view that the current tariff must be monitored to ensure compliance with the Gas Act. Furthermore, In terms of section 4(h) of the Gas Act, NERSA is required to monitor, approve and if necessary regulate these tariffs.

8. CONCLUSION

8.1 NERSA would like to solicit stakeholders' comments on the application and the assessed tariff of R53.94/GJ/a for the current throughput of [redacted] GJ/a. This decreases to R35.01/GJ/a as throughput increases from current levels to full capacity of [redacted] GJ/a.

8.2 NERSA has requested VGN to amend its tariff structure by excluding the gas bundled price into the allowable revenue requirement. VGN is expected to provide the amended tariff structure before the finalisation of its tariff assessment.