NATIONAL ENERGY REGULATOR OF SOUTH AFRICA

REASONS FOR DECISION FOR ENGEN PETROLEUM LIMITED's

64 LICENSED PETROLEUM STORAGE FACILITIES FOR 2011

23 JUNE 2011

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NATIONAL ENERGY REGULATOR OF SOUTH AFRICA (NERSA)

In the matter regarding

THE APPLICATION FOR THE APPROVAL OF THE TARIFFS FOR 64 PETROLEUM STORAGE FACILITIES

By

ENGEN PETROLEUM LIMITED

(Licence numbers: PPL.sfF3/13/…/2006)

THE DECISION

On 23 June 2011 the National Energy Regulator of South Africa (NERSA or 'the Energy Regulator') amended Engen Petroleum Limited's (Engen) licence conditions for 64 of its licensed petroleum storage facilities, located throughout South African, by approving the tariffs for these facilities.

1. NERSA approved Engen's proposed tariffs listed in Table 1. The tariffs are expressed in cents per litre (cpl).

2. The tariffs in Table 1 are maximum tariffs and are exclusive of VAT.

3. The tariffs are for the period 1 April 2011 until 31 December 2011 or until such later date that NERSA approves new tariffs proposed by Engen.

Table 1: Tariffs for Engen's 65 licensed petroleum storage facilities

No.	NERSA Licence No.	Name of site	Approved tariff (cpl)
1	PPL.sf.F3/13/16/2006	Aliwal North Agency	19.15
2	PPL.sf.F3/13/18/2006	Bela-Bela Agency	26.58
3	PPL.sf.F3/13/19/2006	Benoni Agency	16.74
4	PPL.sf.F3/13/20/2006	Bethlehem Pipeline Terminal	11.18
5	PPL.sf.F3/13/69/2006	Bloemfontein Airport	22.53
6	PPL.sf.F3/13/6/2006	Bloemfontein Depot	10.43
7	PPL.sf.F3/13/21/2006	Bloemhof Agency	16.34
8	PPL.sf.F3/13/22/2006	Bothaville Agency	17.17
9	PPL.sf.F3/13/23/2006	Bultfontein Agency	23.98
10	PPL.sf.F3/13/24/2006	Caledon Agency	15.09
11	PPL.sf.F3/13/65/2006	Cape Town Distribution Centre (Epping)	209.24
12	PPL.sf.F3/13/7/2006	Cape Town Terminal (@ Montague Gardens)	5.15
13	PPL.sf.F3/13/25/2006	Cedarville	15.12
14	PPL.sf.F3/13/26/2006	Citrusdal	19.58
15	PPL.sf.F3/13/27/2006	Coligney (Zenex)	21.10
16	PPL.sf.F3/13/28/2006	Creighton	20.15
17	PPL.sf.F3/13/29/2006	Delareyville (Zenex)	40.73
18	PPL.sf.F3/13/8/2006	Durban Terminal (Wentworth)	2.79
19	PPL.sf.F3/13/1/2006	East London Ocean Terminal	8.30
20	PPL.sf.F3/13/30/2006	Elliot	17.68
21	PPL.sf.F3/13/31/2006	Empangeni	18.34
22	PPL.sf.F3/13/32/2006	Ficksburg	58.95
23	PPL.sf.F3/13/33/2006	Frankfort (Zenex)	28.18
24	PPL.sf.F3/13/34/2006	Hoedspruit Depot	15.74
25	PPL.sf.F3/13/35/2006	Hopetown	22.44
26	PPL.sf.F3/13/66/2006	Isando Distribution Centre (Johannesburg)	148.27
27	PPL.sf.F3/13/9/2006	Johannesburg Pipeline Terminal (Langlaagte)	4.35
28	PPL.sf.F3/13/70/2006	Kimberley Airport	51.06
29	PPL.sf.F3/13/2/2006	Klerksdorp Pipeline Terminal	6.21
30	PPL.sf.F3/13/36/2006	Komatipoort	66.22
31	PPL.sf.F3/13/37/2006	Koppies	17.18
32	PPL.sf.F3/13/3/2006 PPL.sf.F3/13/74/2006	Kroonstad Pipeline Terminal Kroonstad Zenex	5.99
33	PPL.sf.F3/13/38/2006	Leslie Zenex	28.19
34	PPL.sf.F3/13/39/2006	Lichtenburg	24.32
35	PPL.sf.F3/13/40/2006	Lutzville	26.61
36	PPL.sf.F3/13/41/2006	Mafikeng	38.13
37	PPL.sf.F3/13/10/2006	Makhado Depot (Louis Trichardt)	9.82
38	PPL.sf.F3/13/10/2006	Makhado Agency	9.82

No.	NERSA Licence No.	Name of site	Approved tariff (cpl)
39	PPL.sf.F3/13/43/2006	Malmesbury	15.08
40	PPL.sf.F3/13/44/2006	Marquard	32.50
41	PPL.sf.F3/13/45/2006	Middelburg Zenex	17.84
42	PPL.sf.F3/13/42/2006	Mokopane Depot	23.64
43	PPL.sf.F3/13/46/2006	Moorreesburg	17.60
44	PPL.sf.F3/13/48/2006	Musina	32.30
45	PPL.sf.F3/13/49/2006	Petrus Steyn Zenex	20.07
46	PPL.sf.F3/13/51/2006	Polokwane	19.43
47	PPL.sf.F3/13/11/2006	Port Elizabeth Harbour (Dom Pedro Jetty)	14.12
48	PPL.sf.F3/13/12/2006	Pretoria Pipeline Terminal (Waltloo)	5.20
49	PPL.sf.F3/13/52/2006	Queenstown	25.19
50	PPL.sf.F3/13/53/2006	Schweizer-Reneke	15.91
51	PPL.sf.F3/13/54/2006	Senekal	21.19
52	PPL.sf.F3/13/55/2006	Standerton	21.47
53	PPL.sf.F3/13/56/2006	Thabazimbi	16.88
54	PPL.sf.F3/13/71/2006	Upington Airport	18.36
55	PPL.sf.F3/13/13/2006	Upington Depot	16.72
56	PPL.sf.F3/13/57/2006	Viljoenskroon Zenex	37.60
57	PPL.sf.F3/13/58/2006	Vrede Zenex	28.22
58	PPL.sf.F3/13/59/2006	Vredenburg	15.23
59	PPL.sf.F3/13/60/2006	Vryburg	16.09
60	PPL.sf.F3/13/61/2006	Vryheid	25.21
61	PPL.sf.F3/13/62/2006	Welkom	24.98
62	PPL.sf.F3/13/63/2006	Wolmaranstad	18.25
63	PPL.sf.F3/13/64/2006	Worcester	23.78
64	PPL.sf.F3/13/15/2006	Witbank JV	4.16
	PPL.lf.F3/21/2006	East London Joint Harbour Facilities **	none

** East London Joint Harbour Facilities: Under investigation - Engen to conduct a study / exercise to determine assets of the various stakeholders (i.e. Engen, BP, Chevron, Shell, Total)

4. The Energy Regulator further approves the tariff reduction tables proposed by Engen for some of its facilities as reflected in **Annexure A**. The tariff reduction tables are applicable for the facilities that Engen classify *bulk depots*[1]. The tariff reductions are based on the principle that lower tariffs are charged for higher volumes stored.

5. Engen's tariff proposal did not include a tariff for the joint venture facility in East London Harbour (license number: PPL/lf/F3/21/2006) as it states that an investigation is under way to determine the assets of the various stakeholders to the licence. Engen should submit the timelines for the investigation to NERSA as Engen is currently in contravention of the conditions of this licence by not charging an approved tariff.

6. Due to the absence of historical asset values, NERSA accepted the Regulatory Asset Base (RAB) values for each of the facilities as submitted by Engen, until NERSA determines the Starting Regulatory Asset Base (SRAB) of each of the facilities. Engen has implemented the Regulatory Reporting Manuals (RRMs). Engen is expected to submit its first audited Regulatory Financial Reports[2] in terms of the RRMs by the end of July 2011. A possible review of the RAB might come about if so indicated by the analysis of Engen's Regulatory Financial Reports and the accompanying audit report. If an adjustment is required, the required adjustment will be effected by means of a give-back or clawback in the next tariff period.

7. NERSA used Engen's estimated expenses as set out in its tariff application. However, a cost analysis study is probably necessary to establish the accuracy of the support cost allocation. The allocation of support costs to facilities will also be audited as part of the audit of Engen's Regulatory Financial Reports. Engen's expenses will be monitored and any difference between estimated expenses and actual expenses will be subject to a give-back or clawback in the next tariff period.

[1] These refer to the bulk liquid storage and handling facilities and include terminals, depots and storage facilities at airports

[2] For the period 1 April 2010 until 31 March 2011

REASONS FOR DECISION

Applicable Law

8. The legal basis for the Energy Regulator to approve tariffs for petroleum storage facilities is derived from the National Energy Regulator Act, 2004 (Act No. 40 of 2004), (the NERSA Act), read with the Petroleum Pipelines Act, 2003 (Act No. 60 of 2003), (the Act).

9. Section 1 of the Act defines a storage facility as:

   any bulk storage facility and its auxiliary equipment that is or is intended to be used for the storage of petroleum and excludes storage facilities:
   a) *on the premises at which petroleum products are manufactured and where such storage facilities are integral to the process of manufacture;*
   b) *for own final use;*
   c) *used for the retailing of petroleum products to the public;*
   d) *used by an agricultural cooperative exclusively for its members; and*
   e) *used to transport petroleum by road, rail, sea and air.*

10. Section 20(1)(r) of the Act states that the approval of tariffs for loading facilities and storage facilities is within the framework of requirements and limitations of the license conditions that may be imposed by NERSA.

11. Condition 18 of the licence conditions of Engen's operating licences for the 65 petroleum storage facilities prescribes that *the Licensee must submit to NERSA a schedule of proposed tariffs and details of their calculation for approval.* The licence conditions further prescribe that the first tariff application must be submitted within six months of the granting of the license to operate the facility.

12. In terms of section 4(f) of the Act, NERSA *must, as appropriate, in accordance with the Act set or approve tariffs and charges in the manner prescribed by regulation.*

13. NERSA therefore approves tariffs for petroleum storage facilities in a manner prescribed by the Regulations made in terms of the Act (the Regulations) and in accordance with section 28 of the Act.

14. In terms of section 28 of the Act, tariffs to be charged by licensees must be *based on a systematic methodology applicable on a consistent and comparable basis*[3]. To this end, NERSA published the Tariff Methodology for the Approval of tariffs for Petroleum Loading Facilities and Petroleum Storage Facilities (the Methodology) that outlines the approach taken in this decision. On 31 March 2011, the Methodology was refined (2nd Edition of the Methodology) after following an appropriate public consultation process. This edition of the Methodology is available on NERSA's website at www.nersa.org.za.

15. Section 1 of the Methodology provides that *Licensees may submit their tariff applications using their own methodologies or use this methodology as a guide. However, the Energy Regulator will use this tariff methodology to evaluate tariff applications. Therefore, licensees must provide in their applications all the information necessary to apply this methodology*.

16. Tariffs approved by NERSA must also be fair; non-discriminatory; simple and transparent; predictable and stable; and such as to promote access to affordable petroleum products.[4] The tariffs must enable the licensee to recover the investment, operate and maintain the system, and make a profit commensurate with the risk.[5]

17. Section 5 of the Regulations in terms of the Act (the Regulations) prescribes that:

(1) The Authority must, when approving tariffs for storage and loading facilities, consider –
- *a) batch size;*
- *b) the capacity to take petroleum into a storage facility and the capacity to discharge petroleum from that facility;*
- *c) the throughput capacity of loading facilities; and*
- *d) any other relevant matter.*

(2) The provisions of regulations 4(2), 4(3), 4(4), 4(5), 4(6), 4(7) and 4(9) apply, subject to the changes required by the context, to the approval of tariffs for loading and storage facilities.

(3) The Authority may require licensees to provide copies of contracts signed with customers.

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[3] Section 28(2)(a)(i) of the Act

[4] Section 28(2)(a)(ii)-(iv)

[5] Section 28(3)(a)- 3(c)

18. Regulation 5(2) refers to regulation 4(4) which states that:

> *The tariffs set by the Authority must relate to investment in, operation and maintenance of and profits arising only from those parts of a licensed activity for which tariffs are being set.*

The applicant

19. Engen Petroleum Limited (Engen) is a wholly-owned subsidiary of Engen Limited, and conducts all downstream activities in South Africa.

20. Engen is a limited liability company incorporated in terms of South African company law (Registration Number 1989/003754/06). Engen's shareholders are Petroliam Nasional Berhad (PETRONAS), the Malaysian national oil company, with an 80% shareholding and Worldwide African Investment Holdings (WAIH), with a 20% shareholding.

21. On 25 July 2007 NERSA approved operating licences with conditions for Engen to operate 65 petroleum storage facilities. The 65 petroleum storage facilities are located throughout South Africa.

The application

22. Engen submitted tariff proposals for its 65 licensed petroleum storage facilities for 2010/11 (1 April 2010 until 31 March 2011), (the application), to NERSA on 31 August 2010. The application included the proposed Allowable Revenue for each facility and the corresponding tariffs. On 1 November 2010 Engen submitted the electronic version of the application.

23. The application is for 64 of the 65 licensed facilities. The application does not include a tariff proposal for the joint venture facility in East London Harbour (licence number PPL.lf.F3/21/2006) as Engen indicated that an investigation should first be conducted to determine the assets of the various parties to that licence.

24. Engen indicated in its application that its tariff methodology is based on NERSA's Tariff Methodology for the Petroleum Pipelines industry dated 18 June 2008. This is, however, an outdated version of the Tariff Methodology for the Petroleum Pipelines industry as it has subsequently been replaced with the 4th Amendment dated 26 November 2009 and more recently with the 5th Edition dated 31 March 2011. NERSA further published its Tariff Methodology for the Approval of tariffs for Petroleum Loading Facilities and Petroleum Storage Facilities on 25 March 2010, which has also been refined and updated by the 2nd Edition dated 31 March 2011 (the Methodology).

25. In a letter dated 1 March 2011 Engen confirmed an error in its application as it actually applied the 25 March 2010 version of the Methodology in calculating the proposed tariffs and not the 18 June 2008 version of NERSA's Tariff Methodology for the Petroleum Pipelines industry. The 2nd Edition of the Methodology was not yet approved by the time Engen compiled its application.

26. Engen therefore applied the following formula to calculate the Allowable Revenue for each facility:

Allowable Revenue = (RAB x WACC) + E + T + D + C

Where:

RAB	= Regulatory Asset Base
WACC	= effective weighted average cost of capital
E	= Expenses: maintenance and operating expenses for the tariff period under review
T	= Tax: notional tax expense for the tariff period under review
D	= Depreciation and amortization of inflation write-up: the charge for the tariff period under review
C	= Clawback adjustment (to correct for differences between actual and forecasts in formula elements as well as efficiency gains) from a preceding tariff period in relation to the latest estimates for that tariff period

27. Engen then applied this formula to calculated the tariffs per facility:

Tariff per facility (cents per litre) = Allowable Revenue for the facility (Rands) * 100 / total volume per facility (litre)

28. In order to complete the evaluation of the application, NERSA had to request Engen to provide clarity on certain aspects of its application and/or to submit additional information. Engen therefore submitted clarification and additional information to NERSA in letters dated 1 November 2010, 1 March 2011, 3 May 2011 and 3 June 2011. The gist of the correspondence are summarised in Table 2.

Table 2: Summary of clarifications and additional information submitted by Engen

Date of NERSA's request	Date of Engen's response	Clarity/additional information provided
27 September 2010	1 November 2010	- Electronic version of the application submitted. - Clarity on Engen's corporate structure. - Clarity on the calculation of the Regulatory Asset Base.
24 January 2011	1 March 2011	- Clarity on the tariff methodology applied by Engen in compiling the application. - Further clarity on and a correction to the Weighted Average Cost of Capital calculation. - Corrected errors in the calculation of the Regulatory Asset Base of certain facilities. - Updated tax calculation. - Clarity on the make-up of expenses – especially relating to the allocation of shared costs.
4 April 2011	3 May 2011	- Clarity on the make-up of expenses – especially relating to the allocation of shared costs. - Engen updated the planned working capital. - Updated the tariff period in line with the change in its financial year end. - Updated the ranges in its tariff reduction tables to simplify administrative procedures.

Date of NERSA's request	Date of Engen's response	Clarity/additional information provided
27 May 2011	3 June 2011	- Engen corrected the tax calculation.

29. The information submitted by Engen on 3 May 2011 and 3 June 2011 constitutes the latest version of the application. The application is for the period 1 April 2011 until 31 December 2011.

The decision making process

30. Engen submitted tariff proposals for its 65 licensed petroleum storage facilities (the application) to NERSA on 31 August 2010. On 1 November 2010 Engen submitted the electronic version of the application.

31. NERSA published the non-confidential version of the application on its website on 21 December 2010 for public comment. Certain elements of the application were deemed by NERSA to be confidential and were excluded from the published application. Advertisements inviting the public to comment on the application were placed in the Business Day, Cape Times, The Mercury, The Star and Pretoria News on the same day. The closing date for comments was 21 January 2011.

32. Written comments were received from the following stakeholders:
    32.1. BP Southern Africa (Pty) Ltd (BP); and
    32.2. Shell South Africa (Shell).

33. A public hearing on the application was scheduled for 3 February 2011. The invitation to attend and/or make representations at the public hearing was published in the following newspapers: Business Day, The Star, The Mercury, Cape Times, and the Pretoria News on 19 January 2011. No one registered to make representations at the public hearing and no further comments were received on the application.

Stakeholder comments

34. In making its decision, the Energy Regulator considered all comments received. The stakeholder issues are dealt with below.

35. Confidential treatment of the information in Engen's tariff application (BP):
    35.1. the limited data provided removes the ability to make meaningful comments; and
    35.2. the use of random ranges could create confusion.

36. NERSA's response to paragraph 35:
    36.1. On 19 January 2009 the Competition Commission announced in a media statement that it has initiated an investigation into anti-competitive conduct in relation to a range of products in the petroleum value chain, citing the past and present members of the South African Petroleum Industry Association (SAPIA) and the Southern African Bitumen and Tar Association (SABITA). Engen is a member of SAPIA.
    36.2. SAPIA subsequently applied to the Competition Commission for an exemption with regard to certain information being placed in the public domain. At the time of the Energy Regulator's decision of 7 December 2010 on the confidential treatment of Engen's tariff application, the Competition Commission had not reached its decision on the matter.
    36.3. The Energy Regulator noted that in the absence of the Competition Commissions' decision on the publication of information relating to members of SAPIA, this decision on confidentiality might be lenient.
    36.4. Ranges have been used in previous Energy Regulator decisions and are intended to at least give an indication of the magnitude of the values.

37. The basis for the allocation of the support costs (Shell).

38. NERSA's response to paragraph 37:

38.1. Engen claims that the supports costs have been allocated in line with its Cost Allocation Manual for the Regulatory Reporting Manuals (RRMs) that was approved by NERSA on 2 August 2010. The cost drivers are specified in the Cost Allocation Manual.

38.2. However, the fact that support costs make up a large proportion of total expenses probably indicates that either an error occurred in the allocation or that the cost drivers are incorrect. On 3 May 2011 Engen did submit the underlying calculations to NERSA. A cost analysis study might be required.

39. Magnitude of the tariffs – the proposed tariffs are too high (BP and Shell).

40. NERSA's response to paragraph 39:

40.1. During NERSA's requests for clarity and additional information in order to complete the analysis of Engen's tariff application, Engen became aware of errors in the application. The errors related to Engen applying a nominal WACC on an inflated asset base, the tax calculation as well as the calculation of the allocated support costs.

40.2. The result of the corrections performed by Engen was that the tariffs proposed by Engen as per its letter dated 3 June 2011 was indeed much lower than those proposed in the application of 31 August 2011. The average tariff reduced from 36.89 cpl to 25.96 cpl.

41. Tariff structure (BP and Shell).

42. NERSA's response to paragraph 41:

42.1. Tariff structure for storage facilities is dependent on the respective companies' business philosophy.

42.2. The Methodology prescribes that *The Energy Regulator will approve tariff designs and structures appropriate to the nature of the facility.*

42.3. Engen targets higher throughput volumes and therefore discount as the throughput volumes increase.

42.4. Uncommitted capacity is not specified in Engen's proposed tariff reduction tables. Engen merely states that the tariff reductions will apply if and when uncommitted capacity becomes available. However, Engen is not required to submit uncommitted capacity information together with its tariff application.

Assessment of the application

43. NERSA applied its Tariff Methodology for the Approval of tariffs for Petroleum Loading Facilities and Petroleum Storage Facilities, 2nd Edition, dated 31 March 2011 (the Methodology) in evaluating this tariff application.

44. The information submitted by Engen on 3 May 2011 and 3 June 2011 constitutes the latest version of the application. This information was used in the final analysis of the application.

45. Data as supplied by Engen was used for most of the calculations performed in this evaluation. Where this was not the case, the reasons for not using the applicant's data are supplied.

Allowable Revenue

46. As per the Methodology, the following formula was applied to determine the Allowable Revenue per facility:

Allowable Revenue = (RAB x WACC) + E + D ± C+ T

Where:

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

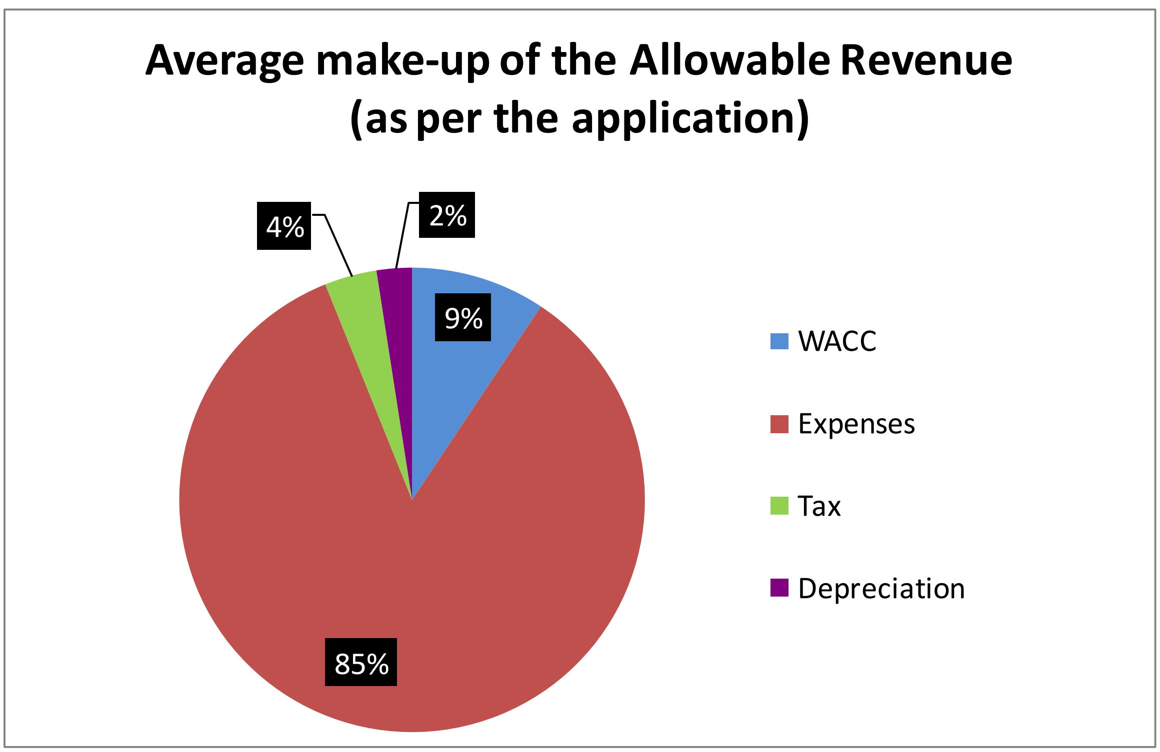
C = Clawback adjustment: to correct for differences between actual and forecasts in formula elements from a preceding tariff period in relation to the actual estimates for that tariff period

T = Tax: estimated tax expense for the tariff period under review

47. Engen performed a similar calculation to determine the Allowable Revenue per facility.

48. Figure 1 reflects the average make-up of the Allowable Revenue of Engen's storage facilities. Expenses account for the largest proportion of the Allowable Revenue per facility.

Figure 1: Average make-up of the Allowable Revenue



Regulatory Asset Base (RAB)

49. Regulation 4(6)(e) of the Regulations prescribes that the RAB should be determined based on the assets' inflation-adjusted historical cost less accumulated depreciation or in accordance with regulation 4(7)(b) of the Regulations which stipulates that:

> *...for assets in operation at the time of promulgation of these Regulations and for which historical cost records do not exist, an estimated value that the Authority accepts as most closely approximating their historical cost…*

50. These requirements are captured in section 4 of the Methodology which stipulates that the following formula must be used to determine the value of the RAB:

RAB = (V - d) + w ± dtax

Where:

V	=	Value of operating property, plant, vehicles 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

51. Engen indicated in the application that the value of its RAB is *based on 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 for the period under review*.

(i) Valuation of operating property, plant, vehicles and equipment less accumulated depreciation / amortisation (V-d)

52. Engen's calculation of the TOC values entails the following:

    52.1. The asset values were extracted directly from Engen's Fixed Asset Register and calculations were performed using the acquisition dates and economic useful lives as recorded[6].

    52.2. Consumer Price Inflation (CPI) data was obtained from Statistics South Africa (Stats SA).

    52.3. At the start of the asset's economic life, the cost is inflated by that year's inflation rate (the CPI). The assumption is made that the asset is purchased at the start of the financial year.

    52.4. The depreciation for the year is then calculated on this inflated value.

    52.5. The resultant net book value (NBV) becomes the TOC value at the end of that financial year.

    52.6. In subsequent years of the remaining economic life, the NBV above is inflated by CPI and the annual depreciation is calculated on the remaining economic life.

53. Engen further indicated that a different calculation was applied for Land. Since Land does not depreciate, the trending calculation mentioned above was adjusted to exclude annual depreciation. The effect of this is that Land items only appreciate in the context of this exercise.

54. Assets under construction and the Dismantling Removal and Restoration (DRR) balance were not included in the RAB.

(ii) Net working capital (W)

55. Engen indicated that it has no operating cash, cash balance, inventories and trade payables at storage facility level i.e. no working capital was included in the application.

[6] Engen's letter to NERSA dated 1 November 2010 refers

(iii) RAB conclusion

56. NERSA accepted the RAB values for each of the facilities as submitted by Engen for this tariff application. Engen has implemented the Regulatory Reporting Manuals (RRMs). Engen is expected to submit its first audited Regulatory Financial Reports in terms of the RRMs by the end of July 2011. A possible review of the RAB might come about if so indicated by the analysis of Engen's Regulatory Financial Reports and the accompanying audit report. If an adjustment is required, the required adjustment will be effected by means of a give-back or clawback in the next tariff period.

Weighted Average Cost of Capital (WACC)

57. Regulation 4(5) of the Regulations prescribes that the *allowable rate of return for licensees must be determined by using the expected efficient weighted average cost of capital (WACC). WACC must be calculated using the weighted average of the licensee's –*

(a) Average cost of debt that can realistically be attained during the period under review; and

(b) Cost of equity calculated by means of the capital asset pricing model or any other appropriate model.

58. Section 5 of the Methodology stipulates that the following formula must be 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 = Interest bearing debt

Ke = Post-tax, real cost of equity[7] derived from the capital asset pricing model (CAPM)

Kd = Post-tax, real[8] cost of debt

Note:

Deferred tax is excluded from the capital structure for the purposes of this calculation.

59. NERSA calculated the real WACC rate to be 6.04%. NERSA's calculation of WACC as compared to Engen's calculation is set out in Table 3. In arriving at a WACC value, NERSA used:

(a) Beta as per the *Annual Guidelines for the Assessment of Storage and Loading Facilities Tariff Applications*, dated 31 March 2011; and

(b) Minimum debt ratio as per the *Tariff Methodology for the Approval of Tariffs for Petroleum Loading Facilities and Petroleum Storage Facilities*, 2nd Edition, approved on 31 March 2011.

[7] Note: Market return indices published by the JSE reflect after-tax returns.

[8] First convert from pre- to post-tax and then from nominal to real.

Table 3: Engen's WACC calculation vs. NERSA's WACC calculation

		Engen Application	NERSA Evaluation
Equity ratio	a		[redacted]
Debt ratio	b=1-a		[redacted]
Corporate tax rate	c	28%	28%
Consumer Price Inflation (CPI)	d		
CPI forecast	e	5.90%	5.18%
			[redacted]
Cost of debt (nominal pre-tax)	f	[redacted]	[redacted]
Cost of debt (real post tax)	**Kd=[1+{f*(1-c)}] /[1+e]-1**		[redacted]
Risk free rate (nominal pre-tax)	g	8.65%	
Risk free rate (real post tax)	Rf		3.90%
Market return (real - JSE ALSI TRI)	MR		[redacted]
Market risk premium (real)	MRP=MR-Rf	6.00%	5.56%
Beta	h	0.8 - 1.2	[redacted]
Cost of equity (nominal pre tax)	i	[redacted]	
Cost of equity (real post tax)	**Ke=Rf+(MRP*h)**		[redacted]
WACC (nominal)		[redacted]	
WACC (real)	**j=(Ke*a)+(Kd*b)**	[redacted]	**6.04%**

60. Engen initially applied post tax nominal rates in its WACC calculation.

61. However, section 5.1 of the Methodology specifies that the real post tax cost of debt and the real post tax cost of equity should be used in the WACC calculation. The TOC value of the assets reflects the nominal value of the RAB. The Methodology, therefore, provides that the return on the RAB is calculated in real terms on the nominal value of the RAB and double counting is avoided.

62. Engen later corrected this error by submitting a real post tax WACC rate[9].

63. NERSA applied a minimum debt to total capital level of 30% as prescribed by section 5.5 of the Methodology as reflected in Table 3 above.

[9] Engen's letter dated 1 March 2011 refers

(i) Cost of equity (Ke)

64. NERSA determined the cost of equity according to the capital asset pricing model (CAPM) as per section 5.6 of the Methodology. All economic data relating to the cost of equity was used in accordance with the Methodology. The values are reflected in Table 3.

65. Engen applied a standard CAPM model to calculate the cost of equity[10].

(ii) Beta (β)

66. The beta of 0.59 applied by NERSA (refer to Table 3) is based on the proposed beta values at various levels of gearing as set out in NERSA's document titled *Guidelines for the Annual Assessment of Storage and Loading Facilities Tariff Applications* dated 31 March 2011.

67. Engen stated that it is an integrated oil company but the application does not include further supporting arguments for the beta used in Engen's WACC calculation.

(iii) Cost of debt (Kd)

68. Engen's cost of debt was accepted by NERSA and the difference in the values relates to the different inflation forecasts used.

69. NERSA used the latest CPI forecast obtained from the Bureau for Economic Research (BER) in January 2011. Engen's inflation forecast for 2011 is based on Standard Bank's forecast dated September 2010 adjusted to incorporate the most recent increase in the Producer Price Index (PPI).

70. If an adjustment to the cost of debt is required as per section 5.7.4 of the Methodology, the required adjustment will be made in the Allowable Revenue at the first tariff review after the actual cost of debt information becomes available. The adjustment will be made in accordance with section 9 of the Methodology.

[10] Engen's letter dated 1 November 2010 refers

(iv) WACC conclusion

71. NERSA notes that Engen's return on capital/WACC values are comparable to those calculated by NERSA. NERSA therefore accepted the values submitted by Engen.

Expenses – Operating and Maintenance

72. Regulation 5(2) refers to Regulation 4(2) which states that:

The tariffs set by the Authority must enable an efficient licensee to-

(a) Recover the reasonable operational and maintenance expenses of storage and loading facility in the year in which they are incurred.

73. Expenses contribute, on average, to approximately 85% of Engen facilities' Allowable Revenue as reflected in Figure 1.

74. Engen submits that expenses are made up of operating expenses, maintenance costs and support costs.

75. Engen states that operating expenses are as per its SAP Expense Plan for the 2011 financial year period. Engen further states that operating expenses include all normal expenses incurred in running the facilities. NERSA's analysis of the data provided by Engen determined that the major operating expenses are salaries, outside services, stocks gains and losses, and contract services.

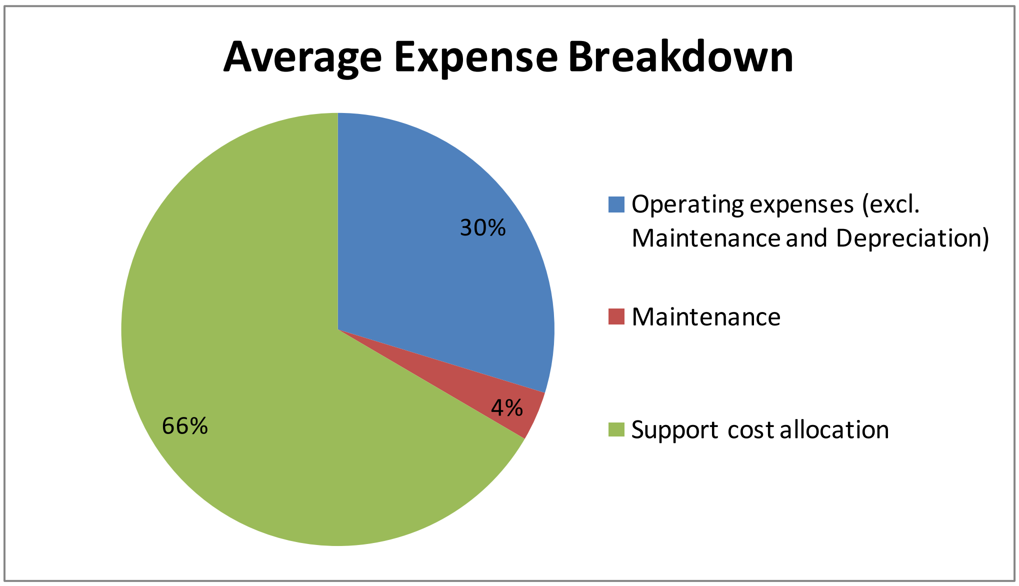
76. Support costs cover the functions performed by the Chief Executive Officer's Office, Financial Services, Human Capital, Corporate Planning, Health Safety and Environment, Product Quality, Corporate Affairs, Enterprise Risk and Assurance, Legal and Company Secretarial, and Special Projects. Engen states that the supports costs have been allocated in line with Engen's Cost Allocation Manual for the Regulatory Reporting Manuals (RRMs) that was approved by NERSA on 2 August 2010. The two major cost drivers are the amount of time personnel spend on

the different divisions / departments as well as headcount[11]. The support costs are then allocated to facility level based on volume splits.

77. Engen submitted the breakdown of the major activities and values that make up the allocated support costs in its letter dated 3 May 2011. Engen further states that only support costs related to the licensed activities are provided for.

78. Figure 2 indicates that support costs make up a rather large proportion of Engen's total expenses - approximately 66% of total expenses (on average) consist of allocated support costs.

Figure 2: Average expense breakdown



79. The RRMs prescribe that the Cost Allocation Manual is prepared by the licensee for approval by NERSA. Any allocation drivers that lead to disproportionate allocations (not based on causality or proportionate benefits received) cannot be justified.

80. A cost analysis study is probably necessary to establish the accuracy of the support cost allocation and to establish if the prescriptions of regulation 4(2)(a) are adhered to. The support cost allocation will be audited as part of the audit of Engen's

[11] Engen's letter dated 1 March 2011 refers

Regulatory Financial Reports for the RRMs that should be completed in July 2011. The outcome of the cost analysis study can be dealt with via a revision to Engen's Cost Allocation Manual for the RRMs.

81. NERSA used Engen's estimated expenses as set out in its tariff application. However, Engen's expenses will be monitored and any difference between estimated expenses and actual expenses will be subject to a give-back or clawback in the next tariff period.

Depreciation

82. Section 8.1 of the Methodology prescribes that depreciation is calculated on a straight line basis over the service life of each of the assets or classes of assets.

83. Engen has calculated the depreciation based on the method set out in Note 3 of the Methodology, *Method to Determine Depreciation and Amortization write-up*[12]*.* Engen therefore calculated the depreciation on a straight line basis over the useful lives of the assets.

84. NERSA accepted the depreciation values for each of the facilities as submitted by Engen. The depreciation values could change if the analysis of Engen's Regulatory Financial Reports for the RRMs and the accompanying audit report indicates that a review of the RAB is required.

Clawback

85. No clawbacks have been applied for as this is Engen's first tariff applications.

[12] Engen's letter dated 1 November 2010 refers

Tax

86. Section 7.3 of the Methodology prescribes the following formula for calculating the notional tax expense:

Tax = {(NRBTA) / (1-t)*t

Where:

NRBTA = Net revenue before tax allowance

= {(RAB*WACC) + E + D(historic & write up) ±C} - {E + D(historic)}.

t = Prevailing corporate tax rate of the licensee

87. The notional tax expense is interpreted to mean the tax due according to accounting requirements rather than the actual tax payable in the period under review.

88. Engen initially included a provision for tax only for the facilities that it expected to have a taxable income during the tariff period under review. Engen defined taxable income to consist only of storage and handling income, rental income and other credits. However, NERSA is of the view that the return on capital / WACC is a post tax return and a tax allowance should therefore be calculated.

89. Engen corrected this error and applied the formula in section 7.3 of the Methodology to calculate its tax expense[13]. NERSA has accepted the revised tax expense values submitted by Engen.

[13] Engen's letters dated 1 March 2011 and 3 June 2011 refers

Tariffs

90. Engen applied the following formula to calculated the tariffs per facility:

Tariff per facility (cents per litre) = Allowable Revenue for the facility (Rands) * 100 / total volume per facility (litre)

91. Engen's forecasted volumes for bulk depots, airports, terminals and distribution centres are based on the total throughput volumes for the 2010 financial year period. This information was obtained from Engen's SAP volume reports.

92. The forecasted volumes for Agents[14] are based on the total sales volumes (wholesale sales and nominated sales) for the 2010 financial year period.

93. The tariffs reflected in Table 1 are expressed in cents per litre and are exclusive of VAT.

94. Engen proposed tariff reduction tables which are applicable for the facilities that Engen classify *bulk depots.* These refer to the bulk liquid storage and handling facilities owned and operated by Engen at various locations in South Africa. The activities at these locations include the receiving, storing, handling of bulk liquid petroleum products and the delivering and transporting of such products to Engen's customers. These facilities include terminals, depots and storage facilities at airports.

95. The tariff reductions are based on the principle that lower tariffs are charged for higher volumes stored. Three tariff reduction categories are applicable – low volumes, medium volumes and high volumes. The sizes of the categories are determined based on the size of the operation. As a general rule, the tariff for low volumes stored is the maximum tariff reflected in Table 1, the tariff for medium

[14] Agents refer to the agents that were appointed by Engen to sell and distribute for their own account but operating out of Engen owned facilities. They also service a small portion of Engen's customers, which are referred to as nominated customers.

volumes stored is 20% less than the maximum tariff and the tariff for high volumes stored is 36% less than the maximum tariff.

96. The tariff reduction tables are reflected in **Annexure A.**

97. NERSA accepted the tariffs and the tariff reduction tables proposed by Engen in its application.

Conclusion

98. On the conspectus of the facts and evidence, it is appropriate and in compliance with the requirements of the National Energy Regulator Act, 2004 (Act No. 40 of 2004) to make the decision set out above. It finds a reasonable balance between the interests of customers on the one hand and the interests of investors on the other hand.

99. NERSA approves the tariffs applied for by Engen for its 64 licensed petroleum storage facilities as it is of the view that Engen's proposed tariffs are comparable to the tariffs calculated by NERSA.

Annexure A: Tariff Reduction Tables

BETHLEHEM PIPELINE TERMINAL

Tariff Reduction Table

PPL.sf.F3/13/20/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	2 000	11.18
MEDIUM	2 001	5 000	8.90
HIGH	5001+		7.10

BLOEMFONTEIN DEPOT

Tariff Reduction Table

PPL.sf.F3/13/6/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	4 000	10.43
MEDIUM	4 001	8 000	8.30
HIGH	8001+		6.70

CAPE TOWN TERMINAL (MONTAGUE GARDENS)

Tariff Reduction Table

PPL.sf.F3/13/7/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	5 000	5.15
MEDIUM	5 001	10 000	4.10
HIGH	10001+		3.30

DURBAN TERMINAL (WENTWORTH)

Tariff Reduction Table

PPL.sf.F3/13/8/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	25 000	2.79
MEDIUM	25 001	50 000	2.20
HIGH	50001+		1.80

EAST LONDON OCEAN TERMINAL

Tariff Reduction Table

PPL.sf.F3/13/1/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	6 500	8.30
MEDIUM	6 501	13 000	6.60
HIGH	13001+		5.30

HOEDSPRUIT DEPOT

Tariff Reduction Table

PPL.sf.F3/13/34/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	3 500	15.74
MEDIUM	3 501	7 500	12.60
HIGH	7501+		10.00

JOHANNESBURG PIPELINE TERMINAL (LANGLAAGTE)

Tariff Reduction Table

PPL.sf.F3/13/9/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	15 000	4.35
MEDIUM	15 001	30 000	3.50
HIGH	30001+		2.80

KLERKSDORP PIPELINE TERMINAL

Tariff Reduction Table

PPL.sf.F3/13/2/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	10 000	6.21
MEDIUM	10 001	20 000	5.00
HIGH	20001+		4.00

KROONSTAD PIPELINE TERMINAL

Tariff Reduction Table

PPL.sf.F3/13/3/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	10 000	5.99
MEDIUM	10 001	20 000	4.80
HIGH	20001+		3.80

MAKHADO DEPOT

Tariff Reduction Table

PPL.sf.F3/13/10/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	3 500	9.82
MEDIUM	3 501	6 500	7.80
HIGH	6501+		6.30

MOKOPANE DEPOT

Tariff Reduction Table

PPL.sf.F3/13/42/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	800	23.64
MEDIUM	801	1 200	18.90
HIGH	1201+		15.10

PORT ELIZABETH HARBOUR

Tariff Reduction Table

PPL.sf.F3/13/11/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	2 000	14.12
MEDIUM	2 001	4 000	11.30
HIGH	4001+		9.00

PRETORIA PIPELINE TERMINAL (WALTLOO)

Tariff Reduction Table

PPL.sf.F3/13/12/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	20 000	5.20
MEDIUM	20 001	50 000	4.20
HIGH	50001+		3.30

UPINGTON DEPOT

Tariff Reduction Table

PPL.sf.F3/13/13/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	3 500	16.72
MEDIUM	3 501	7 500	13.40
HIGH	7501+		10.70

WITBANK JOINT VENTURE PIPELINE TERMINAL

Tariff Reduction Table

PPL.sf.F3/13/15/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	3 500	4.16
MEDIUM	3 501	7 000	3.30
HIGH	7001+		2.70

BLOEMFONTEIN AIRPORT DEPOT

Tariff Reduction Table

PPL.sf.F3/13/69/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	2 000	22.53
MEDIUM	2 001	4 000	18.00
HIGH	4001+		14.40

KIMBERLEY AIRPORT DEPOT

Tariff Reduction Table

PPL.sf.F3/13/70/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	2 000	51.06
MEDIUM	2 001	4 000	40.80
HIGH	4001+		32.70

UPINGTON AIRPORT DEPOT

Tariff Reduction Table

PPL.sf.F3/13/71/2006

	Throughput volume per month range (in cubic metres)		Tariff rate (in cpl)
	From	To	Applicable
LOW	500	2 000	18.36
MEDIUM	2 001	4 000	14.70
HIGH	4001+		11.80