

## 8. Pricing Regulation

- 8.1. The regulatory environment was identified as a feature of the LPG sector that may be lessening or substantially preventing competition. This section will focus on issues associated with the pricing regulation framework.
- 8.2. The pricing regulation pertains to the MRGP along with the MRP. The DoE, through its mandated role to regulate the buying and selling of petroleum and petroleum products, regulates both prices.<sup>102</sup>
- 8.3. Two levels of the value chain are subject to price regulation. The first is the refinery level, where LPG is sold from the refinery gate by producers at a regulated maximum price determined by the DoE. The second level of the value chain subject to price regulation is the retail level, where the DoE also regulates the price of LPG sold through cylinders.
- 8.4. The rationale for the regulation of prices in the LPG sector is found in the “White Paper on Energy Policy” wherein it is stated that the price regulation of LPG will achieve the following objectives:<sup>103</sup>
  - 8.4.1. Make LPG more accessible to all lower income groups.
  - 8.4.2. Make the price more attractive to all income groups.
  - 8.4.3. Encourage using LPG as an alternative energy source to electricity.
  - 8.4.4. Give opportunities for the establishment of more BEE companies in LPG and the creation of employment opportunities.

### *Maximum refinery gate price (MRGP)*

- 8.5. The DoE submitted that the rationale for implementing the MRGP was to ensure “LPG is properly priced and aligned to the strategic thrust of the DoE to ensure security of energy through diversification of energy resources with LPG being a significant part of the energy mix”.<sup>104</sup>

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102 This is as per the Petroleum Products Act (1977), which stipulates that the DoE may regulate the prices of petroleum and petroleum products. LPG is therefore included within the ambit of this act, as petroleum products are defined as “any liquid petroleum fuel and lubricant, whether used or unused”.

103 Refer to DoE submission, response to q3.2, p5 (01 June 2015)

104 Refer to DoE submission, response to q3.2, p5 (01 June 2015)

- 8.6. The regulation of the MRGP is based on the principle that LPG mainly comprises propane and butane, which can be used to produce more valuable and profitable petroleum products in the refinery process. The price of LPG is derived from the 93 octane basic fuel price (“BFP”) minus a discount of R74 per metric ton. The MRGP is an LPG equivalent of the BFP applied to petrol and diesel. Table 10 reflects the price calculated.<sup>105</sup>

**Table 10: Example of MRGP determination (August 2016)**

August 2016		
BFP of 93 octane and LRP	The average basic fuel price of 93 octane LRP expressed in South African cents per litre for the month preceding the price adjustment	R4.96970 per litre
Convert to price in rands per metric ton	This is achieved by dividing by a density factor of 0.75 and multiplying by 1 000.	$(6.4465 \div 0.75) \times 1000 = R6\ 626.267$ per ton
Less R74.00 per metric ton	This is the discount factor applied by the DoE.	$6\ 626.267 - 74.00 = R6\ 552.267$ per ton
Convert to price in cents per litre	This is achieved by multiplying by a density factor of 0.555 and dividing by 10. <sup>170</sup>	$(6\ 552.267 \times 0.555) \div 10 = 363.65c/l$
<b>Equals</b>		<b>MRGP</b>

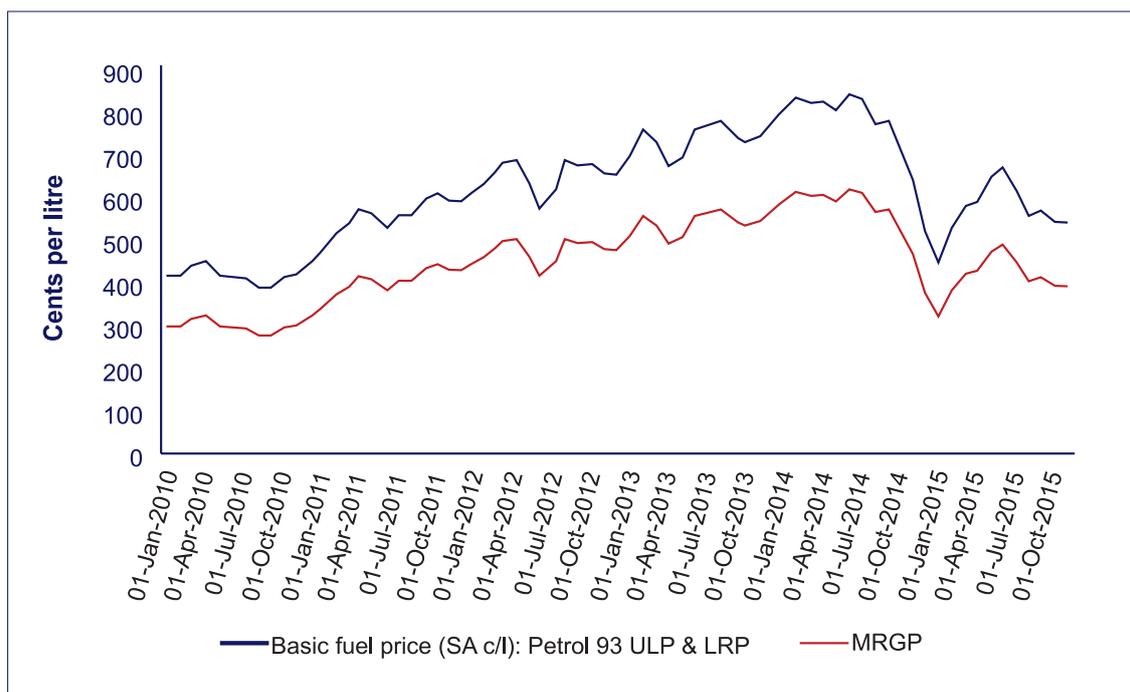
Source: *Working Rules to set monthly maximum retail price for liquefied petroleum gas (LPG)*, Department of Energy (2010)

- 8.7. As demonstrated above, the base price of MRGP is derived from the BFP. The BFP is based on the import parity principle, which determines, for example, what it would cost a South African importer of petrol to buy petrol from an international refinery. Factors influencing this price include international crude oil prices, international demand and supply, product inventory levels, geo-politics, the Rand/ Dollar exchange rate, international refining margins and seasonality.<sup>170</sup>

105 [www.energy.gov.za/files/policies/WORKING\\_RULES\\_2010.pdf](http://www.energy.gov.za/files/policies/WORKING_RULES_2010.pdf) [accessed: 11 September 2014]

8.8. Diagrammatically, the MRGP generally lies below the BFP, given the subtraction of the discount factor attributed to LPG. The price differential between BFP and MRGP is displayed in Figure 22. The calculated price differential between the MRGP and the BFP is 26%, constant throughout the sample period displayed. In general, the MRGP is lower than the BFP; this might be attributable to the higher economic value of petrol relative to LPG, which then lowers the incentive to produce LPG.

Figure 22: Price differential between BFP and MRGP (2010-2015)



Source: The Department of Minerals and Energy and Central Energy Fund Group, Commission's own calculation, 2015.

#### Maximum retail price

8.9. In 2010, the DoE embarked on a mission to regulate the maximum retail price ("MRP") of LPG supplied to residential consumers following a public outcry because of the high prices. The maximum retail price can be defined as "the price of LPG as per prescripts of the Regulation in respect of the Refinery Gate Price of Liquefied Petroleum Gas, Regulation No. 1029 of 31 July 2002 or its successors".<sup>106</sup>

8.10. The Petroleum Products Act stipulates that any person selling LPG from any outlet to a customer is required to do so at a price that is equal to or less than the MRP of LPG.<sup>107</sup> The MRP of LPG is calculated as the sum of the following factors:

<sup>106</sup> Discussion document on the review of the maximum refinery gate price of liquefied petroleum gas, 2012, Department of Energy. Notice 886.  
<sup>107</sup> *ibid.*

- 8.10.1. MRGP.
  - 8.10.2. Reasonable costs associated with transport from the nearest coastal refinery to LPG filling plants.
  - 8.10.3. A margin determined from costs associated with the marketing and wholesaling of LPG.
  - 8.10.4. A margin determined from costs associated with the filling and retailing of LPG.
  - 8.10.5. Reasonable costs associated with the distribution of LPG from the cylinder-filling plant to the residential customer.
- 8.11. The rationale behind the costs used to calculate the MRP of LPG is as follows:
- 8.11.1. Transport. The costs contemplated in the above calculation must be based on the most economic and available mode of transport as published on the DoE website for all LPG pricing zones.<sup>108</sup> Road tankers can typically convey 22 to 26 tonnes per trip, and the lowest economies of delivery are achieved when the full load can be discharged into the storage vessel. The majority of LPG filling sites receive LPG via road delivery.
  - 8.11.2. Storage. Costs of storage are based on the size of the delivery received. For the lowest road distribution costs, this requires the storage to be sized within a range of 22 to 26 tonnes, with some reserve margin. Additionally, a pre-determined number of days of stockholding and the financing costs thereof are included.
  - 8.11.3. Operating and maintenance costs. The costs are based on industry average costs submitted by LPG licensees to the DoE in line with the LPG Regulatory Accounts Manual requirements. Costs are reviewed at least once per annum in consultation with the LPG sector.

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<sup>108</sup> 'LPG pricing zone' refers magisterial districts with similar transport costs from the nearest coastal refinery or designated port of entry grouped into magisterial district zones.

8.11.4. Distribution costs. These are based on road freight rate assessments of the Road Freight Association over a 20-kilometre radius from the filling plant.

8.11.5. Margins. The margins used to calculate the MRP must cover all reasonable costs associated with the storage of LPG, the respective operation, the maintenance of the facilities associated with the respective operation, and capital costs, including a reasonable return for the cylinder-filling plant. The DOE has stated that it will determine and set the margins based on data provided by the licensees and that it will publish guidelines relating to the provision of such data by the licensees.

8.12. Table 11 provides an example of how the MRP is calculated.

**Table 11: Example of MRP determination (September 2016)**

<b>MRGP</b>	<b>In c/ kg</b>	<b>707.33</b>
<i>Plus primary transport costs (zone differential)</i>	8As per schedule from the DME. This will differ from zone to zone. In Gauteng (Zone 09C), for example, since 14 July 2010 until the time of the writing of this report, this is equal to 175.96c/kg for bulk tankers of 22 to 26mt. <sup>175</sup>	175.96
<i>Plus operating expenses</i>	<p>For a cylinder-filling plant with a capacity of 35 000 kg/month, the following operating expenses will be allowed:</p> <p>Personnel expenditure:            Manager: R25 000            Admin staff: R16 000            Plant operator: R3 800            Driver: R9 600            Handlers: R7 600            Secretary: R3 800</p> <p>Company contribution (pension and medical aid): R9 300</p> <p>Other overheads: R45 000</p> <p><b>Total: R120 100</b></p> <p><b>Cost per kg = 12 010 000 ÷ 35 000 = 343.14 c/kg</b></p>	343.14

109 Department of Energy (2010). "Magisterial District Zone Differentials", available at [www.energy.gov.za/files/esources/petroleum/April-2014/Transport-Cost-effective-from-02April2014.xls](http://www.energy.gov.za/files/esources/petroleum/April-2014/Transport-Cost-effective-from-02April2014.xls) accessed on 22 June 2015

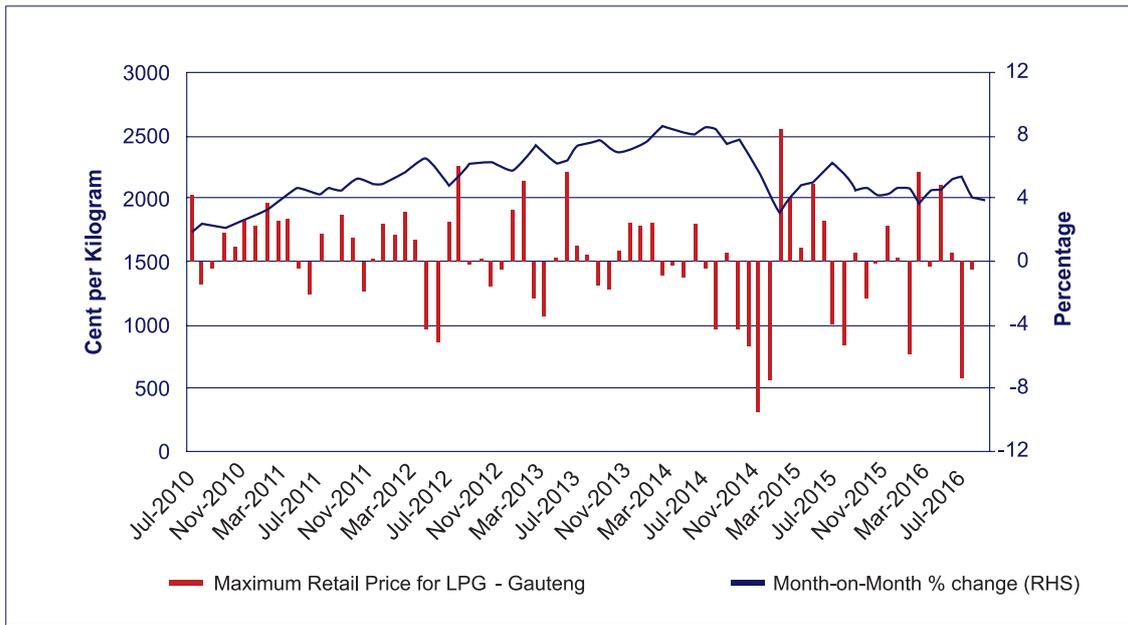
MRGP	In c/ kg	707.33
<i>Plus working capital</i>	Trade debtors for a period of 45 days: 20c/kg Stock costs (10 days): 6c/kg <b>Total 26.00c/kg</b>	26
<i>Plus depreciation</i>	Calculated over a ten-year period. <b>Total assets-land ÷ 10 ÷ 12 ÷ 35 000 = 126.00c/kg</b>	126
<i>Plus gross margin: cylinder-filling plant</i>	The following allowable assets for a 35 000 kg cylinder-filling plant will be included to determine the gross margin:  Asset value:  Site: R1 050 000 Building R2 100 000 Plant R400 000 9 kg cylinders: 6200 x 330 = R2 046 000 19 kg cylinders: 1658 x 500 = R829 000 48 kg cylinders: 730 x 800 = R584 000 Vehicles: R800 000  Less deposits: 8 588 x 150 = R1 459 960  <b>= R6 349 040</b>  <b>ROA (wholesale margin): R6 759 000 ÷ 10 ÷ 12 ÷ 35 000 = 160.93c/kg</b>	160.93
<i>Equals</i>	Subtotal (1)	1539.36
<i>Plus retail margin</i>	15% of subtotal (1)	230.9045
<i>Equals</i>	Subtotal (2)	1770.2678
<i>Plus VAT</i>	14% of subtotal (2)	247.837
<b>Equals</b>	<b>Maximum retail price (rounded to full cent)</b>	<b>2018c/kg</b>

Source: Working rules to set the maximum retail price for LPG<sup>110</sup>

8.13. Figure 23 shows the MRP for the Gauteng zone for the period July 2010 to July 2016. The MRP in October 2015 was 18% higher than the July 2010 price. The maximum realised MRP in the sample period was 2559c/kg the July 2014. The price declined in line with international oil prices and associated local costs like transport and handling costs.

110 South African Petroleum Industry Association (2010). Available: [http://www.sapia.co.za/pdf/legislation/workingrules\\_lpg\\_2010July.pdf](http://www.sapia.co.za/pdf/legislation/workingrules_lpg_2010July.pdf), retrieved on 24 November 2015.

Figure 23: Changes in MRP over time (Gauteng Zone - 2010-2016)

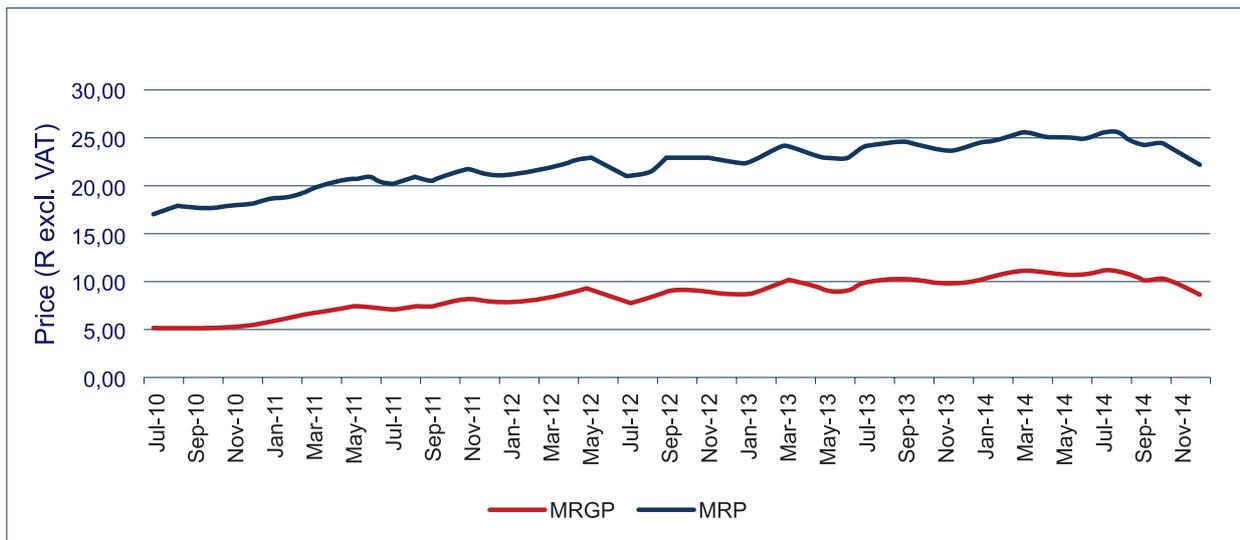


Source: Department of Energy (2016)

**The MRGP and MRP differentials**

8.14. Figure 24 shows the MRP and MRGP differentials. Refineries sell LPG at MRGP which is 2.5 times than MRP.

Figure 24: MRGP and MRP relationship (2010 – 2014)



Source: Commission's calculations<sup>111</sup>

111 Wholesalers include Afrox, Easigas, Oryx, Totalgaz and Reatile. Prices exclude VAT.

## Concerns arising from the pricing regulation framework

8.15. Market participants stated the current pricing structure does not support the growth of LPG use in South Africa. They raised concerns regarding both the current MRGP and MRP. The following paragraphs provide a detailed discussion of these concerns.

### *The lack of incentives provided by the MRGP*

8.16. Market participants have stated that the MRGP is not reflective of: (i) Local demand and supply factors; and (ii) The costs of importing LPG into South Africa. The MRGP does not commercially incentivise refineries to maximise their production of LPG.

8.17. Several concerns were raised on the suitability of the current pricing regime regarding its ability to stimulate growth of the market. As regards supply constraints, several issues were raised regarding the use of the molecules (propane and butane), seasonality, and the ability to import LPG and to produce it locally.

8.18. In terms of propane and butane, it was noted that the current MRGP is set well below the alternative value of these molecules. The MRGP is set at a level that encourages refineries to divert these molecules to other petroleum products. For instance, propane can be used as a feedstock for a propane cracker unit to produce ethylene and butane. LPG producers may find it more profitable to use propane for the production of these highly valued products rather than as a component of petrol and diesel.

8.19. Seasonal changes also influence the decision whether to produce LPG. During the winter months, local fuel specifications enable refineries to blend higher ratios of butane into petrol. Given that the value and profitability of petrol are higher than those of LPG, the MRGP does not provide the LPG producers with an incentive to produce more LPG.

- 8.20. In addition, the MRGP is based on 93 octane movements within the basic fuels price (BFP) mechanism, whereas the import price for LPG is based on Saudi Arabian prices. Given the international market is dominated by Saudi Arabia (it is the largest producer of LPG) and that 50% of LPG traded the world over is directly or indirectly priced relative to the Saudi contract price (“Saudi CP”), LPG producers suggest that the MRGP should be based on import parity pricing principles allowing for the MRGP to track the Saudi CP. LPG producers suggest this could have the added benefit of encouraging importing LPG, particularly given that South Africa is a net importer of LPG.<sup>112</sup>
- 8.21. The DoE stated, the MRGP has little influence on the market participants’ ability to import LPG competitively and efficiently. Market participants are not in a position to import large volumes of LPG yet; the price paid for a small tank will be high. This is further expanded in Section 9.

#### *Charges above MRGP*

- 8.22. The Commission received submissions from [REDACTED] and an LPG distributor with the alias “Joe Soap”<sup>113</sup> to the effect that [REDACTED] was charging above the set maximum refinery gate price. The Commission analysed the pricing data provided by LPG producers to assess if producers were indeed charging above the MRGP. Both [REDACTED] and [REDACTED] were found to have charged above MRGP at certain points in time.
- 8.23. The Commission’s analysis showed that [REDACTED] had charged above the MRGP in the months of July 2010, August 2010 and January 2011. When questioned about these instances, [REDACTED] explained:<sup>114</sup>

*The discrepancies in [REDACTED] sales data arose in months where a sale was recorded in [REDACTED] accounts in a different month from when the transaction was concluded. Where this happened the sales data compares the sale price to the wrong month’s MRGP. There are various causes for this phenomenon: a sale may be concluded in one month but the product be collected in the next month or over an extended period of time; there may also be a delay before the transaction is recorded in [REDACTED] accounts; and there may be credit or debit notes pertaining to corrections (for instance, to reconcile the volume sold and the actual volume collected) that result in adjustments to the sales price.*

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112 Refer to Sasol Oil, Engen and Chevron March 2015 submissions.

113 Refer to August 2014 emails sent by Joe Soap

114 Refer to email by [REDACTED] to LPG market inquiry team, dated 18/09/2015

8.24. [REDACTED] provided evidence of the premium charged by [REDACTED] revealing that the surcharge charged above the MRGP was charged per ton and consisted of: (i) Transport differentials; (ii) An administration fee; and (iii) A gantry fee.<sup>115</sup> When questioned about its reasons for charging above the MRGP, [REDACTED] referred the Commission to *Government Gazette R377 (the "Notice")*<sup>115</sup> paragraph 1.3, stating:

*"Refinery gate price" means the maximum price (excluding any inland transport cost values referred to in paragraph 4) at which a refinery shall be permitted to market those quantities of its production of LPGas which are intended for consumption within the Republic of South Africa, whether such transactions are by means of sales invoiced to another organisation or by transfer pricing between the refining division and another division of the company which owns the refinery.*

8.25. Paragraph 4 of the Notice states:

*It is noted that whilst this refinery gate price (which is determined on the basis of average import values at coast) will apply to all refineries, the price of LPGas supplied from refineries situated inland [i.e. the National Petroleum Refiners (Pty) Ltd (Natref) at Sasolburg (jointly owned by Sasol Oil (Pty) Ltd and Total SA (Pty) Ltd) and Sasol Synthetic Fuels (Pty) Ltd at Secunda] may be increased by the transport cost factor equal to the cost of transporting LPGas from the coast port to the applicable inland destination or manufacturing facility.*

8.26. The Notice clearly stipulates that inland refineries have scope to charge above the MRGP. The DoE explained to the Commission that this exception does not apply only to LPG but to other petroleum products as well. They further submitted that the rationale behind such an exception was linked to the inland refineries incurring an additional cost to transport crude oil from the coast to their refineries and have to be duly compensated.

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115 The Department of Minerals and Energy (2008), *Regulation in respect of the Maximum Refinery Gate Price of Liquefied Petroleum Gas*, Government Gazette No. R377

- 8.27. The Commission notes this reason may be applied where an inland refinery produces LPG using the crude oil approach. Sasol Oil has adopted the CTL approach, meaning that LPG is produced from coal sourced in Secunda. The additional compensation is not linked to the manner in which Sasol Oil produces LPG. [REDACTED].
- 8.28. The surcharges charged by Sasol Oil are not insignificant and will make an impact on a wholesaler's ability to offer its customers a competitive price, as all wholesalers use the MRGP as the base for their price determination. Customers of Sasol Oil are likely to be at a disadvantage compared to competitors who procure LPG from other producers. The extent to which the overall charge for LPG (the MRGP plus the surcharge outlined above) may be deemed high could not be ascertained, as few customers raised this as a concern. It is likely that in some instances these costs are passed on to the end-user.
- 8.29. The Commission also considered the extent to which the current price regulation framework includes any sanctions that may be imposed in the event of non-compliance with the regulated price. The Commission has learnt that no mechanism exists to monitor the MRGP at the refinery and wholesale level and there are no remedial sanctions that may be imposed by the DoE inspectors.<sup>116</sup>
- 8.30. This analysis revealed several issues with the MRGP in its current form. The first is the disincentive it poses for refineries to expand their production and storage capacity of LPG. LPG is a by-product of profitable and valuable molecules that can deliver better returns if used to produce alternative petroleum products. The second disincentive stems from the MRGP being generally lower than the import price of LPG for small import parcels, making the importation of LPG unprofitable.
- 8.31. Regarding the claims relating to overcharges above MRGP, the Commission found evidence confirming these claims. This issue also outlines the lack of clarity among players about what the MRGP should encompass, specifically for inland refineries. Also at issue in this regard is the lack of monitoring of adherence to the MRGP by the DoE. This includes the active monitoring of the MRGP charged by the various refineries in addition to conducting impact evaluations to assess the validity of the MRGP under the current market conditions. The DoE stated, it does not have sufficient capacity to actively monitor the entire value chain as it only has nine dedicated inspectors to monitor the regulated prices of all petroleum products. Further, the DoE has stated that no mechanism exist to monitor implementing the MRGP at the refinery and wholesale level of the value chain.

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116 Refer to email from DoE received on 23 November 2015

### *Concerns raised regarding the MRP*

- 8.32. The concerns raised in terms of the MRP are two-fold. Firstly, retailers raised concerns regarding the current MRP and the perceived high margins enjoyed by wholesalers. In particular, they state that the 15% distributors' margin that they receive from the sale of LPG is not sufficient to encourage the active investment of retailers and distributors in the domestic LPG market.
- 8.33. The Commission learned that the 15% margin generally covers the fixed costs of running an LPG retail site that may or may not include a small cylinder-filling rig and vehicles for delivery. Costs vary depending on monthly LPG throughput and what other products are sold from the site. A dedicated LPG retail site tends to entail higher costs and requires high throughput volumes.
- 8.34. The second issue identified with the MRP relates to the methodology adopted in the MRP Working Rules (2010) document. In particular, the Commission found the MRP working rules are based on an inefficient scenario regarding the utilisation of filling plant assets and manpower. The throughput of LPG is set at 35 tonnes per month, a low level of plant utilisation. Doubling the LPG throughput to 70 tpm (with the correct increases in capital outlays for extra cylinders) could potentially result in major filling plant costs (fixed cost, gross margin and depreciation) being reduced by about 41%.<sup>117</sup> Another concern is that in the published working rules of the MRP, the annual cost adjustments for plant operations have not been implemented, and cylinder maintenance costs are not explicitly listed as part of the budgeted costs. The DoE failed to update the MRP methodology to better reflect the current dynamics in the sector.

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117 Refer to LPG Filling Plant Throughput Analysis

- 8.35. There are concerns about the lack of monitoring of the MRP. The monitoring takes place at the petrol station retail level, making the monitoring of LPG prices applicable only at filling stations. Only nine DoE inspectors are assigned in all provinces, putting in question the capacity and effectiveness of the DoE to monitor its regulated prices. Where overcharging is found, the remedial action available to the DoE inspectors is to issue notice in terms of Section 2A(3) of the Petroleum Products Act. Specifically, the applicable penalty for non-compliance is a punitive penalty of R1 000 000, 00 or imprisonment for a period not exceeding 10 years, or both.<sup>118</sup>

### Commission's findings

- 8.36. In summary, the Commission's findings with respect to pricing regulation are:
- 8.36.1. MRGP in its current form is not creating an incentive for refineries to expand their production and storage capacity of LPG.
  - 8.36.2. MRGP and MRP methodology had not been revised since implementation in 2010 despite the regulations allowing for periodic reviews<sup>119</sup>.
  - 8.36.3. There is evidence of prices charged above MRGP and MRP. There is also lack of clarity among market players, especially with regards to inland refineries, about what the MRGP should encompass.
  - 8.36.4. The DoE lacks the ability to monitor adherence to the MRGP and MRP. The DoE stated it does not have sufficient capacity to actively monitor the entire value chain as it only has nine dedicated inspectors to monitor the regulated prices of all petroleum products including LPG. The nine inspectors monitor over 5 112 service stations<sup>120</sup> in the country and annually they reach just under 2 000 service stations implying that it might take more than two years before another inspection takes place.<sup>121</sup> This lack of monitoring results in some pricing abuse by the market participants. The sanctions of violating maximum pricing are ineffective as DoE does not have prosecutorial powers.

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118 Refer to email from DoE received on 23 November 2015

119 Draft review of 2012 had not been finalised

120 Matsho, Jim (2010) – The Retail Petrol Industry in South Africa. [uzspace.uzulu.ac.za/bitstream/handle/.../Retail%20petrol%20industry%20Matsho.pdf](http://uzspace.uzulu.ac.za/bitstream/handle/.../Retail%20petrol%20industry%20Matsho.pdf) Accessed 3 March 2017

121 Meeting with DoE on 11 November 2016

## *Industry Feedback*

- 8.37. In light of the findings above, the Commission considered the following: (i) The extent to which the DoE was still best placed to monitor and implement pricing regulation in the sector; and (ii) The appropriateness of price deregulation in the sector.
- 8.38. Regarding the question whether DoE is best placed to deal with the function of price regulation and monitoring, six market participants were in support of the DoE remaining the relevant authority. [redacted] were of the view that the introduction of an alternative party might cause a duplication of the DoE's functions. [redacted] proposed that the DoE should increase its capacity to best cater for the relevant regulation. [redacted] were not in favour of maintaining the DoE as the custodian of pricing regulation and suggested that this function be moved to NERSA.
- 8.39. Nine market participants were in support of price deregulation while none voiced any concerns about it. [redacted] Those in support emphasised that the MRGP in particular increased the cost of doing business and this led to pricing abuse by wholesalers, [redacted] while [redacted] submitted that price deregulation should take place sooner rather than later.

## Recommendations

8.40. The Commission recommends the following:

8.40.1. NERSA must undertake pricing and the monitoring of MRGP and MRP.

8.40.2. Price deregulation after supply constraints have been resolved. The reason for this is that the immediate deregulation of pricing may cause price increases above the current MRGP and consequently MRP, given the significant regulatory bottlenecks identified as well as the supply constraints faced by the sector. To circumvent this concern, the Commission is of the view that import efficiency and optimisation should be prioritised. This would result in an increase in import storage capacity and make it possible to accommodate larger LPG parcels, allowing for an increase in LPG supply domestically.

8.40.3. To give effect to the recommendation in 8.40.2., the DoE must undertake a study on how price deregulation in the LPG industry can be achieved.