A business model to overcome barriers to entry in the South African downstream petroleum industry

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Abstract
The South African downstream petroleum industry was in the hands of Whites and Multinational Oil Companies during the apartheid era. Many Historically Disadvantaged South Africans (HDSA's) were excluded from the mainstream industry through, among other instruments, laws passed by the government such as the Petroleum Products Act 120 of 1977. Against this background, the newly elected democratic government instituted a policy process aimed at restructuring and transforming the petroleum industry to allow HDSA's to enter the industry, in order to achieve sustainable presence, ownership and control of approximately a quarter of the industry by previously disadvantaged individuals. Since the introduction of this process, which culminated in the release of the White Paper on the Energy Policy of the Republic of South Africa (1998), little progress has been made towards achieving this government's key policy objective. Instead, there is still little entry into the industry by HDSA's, and the Black Oil Companies (BOC's) that are in the industry continue to struggle to increase their market share. This paper discusses the possible constraints on achieving the objective, by looking at barriers that impede HDSA's from entering the industry and BOC's from increasing their market share significantly. There are three possible categories of barriers in the downstream petroleum industry, namely, economic barriers to entry, non-economic barriers, and cross-sectoral barriers to entry, which are discussed in this paper. These categories of barriers prevent entry by HDSA's into the industry and hinder BOC's from increasing their market share. To circumvent these barriers, and in order to make progress towards achieving the government's key policy objective of control by approximately a quarter of the HDSA's, a black economic empowerment model was developed. This model seeks to increase the market share of the BOC's and the presence of the HDSA's in the industry in a sustainable way without significantly harming the multinational oil companies. It foresees Govern-ment licensing BOC's to purchase up to 5% of the existing South African fuel demand at an Import Parity Price (IPP) that is significantly less than the Basic Fuel Price (BFP). The reason for this difference is that the BFP is based upon the supply of the totality of South Africa's needs from elsewhere, whereas the IPP merely supplies up to 5% of South Africa's needs, and can therefore source the product from refineries that are closer, so reducing the transport component. The impact of the loss of 5% of the internal market for petrol and diesel on the revenues of the MOC's is less than 0.5%, because the difference between the IPP and BFP is a small fraction of the BFP.

Keywords: downstream petroleum industry, petroleum products, basic fuel price, import parity price, Energy White Paper

1. Background

The 1994 democratic breakthrough opened opportunities for the Historically Disadvantaged South Africans (HDSA's), who had been excluded from participating in some of the industries in the country, particularly the downstream petroleum industry. In the previous dispensation, that is, before 1994, the Government dealt with issues relating to the petroleum industry clandestinely. To ensure opacity, the Government passed the Petroleum Products Act No 120 of 1977. This Act, 'prohibited the publication, releasing, announcement, disclosure, or conveyance of information or making of comment regarding the source, manufacture, transport, destination, storage, consumption, quantity or stock, level of any petroleum product acquired or manufactured or being acquired or manufactured in the Republic'.

This Act therefore made it difficult for those who were not in the industry or Government, particularly Blacks, to acquire information in order to enter the mainstream industry. Towards, but most notably

after, the 1994 elections in South Africa, Blacks formed a number of oil companies, which are struggling to penetrate and capture the market, because of various constraints which were set up during the apartheid era and which remain in place.

In an attempt to address these constraints, and to allow Blacks to enter the industry, a consultative process was instituted which culminated in the drawing up of a policy document. This document was based upon the findings of a wide-ranging study that involved most of the primary role players, and was published in the form of a Green Paper in 1994. Comments received on this paper led in due course to the White Paper (1998), which outlined the Government's key policy objective as the need to achieve, 'sustainable presence, ownership or control by historically disadvantaged South Africans of approximately a quarter of all facets of the liquid fuels industry or plans to achieve this' (White Paper, 1998: 81). Since the publication of this document in 1998, little progress has been made to achieve this key policy objective.

In an attempt to ascertain why the objective has not been achieved, barriers to entry in the industry are discussed. The paper seeks to outline those barriers and will approach the discussion, by briefly unbundling the policy objective, and discussing the key elements of the milestone, namely; sustainable presence, ownership and control by a quarter of previously disadvantaged South Africans.

The paper will outline the barriers to entry in all the three sub-sectors of the downstream industry, namely; refining, marketing and retailing. It then presents a business model for black economic empowerment, which may assist in realizing the key objective of the White Paper by making it possible for HDSA's to enter the downstream liquid fuels industry in a sustainable way. It is an important finding that it should be possible for HDSA's to take up at least 5% of the internal market – slightly more than 1% impact upon the revenues of the existing refining companies.

2. Profitability of the downstream petroleum industry

The petroleum industry is an important and crucial component of the economy in just about all countries, including South Africa. The contribution of the industry to the South African economy is huge. For instance, according to the 2002 South African Petroleum Industry Association (SAPIA) report, the total assets of the members of SAPIA were R41 451 million in December 2001, and the total income tax payments to the state was R1.68 billion in the same year, as shown in Table 1 below. The industry was responsible for collecting a range of taxes on fuel, and total payments to the State during the year amounted to R17.3 billion.

Table 1 also reflects the wealth of SAPIA members, which in practice also translates into market power and dominance by the member companies. Their wealth and continuous increase in income is buttressed, among other instruments, by the profit margins framework (called the Marketing of Petroleum Activities Return – MPAR), which regulates the returns of the oil companies in the marketing and retailing sub-sectors, excluding refining activities.

This formula does not cover the refining sub-sector, since this sub-sector was deregulated in 1991. In other words, the MPAR involves petroleum related activities outside the refinery gate and other related activities, namely, storage, transportation, distribution, marketing and administration.

The profit margin, in terms of the MPAR formula, is determined to yield a benchmark industry average of 15% rate of return (10%-20% range with a one year lag) on the depreciated book value of assets for the year ended December. (Lambrecht and Doppegieter, 1993). If the returns go above 20%, then a margin decrease is indicated, and if it falls below the 10% floor, then a margin increase is

Table 1: Aggregate financial results of SAPIA members
Source: SAPIA Report, 2002

	1992	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
					Years ended 31 December					
Operating profit (R/m)	1 307	2 108	1 877	1 649	2 402	2 229	1 987	2 965	5 704	5 687
Interest paid (R/m)	(53)	(173)	(250)	(323)	(447)	(454)	(683)	(389)	(789)	(673)
Income tax (R/m)	(503)	(596)	(582)	(402)	(568)	(474)	(419)	(667)	(1249)	(1 682)
Net income (R/m)	751	1 339	1 045	924	1 387	1 301	885	1 909	3 666	3 332
Total assets (R/m)	9 389	10 845	13 324	14 466	17 634	18 597	19 546	20 492	34 157	41 451
Capital expenditure (R/m)	1 652	1 558	1 613	1 389	1 377	1 455	1 511	1 542	1 763	2 627
After tax return on assets (%)	8.1	12.3	7.8	6.4	7.9	7.0	4.5	9.3	10.7	8.0
Sales volumes (bn litres)	21.1	23.6	24.7	28.7	29.4	33.8	31.0	26.6	26.7	26.9
Net income after tax (c/l)	3.6	5.7	4.2	3.3	4.7	3.8	2.9	7.2	13.7	12.4

indicated (Industrial & Petrochemicals Consultants, 2001:26). A problem with this formulation is that it is impossible to check on the calculation of the book value of the assets.

The calculation is undertaken by SAPIA, who face the problem that their members have different accounting standards and thus different definitions of book values and probably also different policies regarding depreciation. It is understood that auditors are prepared to sign off the book value estimates, but we can find no evidence that the auditors are able to overcome the problems outlined above. The problem with the asset value calculation is illustrated in Table 1. The year-on-year change in assets bears no relationship to the annual capital investment, and often increases by over 25% in a single year for no apparent reason.

3. Government's key policy objective

The HDSA's who are in the industry face major challenges and constraints that serve to impede entry into the downstream petroleum industry. These challenges and constraints include barriers to entry such as the restrictive regulatory and legal framework within which oil companies in the downstream petroleum industry operate. They also include economic and non-economic factors, which deter entry into the industry.

The Government's key policy objective is to achieve sustainable presence, ownership, and control by approximately a quarter of HDSA's in all facets of the industry. In an attempt to achieve this objective, a Charter on the Empowerment of HDSA's in the Petroleum and Liquid Fuels Industry, published in November 2000 (hereinafter referred to as the Empowerment Charter), was agreed upon by the main players in the industry, including; the Government, SAPIA members and African Minerals and Energy Forum (AMEF) member companies. The charter makes some proposals on how both the established companies and the Black Oil Companies (BOC's), together with the Government, could achieve sustainable presence, ownership and control of approximately a quarter of the facets of industry by HDSA's.

The Empowerment Charter identifies a number of barriers such as the refining capacity as a weakness in HDSA companies, and suggests that the oil refiners should consider amongst other things, selling shares in their facilities to BOC's. It should be added that what is contained in the Charter is within the framework of a number of pieces of legislation, such as the Preferential Procurement Act No 5 of 2000, the Employment Equity Act No 55 of 1998, the Skills Development Act No 97 of 1998, and the Competition Act No 89 of 1998.

Even though this Charter is not sufficient to address all the issues of sustainable presence, ownership and control by HDSA's of a significant pro-

portion of the industry, it highlights and suggests major aspects such as capacity building for BOC's, financing, terms of credit to HDSA's, public and private sector procurement, employment equity, and access and ownership of joint facilities.

The White Paper on the Energy Policy of the Republic of South Africa (1998) also expresses the desire by Government to remove the impediments, in order to allow previously disadvantaged people to play a significant role in the petroleum industry. It also expresses the Government's determination to restructure the petroleum industry in order to achieve significant domestic ownership or control by HDSA's and to redress the past imbalances.

It recognises the heavy domination of the petroleum industry by Whites, who are a majority in the entire value chain. This is exacerbated by the fact that control and ownership of the industry rest in the hands of the Multinational Oil Companies (MOC's).

4. Barriers to entry in the downstream industry sub-sectors

It appears that HSDA's face a number of barriers in entering the downstream industry. We seek to understand the nature of these barriers to entry and the factors that prevent new entrants from increasing their market share significantly.

A barrier to entry in the context of the South African downstream industry may be viewed as, 'a socially undesirable limitation to entry of resources, which are due to protection of resource owners already in the market' (Waizsacker, 1980:13). This may, for example, include the cost that new entrants or BOC's in the South African petroleum industry incur such as start-up capital, and the disadvantage of competing with well established companies that have created brand loyalists.

The absence of socially undesirable limitations to entry will allow indigenous people or HDSA's 'easy entry', 'a situation in which there is no impediment to entry of new firms, or in which established firms possess no advantages over potential entrants' (Bain, 1962:11). In the downstream petroleum industry of South Africa, there are three categories of barriers to entry, namely; economic, non-economic, and cross-sectoral barriers.

Economic barriers are those barriers in which financial requirements are placed above any other requirement for entry to be possible. The economic barriers to entry include *inter alia* the following:
(i) Access to finance to fund projects and run businesses effectively. This also includes access to the means of financing projects and providing collateral to lending institutions such as the banks and bridging institutions such as Khula Finance. The inaccessibility of finance is a barrier for potential entrants and BOC's to pursue projects that require large capital. For instance,

to build a service station, BP requires that the prospective operator should make an appropriate capital investment of approximately R2 million for working capital and start up costs (*Sunday Times*, 14 July 2002).

(ii) Transport costs incurred in the distribution and marketing of fuel. For example, the cost of transporting petroleum products through the Petronet pipeline from Durban to Sasolburg is R0.11 per litre (Industrial and Petrochemicals Consultants, 2001:20). This means that to transport a hundred thousand litres would cost the company about R11 000. Building a new pipeline is more expensive. For instance, according to Industrial and Petrochemicals Consultants (2001), the expansion cost planned by Petronet for its pipeline will cost about R200 million and a new pipeline would cost a R1 billion.

(iii) Extensive advertising is also a barrier because it assists a company to create brand loyalists, and leave new entrants to struggle for customers.

(iv) The other economic barrier is sunk costs. Sunk costs are generally defined as the capital or costs that the investor cannot recover upon exit from the market, and are in many instances, part of the initial costs. Sunk costs are regarded as a barrier to entry because (a) would-be HDSA's entrants would take sunk costs into consideration if they decide to enter; (b) BOC's that are already in the industry would consider them if they decide to exit the market; (c) and above all, the money invested is irrecoverable after entry and upon exit.

(v) Vertical Integration is also a barrier to entry. The vertical integration of a company arises when a company gets involved in the entire value chain of the industry or stages of production, from refining, marketing, and retailing. The integration of a company vertically, sometimes called economies of sequence, in the downstream petroleum industry would mean that a company engages in the retailing, marketing and refining sub-sectors, and leads to one sub-sector subsidising the other sub-sec-

tor(s). The company involved in these sub-sectors will be enjoying the benefits of economies of sequence and impedes entry to other sub-sectors.

The non-economic barriers are those barriers that are not financial in nature and include among others:

(i) Geographic location of outlet. The BOC's or new entrants are at a disadvantaged position since their service stations are built at un-strategic places, and this affects performance of the site. Subsidiary to this is the fact that the strategic sites are already having service stations, of which a majority of them belong to the MOC's.

(ii) The Service Stations Rationalization Plan (1962). The number of new service stations was regulated by the Service Station Rationalisation Plan (Ratplan), which determined the number of new stations that could be built in a year. According to this plan, the purpose of limiting the number of service stations was to promote throughput at service stations and thereby economies of scale (White Paper, 1998).

(iii) Price control. In terms of the Petroleum Products Act No 120 of 1997, the Government regulates and determine the price of petrol through Retail Price Maintenance. Price control was introduced during the apartheid era, with a view of ensuring security of supply of petroleum products by encouraging firms to cut costs in order to raise profits. This does not allow for the setting of competitive prices by BOC's as a measure to increase their share. This is a barrier both to entry by HDSA's and growth of the BOC's. For example, the diesel market share of BOC's is always higher compared to petrol as reflected in Table 2 for the years 1999, 2000 and 2001, a success which is the result of uncontrolled or competitive diesel price, and because diesel can be discounted.

(iv) Import control. In terms of the Petroleum Products Act of 1977, refined petroleum products could only be imported only if there is domestic shortage.

Table 2: Market shares of petrol and diesel
NB: Table adapted from the 2002 SAPIA Annual Report

Company	1999		2000		2001	
	Petrol	Diesel	Petrol	Diesel	Petrol	Diesel
Afric Oil	0.05	0.55	0.02	0.19	0.04	0.19
Caltex	18.05	16.50	17.89	15.82	17.43	16.69
Engen	24.17	23.33	26.78	27.95	27.02	27.25
Exel	1.38	3.80	1.86	4.98	2.23	4.84
Shell	17.99	18.99	17.90	18.33	17.53	17.80
Tepco	0.40	2.36	0.38	2.90	0.33	2.22

(v) The Marketing of Petroleum Activities Return (MPAR) regulates profit margins. The MPAR regulates the profit margins of oil companies at marketing and retailing sub-sectors, excluding refining activities. This formula is a barrier for both would be entrants and the BOC's, because the profit of a company is limited within the benchmark industry average of a 15% rate of return (a 10% – 20% range with a one year lag) on the depreciated book value of assets. This does not allow new entrants to grow because it limits their profitability within the 10% to 20% range before an adjustment could be made.

This formula is also unjust because it allows those who have massive assets to benefit more than those with small or little assets, the BOC's.

The cross-sectoral barriers are those economic or non-economic barriers that are found in two or all sub-sectors of the industry. There are a few cross-sectoral barriers in the downstream petroleum industry, which include among others:

(i) Lack of regulatory support and material support by the Government. The Government has also not provided material support through its own enterprises or even provide a subsidy to BOC's, albeit it gave the synthetic fuel (synfuel) producers, Sasol and Total support. For example, the Government owns the transport network company, Petronet the subsidiary of Transnet, which owns the pipelines from the port in Durban to the in-land, but does not use these to provide support to BOC's. With regard to subsidy, the Government did not improvise a subsidy method for BOC's or new entrants similar to that which was provided to Sasol. According to *Business Day* (12 June 2003), the Government has been subsidising Sasol and Total for their Petronet pipeline transport costs, and this will be taken away. This can be passed to the BOC's for a few years, to aid black economic empowerment.

(ii) Environmental Regulation. This form of regulation also reduces the number of entrants into the refining sub-sector, since the National Environmental Management Air Quality Bill 2003, empowers a municipality to identify, in terms of a by-law, substances or mixtures of substances in ambient air which in any other way, present or is likely to present a threat to health or the environment in the municipality.

Since refineries emit a number of pollutants that are a threat to the environment, they will be affected by such by-laws or regulations as may be identified and regulated by the municipality. This also means that, the aforementioned Act, in order to reduce a controlled substance the refiner would be required to lower production output per day to comply with the required standards, or use expensive technology to remove pollutants from the raw products. This might also pose a problem between the refiner who wants to increase production and profit, and the local community, which needs to protect itself from health risks and the surrounding environment.

In summary, the downstream industry of South Africa has economic, non-economic, and cross-sectoral barriers to entry, which contribute to the failure by Government to achieve sustainable presence, ownership, and control as stated in the White Paper.

5. A business model for Black Economic Empowerment

In order to see if it was possible to find a way to cross the barriers to entry identified in the previous section, a business model was set up which incorporated a simple incentive to the MOC's to permit HDSA's to enter the downstream industry in a meaningful and sustainable way.

This model aimed at capturing at least five percent (5%) of the market share for refined products, without significantly harming the established oil companies through importation. In developing the business model, we start by explaining the structure of the Basic Fuels Pricing Mechanism.

5.1   Basic Fuels Price calculation

The Basic Fuels Price (BFP) of petrol is based on a 50% spot price assessment by Platts in the Mediterranean refining area, and a 50% Platts spot price assessment in Singapore. The price of diesel and paraffin is based on a 50% Platt's spot price assessment in the Arab Gulf, and a 50% Platt's assessment in the Mediterranean refining area. The reason given for the difference in approach is that there is insufficient spare petrol in the Gulf to base local pricing on that source.

The international component of the BFP also includes Free On Board (FOB), demurrage, ocean loss, stock financing and coastal storage. The standard international freight tariffs from the Worldscale publication for voyages from the Mediterranean to South African ports are used as a base.

The latest market trends for different types of vessels are incorporated into a market rate, which is then applied to the standard tariff or Worldscale to determine the freight cost. The insurance tariffs for different voyages according to prevailing risks to and from different areas are determined by Lloyds of London. Moreover, the evaporation loss of 0,3% for petroleum products is accepted as normal and is not insurable, thus the loss has to be borne by the buyer who therefore has a financial loss of 0,3%.

The BFP calculations of the price of Mogas 95 Unleaded in May-June 2003 are shown in Table 3.

The average BFP was 185.115c/litre, and the R:$ rate was 8.0144 for the period.

Table 3: Average BFP for 95 unleaded for the period 26 May to 25 June 2003

Platts FOB Med Mean ($/T)	264 065
Platts FOB Med Mean ($/Bbl)	31 625
Platts Singapore Mean ($/Bbl)	31 005
50% Med and 50% Singapore	31 315

In South African cents per litre

FOB	157 074
Sea Freight	20 461
Demurrage	1 067
Insurance	0 268
Cost with Insurance and Freight (CIF)	178 869
Ocean Leakage	0 537
Wharfage	1 836
Landed Cost at average of SA Ports	181 242
Coastal Storage	2 083
Financing Cost	1 790
Basic Fuels Price	185 115

(b) BFP for Diesel 0.3%

The Diesel (Gasoil) 0.3% sulphur is calculated based on 50% of the Med FOB mean value for Gasoil 0.2% ($/ton) and 50% of the FOB Arab Gulf mean value for Gasoil 0.25% ($/Bbl), plus the quoted Arab Gulf spot premium for this grade. Table 4 shows the average for Diesel 0.3% in May-June 2003.

5.2 The supply of refined products

At the present moment, there is no oil company that imports refined products. Most of the petroleum products are refined locally. The total production in 2001 was 12 674 million litres of petrol, and 8 539 million litres of diesel as shown in Figure 1. The synfuel producers contributed 4 577 million litres of petrol, and 1 769 million litres of diesel to the combined total production.

However, production was in excess to internal demands, and 1 473 million litres of petrol and 1 130 million litres of diesel were exported out of the Southern African Development Community (SADC) zone. The refineries therefore exported about 18% of their total production outside the SADC zone.

Some excess capacity is needed to meet seasonal peaks in demand. In Southern Africa, there is normally an increase in demand in summer for petrol for vacation motoring and in spring for diesel for agricultural production. However, the excess consumption during these peak periods is significantly less than nearly 20% of the annual demand,

Table 4: Average BFP for diesel 0.3% in May-June 2003 (according to DME formula)

Platts FOB Med Mean ($/ton)	223 571
Platts FOB Med Mean ($/Bbl)	29 969
Platts FOB Arab Gulf Mean ($/Bbl)	26 573
Platts Premium FOB Arab Gulf Mean ($/bbl)	1 320
50% Med and 50% Arab Gulf	26 573

In South African cents per litre

FOB	145 297
Freight	22 227
Demurrage	1 195
Insurance	0 253
C I F	168 972
Ocean Leakage	0 507
Landing & Wharfage	1 836
Landed Cost at average of SA Ports	171 315
Coastal Storage	2 083
Financing Cost	1 692
Basic Fuels Price	175 090

so in effect there is a surplus to be exported throughout the year.

It is questionable whether this surplus will continue. Growth in demand for liquid fuels has been low. SAPIA has predicted future increases in demand, and shifts in the capacity balance, as shown in Table 5, from which it is clear that a significant excess will remain for the foreseeable future, even in the face of a higher-than-normal growth in demand.

The refiners sell their excess products to other countries at an Export Parity Price (EPP), which is not declared but which must be much lower than the Import Parity Price (IPP). This we can tell if we reverse the calculations shown in Tables 3 and 4 above. For example, in June 2003 the average
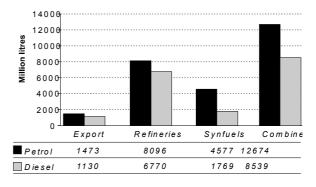

	Export	Refineries	Synfuels	Combine
■ Petrol	1473	8096	4577	12674
□ Diesel	1130	6770	1769	8539

Figure 1: Petrol and diesel production and export in 2001

Table 5: Inland demand /Refining capacity balance (millions of litres)
Source: SAPIA 2002 Annual Report

Products	2001 Refining capacity actual	2001 Demand actual	2001 Surplus/ (shortfall) actual	2005 Refining capacity	2005 Low growth demand	2005 Low growth surplus/ shortfall	2005 High growth demand	2005 High growth surplus/ shortfall
Petrol	12674	11201	1473	13190	11239	1951	12 329	861
Diesel	8539	7409	1130	9543	7926	1617	8663	880

price of Unleaded Mogas 95 at the refinery gate in Singapore was 155.519 SA c/l. If the local refiners were to export their petrol to Singapore, their FOB export price would have to be 131.350c/l to compete, as shown in Table 6. Similarly for 0.3% sulphur diesel the average Med price of Gasoil 0.25% sulphur was 163.866 c/l. Local refiners would sell diesel at the FOB export price of 120.259 c/l to sell their diesel, and that would require them to improve sulphur levels from 0.3% to 0.25%, which might bring the FOB price even lower. The calculation is shown in Table 7.

Table 6: Average EPP of 95 Unleaded bound for Singapore, June 2003

Singapore Unleaded (US$/Bbl)	31.005
In South African cents per litre	
Singapore Price	155.5191
Wharfage	1.836
Sea Freight	20.461
Demurrage	1.067
Insurance	0.268
C.I.F	131.8871
Ocean Leakage	0.537
Export Parity Price	**131.3501**

Table 7: Average EPP of 0.3% sulphur diesel for Med, June 2003

Average Platts Med (US$/Bbl)	29.969
In South African cents per litre	
Med Price	150.511
Wharfage	1.836
Sea Freight	26.461
Demurrage	1.195
Insurance	0.253
C.I.F	120.766
Ocean Leakage	0.507
Export Parity Price	120.259

5.3   Import Parity Price

The prices of products in South Africa are based on the Basic Fuels Price (BFP), which assumes that there is no refining industry in South Africa, and all products are imported as refined from the Mediterranean, Arab Gulf and Singapore. However, South Africa has a local refining industry and could import small quantities of products without upsetting the industry. The Import Parity Price (IPP) would be lower than the BFP as can be seen in Tables 8 and 9.

(a) IPP for 95 Unleaded, Ex Arab Gulf

The Import Parity Price for 95 Unleaded imported ex-Arab Gulf, would be cheaper than the BFP because there would be no component of the price derived from the far more expensive Singapore product, and lower freight charges. The average IPP of 95 Unleaded from the Gulf was 162.64c/l as shown in Table 8, which is cheaper than 95 Unleaded calculated at the BFP in the same month, June 2003, 185.115c/l, by about 22.5c/l.

Table 8: IPP for 95 Unleaded, Ex Arab Gulf (on average in June 2003)

FOB Jebel Ali Premium Unleaded (in US dollars per barrel)	28.225
In South African cents per litre	
FOB	140.07
Sea Freight	15.36
Demurrage	1.05
Insurance	0.23
C.I.F	157.71
Ocean Leakage	0.47
Wharfage	1.84
Landed Cost	159.02
Coastal Storage	2.08
Financing Cost	1.54
Import Parity Price	162.64
Basic Fuels Price	185.115

(b) IPP for Diesel 0.3% Ex Arab Gulf

The price of diesel from the Arab Gulf is 164.989c/l as shown in Table 9, which is 10.11 cents per litre cheaper than the BFP in June 2003. In this case, the difference between the BFP and the IPP is not as great as in the case of petrol, because there is a

component of Gulf diesel pricing in the BFP calculation. Nevertheless, because it will always be cheaper to source small quantities of diesel from the Gulf than from the Med, the IPP will always be lower than the BFP.

Table 9: IPP for Diesel 0.3%, Ex Arab Gulf (on average in June 2003)

Platts Arab Gulf Gasoil 0.25% Mean (US$/Bbl)	26.850
Platts Arab Gulf Premium Mean (US$/Bbl)	1.33
In South African cents per litre	
FOB	140.244
Sea Freight	17.424
Demurrage	1.118
Insurance	0.243
C.I.F	159.030
Ocean Leakage	0.480
Wharfage	1.840
Landed Cost	161.349
Coastal Storage	2.080
Financing Cost	1.560
Import Parity Price	164.989
Basic Fuel Price	175.090

5.4   The business model

Based upon the above findings, it is possible to propose a sustainable business. In principle, a new entrant could import small quantities of products directly from the Gulf. The quantities imported could not be very great, because there is comparatively little excess capacity in the Gulf refining sector. Nevertheless, it could certainly amount to 5% of the existing inland markets for refined products excluding synfuels, that is, about 400 million litres of petrol and 350 million litres of diesel. The products could be landed at the IPP and thus give sufficient margin relative to the BFP to sustain the business.

If the new entrant was permitted to import fuel directly, then it would displace the existing products from the South African market, which would then have to be exported. As we have seen, considerable export of products already takes place, so all that would be necessary is for Government, in issuing permission to the new entrant to import fuel, is a request to the refining industry to increase exports by an equal amount.

However, as we have seen, the EPP is even lower than the IPP. There would be little point in importing products at a higher price than the EPP. It would be better for the refining industry if the would-be importer was permitted to purchase fuel that would have been exported from the refiners at a price above EPP. The refiners would see a higher netback than exporting it at the EPP, and the new entrant would have a product for sale at possibly even lower than the IPP, although as a small player in the market, it would probably not have the negotiating power to purchase it at significantly below the IPP.

The impact of the State permitting such purchases from the existing refiners would be minimal. If the new entrant reduced the market share of the refiners by five percent (5%) as shown in Table 10 and Table 11, the impact on the revenue of the refiners will be minimal, namely 0.5% for petrol and 0.26% for diesel.

The market share and revenue figures exclude the products and revenue of the local synfuel companies, namely Sasol and PetroSA. Tables 10 and 11 also show that new entrant costs for the purchase of petrol would be R538.3 million and R574.2 million for diesel, or a total of R1112.5 million.

However, the added margin of the new entrant, relative to those who would purchase fuel at the BFP from the refineries, would be R74.4million in respect of petrol and R35.1million for diesel, or a total of R109.5 million. We believe this should provide sufficient competitive advantage to the new entrant to enable him to overcome the barriers to entry identified in previous sections, in establishing a business in the downstream distribution of liquid fuels.

This model would circumvent the barriers to entry identified in the previous sections. For example, economies of scale would be discounted since there is no similar business that specifically deals in products priced at the IPP. The same applies to other entry barriers such as, environmental regulations (the new entrant would not refine products), geographic location of outlets (new business sell to some of the wholesale/supermarkets outlets), extensive advertising (no competitors, therefore advertising would be average) and sunk costs.

6.   Conclusions

The petroleum industry of South Africa is not deregulated or liberalized, since there is Government intervention through regulatory instruments, which also include voluntary agreements entered into between oil companies.

The agreement that affected entry was among other instruments the Ratplan, which limited the number of new entrants at the retail-sub-sector level. This undoubtedly acted as an entry barrier since only a limited number of entrants were allowed to enter the sub-sector.

There are economic barriers to entry, non-economic barriers and cross-sectoral barriers, which impede both entry by HDSA's and growth of BOC's. The above developed business model

Table 10: Refiners and new entrant revenue and market share for petrol
BFP 185.11c/l; IPP 162.64 c/l; EPP 131.55c/l

Refiners before entry						
Sales in bn litres		*Market share (%)*		*Revenue (R/m)*		
Local	Export	Local	Export	Local	Export	Total
6.623	1.473	100	100	12259.8	1934.8	14194.6

New entrant

Sales in bn litres		*Market share (%)*		*Costs (R/m)*		
Local	Export	Local	Export	Local	Export	Total
0.331	-	5	0	538.3	-	538.3

Refiners after Entry by the New Entrant

Sales in bn litres		*Market share (%)*		*Revenue (R/m)*			
Local	Export	Local	Export	Local	Export	Total	Loss (%)
6.623	1.473	95	100	12185.5	1934.8	14120.2	0.52%

Table 11: Refiners and new entrant revenue and market share for diesel
BFP 175.09c/l; IPP 164.99c/l; EPP 120.26c/l

Refiners before entry by New Entrant

Sales in bn litres		*Market share (%)*		*Revenue (R/m)*		
Local	Export	Local	Export	Local	Export	Total
6.966	1.13	100	100	12196.8	1358.9	13555.7

New Entrant

Sales in bn litres		*Market share (%)*		*Costs (R/m)*		
Local	Export	Local	Export	Local	Export	Total
0.348	-	5	-	574.2		574.7

Share of Refiners after entry by the New Entrant

Sales in bn litres		*Market share (%)*		*Revenue (R/m)*			
Local	Export	Local	Export	Local	Export	Total	Loss (%)
6.966	1.13	95	100	12161.6	1358.9	13520.6	0.26%

intends to circumvent most of the identified barriers in order to achieve sustainable presence, ownership, and control by a quarter of HDSA's in the industry. Moreover, the model advocates for less Government involvement in the downstream petroleum industry, although it should approve or grant an import permit, and should maintain the *status quo*.

The model propounds an idea in which the HDSA's play a crucial role and spearheads economic empowerment for themselves. We believe that this model provides a strategic entry for HDSA's and circumvents most of the identified barriers, without significantly harming the MOC's that will continue to enjoy a ninety-five percent market share, and would continue to export products and generate huge returns, without competition from the new entrant.

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