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## GENERAL NOTICE

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### NOTICE 192 OF 2013

#### DEPARTMENT OF ENERGY

#### **DRAFT STRATEGIC STOCKS PETROLEUM POLICY AND DRAFT STRATEGIC STOCKS IMPLEMENTATION PLAN**

The Minister of Energy, in terms of Section 17 of the National Energy Act (Act No.34 of 2008), hereby publishes the Draft Strategic Stocks Petroleum Policy and Draft Strategic Stocks Implementation Plan in the Schedule hereto, for public comment.

Members of the public are invited to submit to the Minister, within 60 days from the date of publication of the notice in the Gazette, written comments to the following address:

By post to: The Department of Energy  
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Hand delivered at: 192 Visagie Street, Corner Paul Kruger and Visagie Streets, 6<sup>th</sup> Floor.

Any inquiries in connection with the Draft Strategic Stocks Petroleum Policy and Draft Strategic Stocks Implementation Plan can be directed to Mr Jabulani Ndlovu or Ms Zombango Nondabula at (012) 406 7520/76/72.

Comments received after the closing date may not be considered.



**energy**

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Department:

Energy

**REPUBLIC OF SOUTH AFRICA**

# Draft Strategic Stocks Petroleum Policy

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**8/1/2012**

Draft for Public Comment

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## Abbreviations

CAPEX	Capital Expenditure
CEF	Central Energy Fund
DJP	Durban - Johannesburg Pipeline
DME	Department of Minerals and Energy
DOE	Department of Energy
DPK	Dual Purpose Kerosene
ESSS	Energy Security of Supply Strategy
EWP	Energy White Paper [i.e. White Paper on Energy Policy of 1998]
EIA	Environmental Impact Assessment
IEA	International Energy Agency
IE	International Energy Program
GDP	Gross Domestic Product
LPG	Liquefied Petroleum Gas
NT	National Treasury
NERSA	National Energy Regulator of South Africa
NMPP	New Multi-Products Pipeline
OECD	Organization for Economic Co-operation and Development
PESTEL	Political, Economic, Social, Environmental and Legal
PetroSA	Petroleum Oil and Gas Corporation of South Africa
RSA	Republic of South Africa
SFF	Strategic Fuel Fund Association
SOEs	State Owned Entities
SSP	Strategic Stocks Policy

## 1 Executive Summary

- 2.1 **Strategic stocks of petroleum products** are defined as both crude oil and refined products (petrol, diesel, jet fuel, and LPG), and are physical in nature, kept for severe fuel supply disruptions or catastrophes. They exclude dead stock in tanks, pipeline fills, refined products in road and rail tankers, stocks held on behalf of armed forces, commercial and safety stocks held by operators in the petroleum infrastructure. Strategic stocks should only become available under declared emergencies and should therefore not be used for operational supply disruptions, short term supply chain problems, as well as bad planning by the operators in the oil industry. It is only the Minister of Energy that can declare a state of emergency. Strategic Stocks of petroleum are an important component of any government policy package aimed at coping with a severe fuel supply disruption that exceeds the level of commercial stocks coverage. To date, licensed manufacturers and wholesalers operating in RSA have had no obligation to hold strategic stocks. Strategic Stocks need to be seen in a wider context than just supply disruptions. This is particularly important given that crude oil stocks can tie up a large amount of money that has a high opportunity cost in the context of today's new economic imperatives and the limited resources available to Government. Therefore, the cost of holding strategic stocks needs to be balanced against the benefits and the risks faced by South Africa taking account of the opportunity cost of the investment.
- 2.2 Aside from geopolitical risks associated with imports, there are other local risks that could be catastrophic. The age of our refineries, some of which are over 40 years is a cause for concern because catastrophic events at production facilities can cause severe supply disruptions. The current supply disruptions due to unplanned shutdowns caused by amongst others fires at refineries are indicative of the fuel supply risk country is facing.

Strategic fuel stocks concept and policies are rooted in the 1973-74 oil embargo created by the Organization of Petroleum Exporting Countries (OPEC)<sup>1</sup>. During the OPEC's 1973-4 oil embargo, the global supply of petroleum products was drastically reduced. Many countries, especially the OECD member countries, keep strategic stocks including developing countries such as China, India and Kenya.

- 2.3 The White Paper on Energy Policy (1998) (EWP) commits the South African Government to secure supply of crude oil and petroleum products through the holding of strategic stocks. It states that "Government will determine the country's strategic oil requirements and will ensure that supply security is maintained. Taking cognizance of the capacity of its synthetic fuels industry, South Africa will maintain a strategic crude oil stock level equivalent to at least three months of total consumption (Section 7.4.17.3)". The policy has partly been implemented by the Government owned company, Strategic Fuel Fund (SFF).
- 2.4 South Africa needs to have a comprehensive strategic stocks policy which will cover the following: the stock holding requirements for Government and mandatory stock holding by industry; provision for infrastructure to transport and hold strategic stocks, a funding mechanism for the procurement of stocks and infrastructure as well as operating and maintenance costs for both. There is a compelling need for South Africa to change the current strategic stocks policy so as to enhance the state of readiness in the event of a major oil supply disruption. The approval of the proposed policy will alleviate the challenges and ensure that South Africa has a strengthened response mechanism to oil supply crises.
- 2.5 South Africa is a net importer of petroleum products with 100 % crude oil imports. About 30 % of local consumption is from indigenous resources.

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<sup>1</sup> EIA

- 2.6 On 2 December 1998, Cabinet adopted the White Paper on Energy Policy which stipulates that South Africa will maintain a strategic crude oil stock level equivalent to at least 90 days of total consumptions. This stockholding is a benchmark against IEA stockholding requirement and does not reflect South Africa's own situation.
- 2.7 Having considered South Africa's own situation in terms of risk exposure, the cost of funding the strategic stocks and other competing needs of the country, it is recommended that Government revises downwards the level of stockholding and also hold a mixture of crude oil and refined products strategic stocks. It is further recommended that Government holds strategic stocks equivalent of 60 days of net imports. Licensed manufacturers and wholesalers be obliged to keep an additional 14 days of refined product stocks equal to the market share of the respective licensed manufacturer/wholesaler as emergency stocks.
- 2.8 The rationale for revising strategic stockholding downwards is premised on the following considerations:
- 2.8.1 **Risk exposure:** Although there remain threats to international supplies of petroleum products due to geopolitics and piracy in the Indian Ocean, South Africa, like many oil importing countries in the world, is less dependent on the Middle East oil than in the past. For example, about 30% of crude oil imports came from the West African countries during 2010. This implies that there is now less need to hold large quantities of strategic stocks against the threat of an international supply disruption than in the past.
- 2.8.2 **Cost of funding strategic stocks:** South Africa, as a developing country is faced with many other competing needs. Therefore costs of funding strategic stocks and the related infrastructure should be taken into consideration when deciding on the level of stockholding.

- 2.8.3 Lead times for the receipt of imports:** The time it takes for imports to land on South African shores should be taken into consideration when determining the level of stockholding. The shorter the time it takes for imports to reach South Africa, the lesser the quantities of strategic stocks should be held. It takes a minimum of 21 days and a maximum of 42 days for imports to reach South African ports of entry. A further 10 -14 days is spent on offloading, refining and transportation from the coastal refineries to inland market.
- 2.9 Management of strategic stocks shall be vested with the Agency, currently envisaged as the Strategic Fuel Fund Association (SFF). The latter will be responsible for procuring and maintaining strategic stocks volumes kept by Government as regulated by the Minister of Energy. The oil companies would be required to procure, store and maintain strategic stocks held by them. The notice to release strategic stocks and the rules of stock drawdown shall be issued by the Minister of Energy. The DoE and NT will have to find a better mechanism of financing procurement of refined products strategic stocks and the associated storage and distribution infrastructure than to rely on the imposition of a levy on consumers of petrol, jet fuel and diesel as previously envisaged.
- 2.10 The revised strategic stocks policy endeavors to ensure uninterrupted supply of petroleum products in the country through the provision of adequate strategic stocks and infrastructure such as storage facilities. It has been estimated that a shortage of fuel supply will cost South Africa a billion rands per day but the insurance for security of supply through strategic stocks will cost an estimated R1.62 billion per year based on estimated volume of 27 billion litres consumption per annum multiplied by R0.06 per litre, (the latter being the levy or premium paid by consumers of petrol, jet fuel and diesel). The opportunity cost of not having fuel will however continue to increase. The need to ensure security of supply is at the top of the agenda of both developed and developing countries. Hence the need for South Africa to revise its current strategic stocks policy.

### **3 Introduction and Historical Background of Strategic Stocks Policies**

- 3.01 The global community is more than ever dependent on oil as a source of energy. By 1974, petroleum was powering transportation, supplying one third of the industrial sector power and one quarter of the electricity generation.
- 3.02 Strategic fuel stocks concept and policies are rooted in the 1973-74 oil embargo imposed by the Organization of Petroleum Exporting Countries (OPEC)<sup>2</sup>. During the OPEC's 1973-4 oil embargo, the global supply of petroleum products was drastically reduced. The oil embargo highlighted the importance of oil in the economies of industrialized nations and how vulnerable they were to disruptions in supplies. Security of supply was therefore at the heart of the development of strategic stocks.
- 3.03 In South Africa, the United Nations crude oil sanctions against the former apartheid government resulted in the establishment of a crude oil stockpile as insurance against crude oil import disruptions. Following the lifting of the UN embargo, the volume of crude oil in stock was gradually reduced.
- 3.04 In December 1998, Cabinet adopted the White Paper on Energy Policy which stipulates that South Africa should keep 90 days of net imports. This aligns the country's position to the IEA member countries that have to keep 90 days of equivalent oil consumption. However, South Africa is not a member.
- 3.05 South Africa's economy, like all major industrialized nations, is dependent on the availability of energy for economic growth and development. The South African economy uses an average of 27 billion litres of petroleum products per year. The South African transport sector is 90% dependent on liquid fuels (South African Energy Synopsis; 2010). The petroleum industry is also a major contributor to the Gross Domestic Product (GDP) of the country and as such, disruptions to the availability of petroleum products often results in economic losses besides social inconveniences.

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2. EIA, Ibid

In December 2005, the disruption of the supply of refined products resulted in major industrial and societal loss. Conservatively, it is estimated that a national non-availability of liquid fuels would cost South Africa's economy approximately R925 million per day in GDP 2005 price.<sup>3</sup> This raises a fundamental question regarding the role of government in ensuring security of supply. The International conditions have changed and there is a need for Government to put in place a comprehensive long term strategic stocks policy to enable the country to ensure continuity of liquid fuels supply even in the face of severe disruptions / catastrophes.

- 3.06 The geopolitical state of the world today coupled with South Africa's own domestic probabilities of disruptions, necessitate that South Africa re-looks at its readiness to deal with liquid fuels supply disruptions effectively. One of the most important instruments to address this predicament is the use of a strategic stocks policy and a robust security of supply strategy. During 2006 a team of consultants together with the Department conducted an investigation to help the latter to formulate the Strategic Stocks Policy (SSP) and thoughts on the Energy Security of Supply Strategy (ESSS). Another study by the Fuel Supply Strategy Task Team (FSSTT) was also undertaken to identify constraints in the entire fuel supply chain. These studies informed and partly shaped the formulation of this Strategic Stocks Policy.

### **3.1 Analysis of the Liquid Fuels Supply Environment in South Africa**

- 3.1.1 Liquid fuels / oil security of supply becomes strategically the cornerstone of the South African economy and is a paramount responsibility not only of industry but government as well since the transport sector is dependent on liquid fuels.
- 3.1.2 During December 2005, South Africa experienced severe supply disruptions in the liquid fuel sector which resulted in a number of fuel retailing sites running dry. Subsequent to these fuel disruptions, an investigation led by Adv Moerane, SC was launched. The Moerane Investigation looked into, inter alia, business

<sup>3</sup> Department of Minerals and Energy (DME) report on Strategic Stocks Policy and Security of Supply Strategy, 2007.

activities and practices in the entire supply value chain of the liquid fuels industry; and a review of the existing regulatory and policy framework within which the liquid fuel industry including the strategic stocks policy. The Moerane Investigation found that there were serious limitations in the movement of petroleum products from the coast to inland and that the current strategic stocks policy had some shortcomings in that, amongst other things, it places no obligation on licensed manufacturers and wholesalers to hold prudent commercial stocks and that the strategic stocks held by the Government are in crude oil only. The findings of the Moerane Investigation served to succinctly identify and quantify constraints in the supply value chain. Most of the recommendations made on the policy side coincidentally served to give impetus on the work that the Department had already started to review.

- 3.1.3 The supply disruptions in December 2005 highlighted the need for Regulations regarding strategic stocks to be held by licensed manufacturers and wholesalers to be implemented. The approval of the revised strategic stocks policy will underpin regulations intended to yield uninterrupted supply of petroleum products in the country through the provision of adequate strategic stocks and strategic infrastructure such as storage facilities and pipeline capacity. It will be accompanied by a trigger and release mechanisms to deal with crisis events.

## **3.2 Geographic location of South Africa in relation to product sources**

- 3.2.1 There are risks attached to the use of trade routes which may also have an impact on the cost of the vessel. This is already happening as result of piracy in the Indian Ocean. South Africa's position between the North Atlantic and the Middle East producers allows it to source energy supplies from both the east and west markets without major logistical restrictions imposed by for example, the Suez Canal, Panama Canal and Strait of Malacca on other countries. However, being at the southern tip of Africa, South Africa is far from all international oil markets. It takes approximately between 21 and 42 days to ship products to its shores from any of these sources. Thus in the event of a market failure, the country needs to have stocks available to cover the time to ship

products into the country which in RSA 's case, is a minimum of three weeks (21days). It takes a further 10 to 14 days to offload, refine crude oil and transport refined products from the coastal refineries in Durban to the inland region.

### **3.3 Logistical infrastructure constraints**

In South Africa, about 60% of the approximately 27 billion litres of petroleum products consumed in the country have a market in the inland region which mainly comprises Gauteng, Limpopo, Free State and North West provinces. Availability of effective and efficient transport infrastructure is critical to moving products to these markets. Fortunately the New Multi Product Pipeline (NMPP) which was commissioned in early January 2012 has removed the constraints of the existing Durban-Johannesburg Pipeline (DJP) which was seriously volume constrained. However, the NMPP has to be complemented with adequate receiving storage facilities at the end of the pipeline. There are constraints in the depot storage tanks, and port related facilities such as receiving and offloading facilities. All these can disrupt the movement of products from the sources of supply to the market. The private and public sectors should be encouraged to invest in expanding capacity. Given the urgency of the current infrastructural requirements, state owned enterprises (SOEs) can play a catalytic role in these developments. Infrastructure is the backbone of the energy value chain. It is critical that all bottlenecks in this part of the system are cleared.

### **3.4 The role of the Strategic Fuel Fund Association**

In South Africa, the SFF a wholly owned subsidiary of the CEF (Pty) Ltd, which is state-owned, is presently the custodian of strategic stocks. It was established in 1965 by the Government to co-ordinate the acquisition and management of strategic stocks in South Africa. Up to early 1990s SFF was charged with the purchases of all crude oil supplies for the South African oil industry. SFF held both strategic and commercial stocks. Post 1994, SFF manages crude oil strategic stocks of on behalf of Government.

#### 4 International Benchmarking on Strategic stocks

Emergency stocks, technical redundancy or reserve margins are used by developed countries to minimise supply disruptions of oil products. In the petroleum sector, the notion of strategic stocks was first introduced after the 1973 oil shock. The aftermath of the oil crisis saw the formation of the IEA which was mandated with the task to coordinate purchases of oil during a future shock and coordinating the drawdown of reserves during a crisis period. The IEA member countries currently hold 90 days of net imports and there are talks to increase the cover to 120 days<sup>4</sup>.

The IEA is an autonomous agency linked with the Organization for Economic Co-operation and Development (OECD) whose core activity is to ensure energy security for its members. At the moment there are 28 member countries that are jointly committed to meet oil supply emergencies. The member countries also share energy information, coordinate energy policies, cooperate in development of rational energy programmes. In its history the IEA has declared a stock drawdown only twice; namely during the Gulf War in 1991 and during the Katrina aftermath in 2005.

The participating countries implement the International Energy Program (IEP) through the IEA. Under the IEP Agreement, participating countries' commitments include maintaining emergency oil reserves equivalent to at least 90 days of net oil imports; providing programmes of demand restraint measures to reduce national oil consumption; and participating in oil allocation among IEA countries in the event of a severe supply disruption. Furthermore, individual countries have their policies reviewed by peers every four years. The legislative framework is then used to oblige both government and industry to hold a prescribed quantity of product as strategic stocks. To be eligible to join the IEA, prospective members must have a strategic stocks policy and must be members of the OECD.

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<sup>4</sup> IEA, *ibid.*

Developing countries such as China, India and Kenya also keep strategic stocks. In South Africa, the Department of Energy has conducted an extensive study on strategic stocks with the aim of ensuring security of supply. In general, the study indicated that the formulation of a country's strategic stocks policy and security of supply strategy are matters influenced by many factors; such as the nation's own energy production capacity, the country's own strategic reserves, proximity to energy producing markets, views on the geopolitical state of the world, and the country's own petroleum infrastructure.

The EWP states the importance of the energy sector in ensuring the stable and continued availability of quality products throughout the country. The EWP further notes that, "*The maintenance of adequate petroleum reserves and stocks remain a strategic imperative for any crude oil importing country*"<sup>5</sup>. It stipulates that South Africa will maintain a strategic crude oil stock level equivalent to at least three months total consumption; putting the country in the same position as the IEA member countries who are required to hold 90 days stocks of total consumption.

## **5 Evaluation of options to mitigate major supply disruptions**

Today, the need for energy security is more urgent than ever in the light of the difficulties caused by energy supply shortages in various countries. It is critical for sovereign states to have strategic stocks policies with emergency response mechanisms that are constantly reviewed and strengthened to ensure that they are adequate and effective to respond to sudden and sharp supply disruptions.

In order to bridge the gap between the current situation and the desired end-state, diversification of supply, development of adequate logistical infrastructure such as port facilities, pipeline capacity, depot storage and provision of adequate strategic stocks products need to be prioritized.

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<sup>5</sup> White Paper on Energy Policy, 1998

With regard to diversification of supply, the country should focus on, amongst other things, optimizing the energy mix and diversification of supply sources. The South African Government can play a key role in directing the use of certain energy carriers to ensure diversity of supply. The use of coal to liquids (CTL), gas to liquids (GTL) and renewable energy are some of the measures that could be utilized to diversify liquid fuels sources. Investment in crude oil production by the South African national oil company in other oil producing countries is another strategy that is used to enhance security of supply. These options can be achieved by use of appropriate strategies, policies and legislative framework.

The refining and synthetic fuel industry in the country continues to play a significant role in reducing the impact of total importation of refined products into the country. However, South Africa needs to focus on enhancing its refining capacity.

Currently the country has strategic stocks in the form of crude oil only, held in Saldanha Bay. South Africa should build strategic stocks of both crude oil and refined products.

## **6 Revised Strategic Stocks Policy**

The current policy framework needs to be reviewed and the responsibilities of stakeholders and that of government redefined. This should entail placing a legal obligation on the oil industry to hold specified quantities and categories of stocks. The EWP states that "Government will determine the country's strategic oil requirements and will ensure that supply security is maintained". Cabinet adopted the White Paper on Energy Policy on 2 December 1998. It stipulates that South Africa shall hold the equivalent of 90 days of total consumption, taking cognizance of local production from indigenous resources. This aligns the country's position to the IEA member countries that have to keep 90 days of equivalent oil consumption.

South Africa will introduce a mixed system of holding strategic stocks. In terms of Sec. 17 (1) of the Energy Act of 2008 (Act No. 34 of 2008) the Minister may,

in a prescribed manner, for the purposes of ensuring security of supply, is empowered to direct any state-owned entity to acquire, maintain, monitor and manage strategic stocks. The South African Government shall own reserves which will be in the form of both crude oil and refined products. Furthermore, in terms of Sec. 2(1) (g) of the Petroleum Products Amendment Act, 2003 (Act No. 58 of 2003), the Minister may by regulation, prescribe the quantities of crude oil or petroleum products to be kept as strategic stocks by any entity. The oil industry shall therefore, be obliged to hold mandatory strategic stocks which are over and above the operational stocks for the specific company. Infrastructure should be made available to accommodate the storage and transportation of strategic stocks.

## **6.1 Strategic Stocks**

### **6.1.1 Stock holding structure**

The SFF, a subsidiary of the CEF group shall keep reserves equivalent to 60 days of net imports in both crude oil and refined products on behalf of Government. Licensed manufacturers and wholesalers shall be obliged to keep 14 days of refined products based on their annual market share or import share of the previous calendar year as mandatory emergency stocks over and above their normal commercial stocks and such stock shall be accumulated over a period of five years. The location of such mandatory stocks would be determined by the licensed manufacturers and wholesalers themselves based on the proximity to their major markets. Commercial stocks consist of two components, the operational stocks and safety stocks. Operational stocks are stocks required to service the market and safety stocks cover local disruptions of the market. The mandatory strategic stocks shall only be released on instruction from the Minister of Energy.

The products to be kept as strategic stocks shall include diesel, petrol, jet fuel and LPG. Natural Gas will be dealt with separately in terms of the Gas Act. The product split will depend on the consumption pattern. Generally, statistical evidence contained in the Strategic Stocks Review Report (Task 135) has

projected that there will be relatively more diesel, required followed by petrol, jet fuel and LPG. LPG is expected to increase with time given the anticipated increase in LPG consumption. This then implies that paraffin in the long run may diminish as it may be substituted by LPG.

#### **6.1.2 Review of the strategic stocks levels**

A review of the level of strategic stocks coverage shall be done every three years to determine whether the level of stocks needs revising. However, SFF as custodian of strategic stocks would review the strategic risk on an ongoing basis and advise the Department of Energy which will make a final decision on whether to initiate a review on a different period.

### **6.2 Strategic stocks infrastructure**

All strategic stocks have to be transported and stored. It is important that adequate infrastructure exists to store both crude and refined products and that the pipeline has sufficient capacity to move products under emergency conditions. An investigation into the required pipeline capacity and storage facilities was conducted. All the strategic stocks reserves should be transported via a government owned pipeline or pipelines that are fully installed within the South African sovereign state to ensure full control in the event of an incident. Transnet Pipelines increased the capacity of its NMPP from the initially proposed sixteen (16) inch diameter pipeline to a twenty four (24) inch diameter pipeline to accommodate this imperative.

#### **6.2.1 Pipeline capacity**

South Africa has currently one 700 Km pipeline used to transport refined petroleum products called the Durban-Johannesburg Pipeline (DJP). This pipeline is reaching the end of its economic life and is being replaced by the NMPP which was commissioned early in 2012 to transport diesel only for a period of two years. Once the pipeline is fully operational petrol will be incorporated and the DJP will be decommissioned. The extra capacity built into the NMPP constitutes a strategic reserve capacity which is above the normal

market and commercially viable capacity. This reserve capacity is a strategic capacity and has been financed by all petroleum products consumers through a security of supply levy.

The Department has made an estimation of the extra capacity needed to move strategic stocks. An assumption was made to make a determination of the quantities of strategic stocks required. Such an assumption was partly based on the volumetric capacity required to accommodate any strategic stocks movement from the coast. The NMPP has sufficient capacity to service the market demand including the shortfall and depleted stocks due to inland refinery disruptions, and replenishment of depleted strategic stocks. It is estimated that strategic stocks need to be replenished within 3 months to the original levels while commercial stocks need to be replenished within the period of the cover that is 3-6 weeks. This requirement will be met by the NMPP as it is capable of moving product on high demand. It should be emphasized that the release and the replenishment of strategic stocks do not involve any sales transactions where price is involved.

#### **6.2.2 Storage infrastructure**

Accumulation and holding of strategic stocks require investment in storage facilities. The country does not have sufficient storage facilities to accommodate the refined products strategic stocks. Therefore the volume required to meet the need of refined products strategic stocks will require the construction of new tanks. The calculation of the cost of investment in storage infrastructure and additional stocks is shown in the summary of infrastructure and inventory requirements as per table below. If the costs were to be recovered from the consumers in the form of a levy, the cost per litre to consumers for investing in the government owned strategic stocks will be approximately R0.06 per litre on stored products except paraffin over a period of 10 years. However, an alternative funding mechanism will have to be agreed to between the DoE and NT. The industry strategic stocks costs will be recovered through the regulated fuel pricing mechanism.

***Comparison of costs and infrastructure requirements for strategic stocks of refined products at stock holding levels of 30, 60 and 90 days respectively.***

**Table 1: Summary of infrastructure and inventory requirements in 2010 [Net Imports]**

<b>Total Strategic Stocks</b>	<b>30 Days</b>	<b>60 Days</b>	<b>90 Days</b>
<b>Refined products(Net Imports)</b>	10	18	60
<b>Crude Oil</b>	14 (No increase in stocks)	42 (Increase by 28 days)	30 (Increase by 10 days)
<b>Volume stored (in refined products)</b>	.676 billion litres	1.22 billion litres	4.06 billion litres
<b>Tanks required</b>	35	62	203
<b>Depot Capex</b>	R3.15 billion	R5.58 billion	R18.27 billion
<b>Inventory Costs@ R4/per litre</b>	R2.71 billion	R4.87 billion	R16.23 billion
<b>Tariff Payback 10 years</b>	R0.03 per litre	R0.06 per litre	R0.23 per litre

\*\* Assuming tanks of 200 000 m<sup>3</sup> capacity each

Note: The depot capital Expenditure (CAPEX) is a  $\pm$  50% magnitude estimate, all figures based on 2005 economic assumptions.

### **6.3 Procurement, maintenance and management of strategic stocks**

The Agency shall be responsible for procurement, maintenance and management of strategic stocks held by it on behalf of Government. SFF would be obligated to report back to the Department of Energy the stock levels on a monthly basis in terms of the Petroleum Products Act as amended.

### **6.4 Location**

Strategic stocks of refined products should be kept where they can be readily made available to the market in cases of emergency. There is also a quality control requirement for refined products; these have to be rotated at least every three months and therefore, they have to be close to operating facilities.

### **6.5 Monitoring and Non-compliance**

All companies with stock holding obligations shall be required to submit monthly reports on their relevant stock levels to the Department of Energy. Any infringement should be investigated and if confirmed, penalties should be imposed as provided for in the Petroleum Products Act. The details of this will be in a Regulation to be promulgated by the Minister of Energy in this regard.

### **6.6 Stock Draw-down, trigger and release mechanisms**

One of the deficiencies of the current strategic stocks policy is that it does not have a stock drawdown mechanism. A Liquid fuels emergency caused by the shortage of crude oil and petroleum products shall be declared by the Minister of Energy after consultation (where time permits) with the National Liquid Fuels Emergency Management Team which would be constituted by the Department officials, senior industry executives from Licensed manufacturers and wholesalers, Transnet Pipelines, and *other interested parties* as well as co-opted members from other Government departments/stakeholders. The notice to release strategic stocks will be made by the Minister and the release of

products will be co-ordinated by SFF in collaboration with the Department of Energy.

## **6.7 Financing of strategic stocks**

A model was developed by consultants for Task 135 who worked on Strategic Stocks Policy Review. According to this model, the economic cost of not having fuel for a day is estimated at R925 million (2005 figures). This is a huge cost to the economy with severe negative socio-economic consequences for the country. In order to avoid such a cost, the Department of Energy and National Treasury should agree on a better funding mechanism for the required infrastructure and the procurement of refined products strategic stocks, instead of imposing a levy on all consumers of petrol, jet fuel and diesel as was thought before.

## **7 Roles of other institutions**

### **7.1 Transnet pipelines**

Transnet Pipelines can play a role in the provision of storage facilities that will ensure that quality controls of refined products are adhered to; (i.e. stock rotation).

### **7.2 Black Economic Empowerment Companies**

The Black Economic Empowerment companies can also play an important role in the provision of storage infrastructure for refined products to Government. Instead of SFF building all storage tanks, Black Economic Empowerment companies which have storage facilities can lease these to SFF for the storage of refined products.

### **7.3 Nersa**

Nersa can also play a role in the identification of uncommitted storage facilities or new storage facilities that can be used for the storage of strategic stocks of refined products.

## **8 Conclusion**

The approval of the proposed revised strategic stocks policy will ensure uninterrupted supply of petroleum products in the country through the provision of adequate strategic stocks and infrastructure such as storage facilities and pipeline capacity. Both industry and government will have to keep strategic stocks for use during declared emergencies only. It has been estimated that a shortage of fuel supply will cost South Africa a billion rands per day but insurance for security of supply will cost an estimated R1.62 billion per year based on estimated volume of 27 billion litres per annum multiplied by R0.06 per litre (the latter being the levy or premium paid by consumers of petrol, jet fuel and diesel). The opportunity cost of not having fuel is higher now than ever before. The need to ensure continuity, reliability and security of supply are urgent more than ever before and it is at the top of the agenda of the both developed and developing countries.

South Africa needs to have a comprehensive strategic stocks policy with the following in place:- the stock holding requirements for government and mandatory for industry; provision for infrastructure to move and hold the stocks, funding mechanism for the procurement of product and infrastructure as well as operating and maintenance cost for both. The stock drawdown process and procedure has to be developed and understood by stakeholders. Monitoring and non-compliance measures must be in place. Government needs to put in place the penalties for infringement of stock holding requirements. The approval of the proposed policy will alleviate the challenges and ensure that South Africa has a strengthened response mechanism to fuel supply crises.

## 9 References

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**energy**

Department:  
Energy  
**REPUBLIC OF SOUTH AFRICA**

# Strategic Stocks Implementation Plan

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**Petroleum Policy Directorate**

**1/06/2012**

Draft strategic stocks implementation plan

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## **STRATEGIC STOCKS IMPLEMENTATION PLAN**

### **1 INTRODUCTION**

The implementation of the strategic stocks policy would require Government to invest in storage facilities for refined products strategic stocks or alternatively to rent such facilities. Although licensed manufacturers and wholesalers do have storage facilities, these are alleged to be inadequate to accommodate strategic stocks.

### **2 STOCKHOLDING**

Over and above strategic stocks of refined products to be held by Government, Licensed manufactures and wholesalers would be obliged to hold **14 days** of refined petroleum products from July 2014 as strategic stocks.

### **3 LOCATION OF STORAGE FACILITIES**

Strategic stocks of refined products should ideally be stored in storage facilities closer to the market and may be kept with other kinds of stocks; e.g. commercial stocks. A separate tank, tank farm, storage site, processing complex as well as some other facilities complying with technical and environmental conditions shall be deemed to be a storage facility. Storage tanks for refined products strategic stocks would have to be located in the vicinity of operating facilities and be connected by pipeline in order to allow for stock rotation.

### **4 STOCK MANAGEMENT AND EMERGENCY RELEASE MECHANISM**

Licensed manufacturers and wholesalers will be given a maximum period of 3 years starting from 2012 to construct additional capacity for the 14 days of strategic stocks.

#### **4.1 Management of Strategic Finished Product in Oil Industry Supply Chain**

Licensed manufacturers and wholesalers shall keep liquid fuel product stocks as part of the normal supply chain. The stocks levels shall be measured on a regional and national basis per product group. Product groups are defined as Diesel (all grades); Petrol (all grades); Jet (Jet A1, DPK); and LPG.

#### **4.2 Party responsible for procuring, maintaining and managing strategic stocks**

The entity responsible for procuring, maintaining and managing strategic stocks is called the responsible party and is defined as follows:

A responsible party

- is a wholesaler who is also a refiner and / or importer of petroleum products as defined in the Petroleum Products Act,  
Or a designated Government Agency duly instructed to hold the strategic stock on behalf of Government e.g. SFF currently keeping crude oil stocks.
- is the party responsible for procuring, maintaining and managing the strategic stock volumes as regulated by the Minister of Energy.
- is obligated to report stock levels.

The volume of strategic stocks per product to be held by a responsible party is based on the average market share per product of the preceding calendar year. The responsible party should hold the stocks throughout the supply chain, with the bulk thereof as close to the market as dictated by the supply infrastructure.

A responsible party could store the stocks in its own facilities or that of third parties. Where stocks are stored by an independent third party, a responsible party needs to ensure that such third party terminal / depot operator reports the stocks kept within the facility on its behalf. The ultimate responsibility lies with the responsible party and thus if a third party should default, the responsible party will be held accountable for the transgression.

Where a responsible party is a host at a storage location managing stock on behalf of another responsible party, e.g. joint terminal operations, each company's stock entitlement in the storage location should be reported separately. If a company needs to move from one location to another for strategic stocks management purposes, the commercial negotiation to transfer the stocks between parties needs to be conducted within a defined framework.

The DoE has to be notified of a responsible party's intent to move stocks from one location to another or between hosting parties four weeks in advance of such a change. This is to ensure that the DoE can satisfy itself that the necessary systems and reporting changes have been implemented and that the reporting requirements will be seamless when moving between hosting facilities. The physical accounting and commercial arrangements between the various parties to effect such a change should be done in a manner to ensure that the reporting for strategic stocks purposes is not interrupted.

### 4.3 Staff implication

The allocation of staff in the monitoring and reporting of strategic stocks would be the responsibility of the responsible party.

### 4.4 Stock management systems

To effectively and efficiently manage and report product stock levels within the oil industry supply chain by all obligated stakeholders, current technology and systems implemented by industry should be utilised. The daily stock dips taken by stakeholders in the industry are done by either using automated level gauging equipment on tanks linked to a depot management system or manual dips are taken and captured in a system. In most cases oil industry depot systems are linked to ERP systems where daily stock records are kept per product per tank per stock location.

As the strategic stocks will be intermixed/co-mingled with operational stocks, it would not be prudent to attempt to split the stock holding records into strategic or operations for reporting purposes. **The minimum level of stocks per product per region to be kept in the supply chain by industry would be equal to the volume of the strategic stock required.** The aggregated stock information will enable Industry stakeholders and SFF to see what the stock positions in the country are and what level of stock is being kept over and above the minimum strategic stock levels in the designated regions. Thus all stakeholders that are required to keep strategic stocks would be required to report the actual current stock levels per product per location. This information can be obtained by direct electronic data transfer/messaging between a stakeholder's system (e.g. SAP/JDE or other ERP systems) and a centralised stock reporting system.

### 4.5 Frequency of reporting

As a condition of license the industry stakeholders are required to furnish the DoE with information on a regular basis. For strategic stocks purposes, the licensee will be required to report stock levels on a daily basis. The exact time and formats still need to be agreed with oil industry.

#### 4.6 Funding of strategic stocks - recovery of a strategic stock levy

Strategic stocks kept by licensed manufacturers and wholesalers shall be financed by individual companies. However the consumers shall compensate oil companies through the pricing system.

#### 4.7 Reporting functionality

The stock management module for the centralised stock management system should have the following functionality:

*Aggregate stock volumes:* Report and display aggregate stock volumes per location per product into regional and national volumes for each responsible party. The responsible party's national strategic stocks volume should be above a minimum stock level indicated based on equivalent number of days. The aggregate data is displayed on screen and can only be accessed by a responsible party and DoE.

*Available information:* The information will be displayed for a product, a company and a period selected. The DoE will be able to view all responsible parties' stock positions simultaneously and an industry aggregate.

*Alarms:* Various trending and events can be defined to raise alarms, which could trigger e-mail messages or SMS to key personnel within the DoE and Industry as applicable. There could be an agreed level of escalation built into the system.

*DoE access:* The DoE will be able to view data for any responsible party, displayed at regional and national level. A function will also exist to view the data per regions, where specific regional targets are indicated. Each of these regions will be linked to specific depots. The DoE would be able to set the national and regional limits per company per product for a specific calendar year.

#### 4.8 Stock Management System Functionality

The system would typically have the following functionality:

- Stock recording per location per responsible party
- Integration with ERP systems to receive data daily
- Management Reporting and Trending of Stocks

- Event and early warning management system - advanced notification of stock movements between location
- Incidence reporting and management
- Revenue to be recovered by DoE - declarations and payment advise; and payment receipts
- Strategic Stock Claims paid by DoE - claims status and payments made
- Reconciliation and slate account status

#### 4.9 Strategic stock holding waiver

A responsible party can apply for a strategic stock holding waiver using the centralised system. The application will be submitted to the DoE. The system will notify the DoE and the applying responsible party by e-mail and SMS (if required) that a waiver application is pending. The DoE has to respond to a submission within 2 working days.

The waiver application should contain at least the following information:

- Name of the responsible party
- The reason for the application
- The products and volumes per location impacted
- The distress period
- Mitigating steps taken by the responsible party

The DoE will after due consideration and consultation, agree on approving or rejecting the waiver application and submit its response to the relevant applying party. The party has 2 working days to object to the response where after the decision will stand. The responsible party can apply to the Minister for reconsideration. The Minister has 5 working days to consider the resubmitted application, where after a response needs to be presented to the responsible party. The Minister's decision on the matter is final.

An application for a waiver can be submitted for pre-defined situations. These are maintenance to facilities; destruction of facilities; physical loss of stock, and emergencies.

#### **4.10 Statutory and other maintenance of tanks and storage Facilities**

Where extraordinary maintenance is planned for a company's tanks, and ullage is not available, such company should increase stock holding at third party locations to ensure that the minimum level is not compromised. If ullage is not available in the market, the company must approach the DoE for a waiver of the minimum stock level, which will only be granted once the DoE has appraised itself of the facts.

If such waiver is granted, it will be for a specific responsible party for a specific product and for a specific period; or the start date will be indicated and the maximum period of the waiver. The waiver should also indicate by which date the strategic stocks should be replenished at its required level, i.e. cut off date.

#### **4.11 Destruction of facilities and or loss of product**

Where facilities have been destroyed or damaged, thereby rendering the strategic stock useless, or where product is off specification or in the severe case where such stocks have been destroyed by fire, the responsible party needs to inform the DoE immediately of such event. The mechanism for reporting would be a centralised system, which will notify various parties, by SMS and e-mails. Where such an incident will impact supplies to neighbouring countries, such countries need to be notified.

The DoE will, with the relevant parties, assess the situation and issue a waiver for the applicable strategic stocks for a period mutually agreed, not being longer than 3 months for stock losses other than fire or depot destruction, which will be 6 months, where after the situation needs be reassessed and an extension to the waiver granted if required. The responsible party has to prove that it cannot obtain alternative storage facilities for the interim period while rebuilding or fixing the damaged facility. The waiver will only be for the volume of products at a specific location in distress. Where the volume of product in distress exceed 40% of the strategic stock in any region, the responsible party(s) will be required to hold stock at an alternative location (could be in a foreign country if no alternative is found locally) for the period while the depot or terminal is being rebuilt. Once the depot or terminal is operational, the stocks will be transferred from the foreign location to the specific depot / terminal. Thus the following table would apply to determine when stock needs to be kept in an alternative location.

**Table 1: Regional stock loss triggers level**

Strategic stock kept in the region (days)	Regional stock loss trigger level (days)
10	4.0
14	5.6
18	7.2
22	8.8
26	10.4
30	12.0

**4.12 Release of stock during emergency**

The trigger for a major supply problem is when 7% of supply is disrupted for a period exceeding 30 days. The trigger for a supply crisis is when 7% of supply is disrupted for a period exceeding 30 days. *(These numbers still to be discussed with the RSA oil industry)*

The final decision based on the trigger for the release of strategic stocks, will be a decision by the Minister as advised by the National Liquid Fuels Emergency Management Team to release stocks to mitigate the impact of an emergency situation. Following the decision to release strategic stocks the Minister will issue an instruction to make the process for release of emergency stocks official indicating the following:

- The nature of the emergency
- The expected duration of the emergency
- The date from which stocks should be released
- The products and quantities that should be released during the emergency, if crude the volumes and which refiners
- The replenishment strategy
- The parties that should release strategic stocks
- The demand management actions i.e. what level of restraint needs to be implemented. Light, intermediate or heavy handed measures.

The date and conditions of the emergency release will be recorded in the strategic stock system. The Industry and DoE will continue to use the system to monitor stock positions countrywide.

The National Liquid Fuels Emergency Management Team and the Oil Industry Logistics Planning Team (operational) (LPT) will convene within 24 hours. The National Liquid Fuels Emergency Management Team will comprise of senior industry executives from licensed manufacturers and wholesalers, Transnet, Department of Transport and *other interested parties*.

The forum consisting of the two groups will monitor crude and product availability and provide advice on logistics and demand management solutions as required. The group will plan the release of the stocks, the timing thereof and any mitigating actions to be taken. If required a fair sharing arrangement will be agreed between the parties. The National Liquid Fuels Emergency Management Team will report to the Minister on a weekly basis indicating progress and market impact, and the status of any mitigation actions that have been implemented. The leader of the Oil Industry Logistics Planning Team will report to the National Liquid Fuels Emergency Management Team Chairperson on a daily basis the implementation progress and market feedback.

If the problem is of an onshore / local nature and crude and product are available from international sources, the oil industry will continue to import product to satisfy the demand shortfall. Immediate action should be taken to ensure replenishment of strategic stocks.

If the problem is of an offshore nature, i.e. either crude and or product supply is impacted, the Government in consultation with Oil Majors need to interact with relevant foreign Governments to ensure crude and product supplies. Where bilateral agreements have been negotiated between oil producing countries and the South African Government, such agreements need to be called upon during such emergencies, within the framework of such agreements.

If the problem is offshore supply logistics the Government needs to call upon agreements put in place with shipping companies. Here the Government needs to interact with local shipping companies to ensure that they would be able to supply the required shipping in case of international shipping emergencies. A formal agreement could be structured to ensure that tanker capacity (product and crude) will be available. Currently South Africa receives at least one VLCC per week. To implement

this, an inventory and capacity of tankers with local ownership, needs to be kept which can be called upon in case of an emergency.

#### 4.13 Fines

The following fine structure will apply when strategic stock levels at the national level fall below the required regulatory levels published by the Minister from time to time and no waiver is in operation at the time.

**Table 2: Illustrative Fine structure**

Nature of offence	Fine
First offence	R20 million
Second offence	R60 million
Third offence	R200 million
Thereafter	R200 million per offence

(Both the basis penalty figure and the multiplier can be changed by the Minister from time to time) The Minister could also include a minor fine system for regional stock levels if required.

(Note: The UK imposes unlimited fines for any transgression and fines can be imposed on a company and potentially on individual officials and directors of the company)

The fine applies irrespective of the volume of product utilised or number of product groups that are contested. If two product groups are under the required level for strategic stock volumes, the penalty will apply separately for each product.

When a responsible party is in default, the fine becomes payable immediately. The offending party has 5 working days to make payment to a designated Government account. If payment is late by a day, an additional 10% fine will be raised and added to the original fine. Thus for a late payment of a first offence, the total fine would be R22 million.

Fine payments due by a responsible party and settlement of all penalties should be recorded in the centralised system. The funds received from fines should be used

towards the administration and funding of strategic stocks and associated facilities and should not go to the general fiscus.

The offending party may approach the Minister for a reduction or cancellation of the fine. Such application should be in writing and the reason for reduction or cancellation clearly stated. An offending party has 7 working days to lodge such a request. The Minister will apply his/her mind and respond to the application within 7 working days of receipt thereof. The Minister's decision on the matter is final.

If a refund is due (all fines, including the 10% late payment fine) and the monies are refunded within 2 working days of the Minister's decision, no interest will be due. If the refund is done after 2 working days when it became due, interest will be due from the date that the refund is due, based on the prevailing prime overdraft rate on the date that the refund is due. The due date is the date of the Minister's signature on the response to the fine relief application.

Each of the offences and resulting actions will be recorded in the centralised stock management system.

#### **4.14 Replenishment of strategic stocks**

Where a party has been given a waiver to reduce or utilise strategic stocks, the waiver will clearly indicate the replenishment volumes, period and final cut off date.

#### **4.15 Audit function**

To ensure that the system is not abused by any of the stakeholders, regular audits will be conducted by the DoE to ensure that the reported and physical stocks at a given location are identical. The DoE may employ the services of competent 3<sup>rd</sup> parties to do such audits on its behalf.

The auditing party will visit depots unannounced. The stock levels reported the morning of the visit on the system should be verified with depot personnel, by actual manual dipping of a selection of tanks. Where a tank is being operationally utilised, either, product pumped into or out of, a calculation should be done to verify the validity of the morning figures. If this is not possible due to operational reasons, it will be noted and recorded in the system.

The auditor will record the audited numbers against the relevant stock tanks in the system and this will be verified by the depot manager. The figures will then be accepted as the audited figures and any discrepancy from the daily stock figures needs to be explained by the depot manager. The manual dip has to be less than 0.1% of the daily dip figure for a tank with no tank movements.

The Auditor-General should confirm that the system is in good order and that the prescribed stocks are kept as per regulatory requirements.

*An Agency managing strategic stocks has the same obligations as it is defined as a responsible party under 4.1.1. It is subject to the same penalties as for responsible parties keeping product strategic stocks.*

#### **4.16 Stock draw**

If for any reason product is required to be moved from the facilities to a refinery or to a third party, a formal instruction will be issued by the Minister or a delegated party.

The instruction will contain the following information:

- The quantity and type of crude to be transferred
- Mode of transport to be used i.e. pipeline or ship
- The destination of the parcel
- The ownership change if any in the transaction
- The date when the transfer should be made
- The commercial terms of the transaction
- The replenishment plan i.e. when the crude should be replaced
  - The party responsible for replacing the crude
  - The crude type that should replace the stock draw volume

The reason for the stock draw could be for national emergency or stock turnaround requirements.

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