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South Africa, Republic of

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Report Highlights:
South Africa's bio-fuel production has not changed since we reported in the 2007 Bio-fuel annual that production was not being done on a large scale. Many investors wanted to learn what incentives would be offered in the South African Bio-fuel Strategy. Since the announcement of the Bio-fuel Industrial Strategy several new investments in bio-fuel plants were announced. The strategy adopted a short term focus to achieve a 2% (or 400 million litres per annum) penetration level of bio-fuels in the national liquid fuel supply by 2012. It is estimated that by 2010 South Africa might produce around 100 million liters of bio-ethanol from sugar and sugar beet and 200 million liters of bio-diesel from soybeans.

Includes PSD Changes: No
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Summary

On December 5, 2007 the South African cabinet approved a national Bio-fuels Industrial Strategy. The new Bio-fuels Industrial Strategy is driven predominantly by the need to address issues of poverty, rural development and Black Economic Empowerment. Corn as a feedstock for ethanol production was excluded amid concerns over food security and fears of price increases. The new strategy recommends sugar cane and sugar beet for bio-ethanol production and soy beans, canola and sunflower as feedstock for biodiesel. The bio-fuels production target was also lowered from 4.5 percent, as proposed in the draft, to 2 percent. The blending target for bio-fuels is set at 8 percent bio-ethanol and 2 percent biodiesel.

The public release of the strategy brought about a strong negative reaction from key agriculture and industry groups, mainly because of the exclusion of corn as a feedstock for ethanol production. Although the corn industry is the biggest loser having planned huge new investments and developments, several new investments in sugar, sugar beet and soybean bio-fuel plants were announced. The International Trade Administration Commission of South Africa (ITAC) also announced a full rebate on the import of soybeans for the production of bio-diesel for a period of three years to enable the bio-diesel industry in South Africa to get off the ground. It is estimated that by 2010 South Africa might produce around 100 million liters of bio-ethanol and 200 million liters of bio-diesel.

$1 = Rand 7.67 (05/27/08)

Sources:

www.saba.za.org	Southern African Bio-fuels Association.
www.dme.gov.za	Department of Minerals and Energy.
www.sapia.org.za	SA Petroleum Industry Association.
www.cef.org.za	Central Energy Fund.
www.petrosa.co.za	Petroleum Oil and Gas Corporation.
www.sasol.co.za	SASOL.

South Africa's Bio-fuel Industrial Strategy

In December 2005 the South African cabinet approved the following regarding the development of a bio-fuel industry:

- The development of a Bio-fuel Industrial Strategy targeted at creating jobs in the energy crops and bio-fuels value chain, acting as a bridge from the second economy to the first economy;
- The establishment of a Bio-fuels Task Team (comprising national departments and state entities) to develop the industrial strategy; and
- The authorization of the Bio-fuels Task Team to engage with interested stakeholders in the first economy about establishing a modest bio-fuel industry and to report to cabinet about the financial implications involved.

Two years later on December 5, 2007 the South African cabinet approved a national Bio-fuels Industrial Strategy (see SF7044). The new Bio-fuels Industrial Strategy is driven predominantly by the need to address issues of poverty, rural development and Black Economic Empowerment (BEE). The focus of the strategy therefore is the promotion of farming in areas that were previously neglected by the apartheid system and areas of the country that did not have market access for their produce, most of these areas are in the former homeland areas. By doing this the South African government is attempting to achieve

a development balance between previously disadvantaged farming areas and commercial farming areas. Bio-fuels plant investment must also have a strong BEE shareholding and a catalyst for the transformation of rural economies and contribute to the government's Accelerated Shared Growth Initiative (AsgiSA).

The strategy adopted a short term focus (5 year pilot) to achieve a 2 percent penetration level of bio-fuels in the national liquid fuel supply, or 400 million litres per annum. This will contribute 30 percent to the national renewable energy target for 2013. The target has been revised down from the 4.5 percent target that was initially proposed in the draft strategy. According to the government, the 2 percent level can be achieved without jeopardising food security as it will focus on new and additional land. This will require about 1.4 percent of arable land in South Africa. Currently 14 percent of arable land, mainly in the former homelands is underutilized. The proposed blending ratio is B2 or 2 percent biodiesel and E8 or 8 percent bio-ethanol.

The new strategy recommends sugar cane and sugar beet for bio-ethanol production and soy beans, canola and sunflower as feedstock for biodiesel.

The new strategy caused strong reaction by agriculture and industry groups mainly because of the exclusion of corn as feedstock for ethanol production (see SF7044). The use of corn was excluded amid concerns over food security and fears of price increases. The disappointment for corn famers is understandable as they were from the very beginning involved in the formulation of the draft bio-fuels industrial strategy and contributed to it. South Africa's potential to produce corn surpluses in a "fairly stagnant" domestic market is well documented and an additional outlet for corn was welcomed. This is in contrast to oilseeds where there is a chronic shortfall necessitating imports exceeding the oilseed equivalent of more than a million tons a year.

New developments since the launch of the bio-fuel strategy

Since the announcement of the bio-fuel strategy several new investments in bio-fuel plants were announced:

- The **Industrial Development Corporation (IDC) and Central Energy Fund (CEF)**, both government owned, are at relatively advanced stages in setting up two bio-fuels projects with an investment value of more than R3.2 billion ($0.42bn), with the first production set for mid 2009. One of the projects will be located near Cradock in the Eastern Cape and the other will be located near Hoedspruit in Mpumalanga. The plan is for the Eastern Cape project to use sugar beet to produce about 90 million liters of bio-fuel annually, and the Mpumalanga venture to make 100 million liters of fuel from sugar cane. In addition, the IDC and CEF are also looking into the production of 150 million liters of bio-fuel made from sugar cane in Pondoland, which spans KwaZulu-Natal and the Eastern Cape.

- **Rainbow Nation Renewable Fuels Limited (RNRF)** announced a R1.5 billion ($0.20bn) bio-fuels processing plant in the Eastern Cape. The plant, which will be located in the Coega Industrial Development Zone in the Nelson Mandela Metropolitan Municipality, is expected to produce bio-diesel and pharmaceutical glycerine from soybeans from South Africa and abroad. The facility will consume 1.36 million tons of soybeans annually producing 288 million liter of biodiesel making it the largest soybean processing facility in Africa. Operation is expected to start at the end of 2009. The investment will provide a significant boost to the Eastern Cape economy. The project is expected to generate R4.5 billion ($0.59bn) in revenue annually and create 350 new permanent jobs. An additional 725 employment opportunities in

related sectors and 800 jobs during the construction phase are also expected to be created.

- The International Trade Administration Commission (ITAC) received an application from **SASOL** for a full rebate on the import duty of soybeans (currently at 8 percent), for the production of bio-diesel. SASOL indicated that it would need approximately 600,000 tons of soybeans for the initial phase of bio-diesel production. After crushing the soybeans for the oil which would be further refined into bio-diesel, it would then be converted to approximately 480,000 tons of soybean meal. This quantity of soybean meal represents more than 60 percent of the soybean meal imported during 2007. ITAC announced that the application for the full rebate on the import of soybeans for the production of bio-diesel has been approved for a period of 3 years to enable the bio-diesel industry in South Africa to get off the ground. This rebate is only valid from July 1, 2008 to June 30, 2011; thereafter the applicant has to use local soybean or import at a duty.

- A bio-fuels research program was established at the **University of Stellenbosch**. This five year program worth two million rand ($0.26 million) per year aims to develop completely new technologies especially in the bio-ethanol field, as well as to adapt new and existing technologies to South African conditions. Technology development for commercial bio-fuels production will focus on five key areas:
  a) process development to produce biodiesel from various virgin and waste vegetable oils;
  b) second generation technologies for the fermentation of starch and ethanol from i.e. maize, sweet sorghum, wheat, triticale and sugar beet;
  c) using plant biomass (the most abundant source of carbon in nature) as feedstock for bio-fuels production by biochemical and thermo-chemical conversion, i.e. from waste material in the wheat, sugar and paper industries, as well as from giant bamboo;
  d) integrating bio-fuels and high-value chemicals production into a single bio-refinery, where a range of substrates and products can be combined based on the conditions in a particular local industry and region;
  e) process modeling to produce bio-ethanol, biodiesel, bio-oil and other clean alternatives (i.e. hydrogen and methanol) from biomass.

The corn industry will, however, be losing out on huge planned new investments and developments. Ethanol Africa's plan to build eight corn-to-ethanol plants across South Africa's main corn-growing areas at a cost of approximately R8bn ($1.0bn) is now something of the past. Each plant would have had an annual capacity of 160 million liters of ethanol, 10 million liters of bio-diesel and 120,000 tons of oil-cake, which was to be used for stock feed.

At a meeting held after the corn ban for bio-fuels, Grain SA, Agri SA and the National African Farmers Union (Nafu) informed Department of Agriculture Minister Lulama Xingwana that their members were capable of producing surplus corn that could be used for bio-fuels without impacting food security. The Minister said she would arrange a meeting with the minerals and energy minister with a view to reopening the subject. However, since that meeting no other high level meeting, discussing the corn ban has taken place. Given the current upward trend in food inflation and the fact that corn is a staple food for many South Africans including the poorer household, Post does not foresee any change in policy to include corn as a bio-fuel feedstock.

South African grain producers still have faith that a viable bio-fuels industry can be developed. At their annual conference, grain farmers decided to focus on non-staple food

grains such as grain sorghum and triticale as options for bio-fuel production. They, however, also added that they will continue to lobby government to include all grains in the bio-fuels strategy. The Grain SA corn working group is set to revisit the bio-fuels policy and analyze it in depth.

Although both SASOL and RNRF indicated that they will use soybeans as feedstock for bio-fuels production, Post doubts that South Africa will see a huge increase in soybean production. South Africa is a plant oil and plant protein deficient country. Over the past ten years, the area planted under oilseeds has fluctuated drastically. Approximately 792,900 hectares, far less than corn hectares, of oilseeds were planted in 2007, 40.83 percent more than in 2006. The main reasons for this year's increase were the favorable climatic conditions experienced during the planting season and also the sharp increase in international oilseed prices in the latter part of 2007. Of the 792,900 hectares planted with oilseeds, sunflower constituted about 71 percent, soybean 22 percent and peanuts seven percent. The production of sunflower is the main domestic source of plant protein due to agronomic conditions and oil preferences for human consumption. An important relationship exists between the area planted under corn and the area planted under sunflowers due to the nature of their substitutability. Sunflowers are well adapted to the South African hot and dry climate and can be produced economically even when there is not enough moisture to produce most of the other summer crops.

The area to be planted with oilseeds later in 2008 will be influenced in a positive manner by a combination of the relatively high local price levels, the current above average expected crop and the use of soybeans and sunflower as feedstock for bio-diesel production according to South Africa's new Bio-fuels Industrial Strategy. However, South Africa has shown a long-term inability to produce sufficient oilseeds or to significantly expand production to meet local human and animal demand. In addition, the focus of the new Bio-fuels Industrial Strategy is not on commercial farmers but more on previously disadvantage communities and emerging farmers which automatically come with a development phase. Budget estimates for the coming oilseeds production season also indicate that production costs will increase by at least 50 percent. Hence, it is not expected that South Africa will see a dramatic shift to oilseeds production in the coming planting season. The area to be planted with oilseeds in 2008 might increase to 850,000 under normal climatic conditions. This will on average result in an oilseed crop of about 1.3 million tons.

There is unprecedented interest in the potential of the sugar industry with regard to bio-fuels and energy production. The significantly higher crude oil prices, the current electricity crisis in South Africa and environmental pressures make the prospects for renewable energy more attractive *vis-à-vis* sugar. This includes increased interest in ethanol production and the co-generation of electricity.

The challenge to the South African sugar industry is to assist government to facilitate an environment which allows the industry to capitalize on their advantages and to contribute to the overall energy pool (bio-fuel and co-generation) in an adequately remunerative energy market.

But industry players have argued that South Africa is not suited for mass production of sugar cane because of erratic rainfall and bad soil. Other arguments against the sole use of sugar cane include the logistical challenges of transporting fuel from KwaZulu-Natal - the only place where climatic conditions allow sugar cane plantings - to inland retailers.

Very little data on bio-fuel production is available at this moment as South Africa is not yet involved in bio-fuel production on a large scale. Very small quantities of bio-diesel - mainly

for personal consumption - are produced on farms. However, it is estimated that by 2010 South Africa will produce around 100 million liters of bio-ethanol and 200 million liters of bio-diesel.