

# Big Business Drives SA's Biofuels Programme

By Gareth Jones  
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**african centre for biosafety**

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The African Centre for Biosafety (ACB) is a non-profit organisation, based in Johannesburg, South Africa. It was established to protect Africa's biodiversity, traditional knowledge, food production systems, culture and diversity, from the threats posed by genetic engineering in food and agriculture. It has in addition to its work in the field of genetic engineering, also opposed biopiracy, agrofuels and the Green Revolution push in Africa, as it strongly supports social justice, equity and ecological sustainability.

The ACB has a respected record of evidence based work and can play a vital role in the agro-ecological movement by striving towards seed sovereignty, built upon the values of equal access to and use of resources.

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In late February 2012, leading figures from the fossil fuel industry met in Pretoria to forge ahead with the government's highly controversial plans for a biofuels industry in South Africa. The catalyst for this meeting was the publication by government last September of draft regulations for the mandatory blending of biofuels in the nation's liquid fuel supply. These regulations stipulate that 2% of all petrol and 5% of all diesel should be from 'biodegradable' ethanol or biodiesel, derived from 'natural oils' or 'natural sugars' derived from 'vegetable matter.'

Climate change and energy security have made biofuels a hot topic. The EU aims to replace 10% of its transport fossil fuels with biofuels by 2020. The United States, egged on by an unholy alliance between agribusiness and defense hawks, has an even more ambitious target: biofuels are to account for 20% of all transport fuel by 2017. In 2011, for the first time, more maize grown in the US was used to make ethanol than to feed animals. Brazil, one of the new alternate fuel 'super-powers', began its own sugarcane based ethanol program way back in the 1970s. For most of the last decade, ethanol has accounted for at least 20% of all fuel sold in Brazil. In 2011, Brazil consumed 26 billion litres of ethanol, and exported another 2.5 billion litres. Alternative fuels also have their own unique history in South Africa. For many years SASOL, using coal-to-liquid-fuel technology developed by Nazi Germany, was able to prop up an internationally isolated Apartheid government that was unable to import crude oil.

South Africa's biofuels journey began in earnest in October 2005, with the establishment of an interdepartmental biofuels task team, who were given a mandate to develop a 'biofuels industrial strategy'. An early draft from February 2006 emphasised the use of surplus sugar and maize, and bringing 'under-utilised' land (predominantly in the former homelands) into production. Sensing a US style maize boom, one agri-business consortium fashioned plans to construct a R1 billion maize-to-ethanol plant in Bothaville, the heart of South Africa's maize belt. However, massive global food price increases during 2007, and the ensuing food riots around the world, made it politically untenable for South Africa to include maize as a biofuels feedstock, resulting in its exclusion from South Africa's final biofuels strategy published in December 2007.

South African's final biofuel strategy calls for 400 million litres of biofuels (equivalent to about 2% of all liquid fuel used) to be blended into the nation's fuel supplies. This is to be sourced from small-scale, previously disadvantaged farmers in the former homelands, growing sugarcane, sugarbeet, sunflower, canola and soya. The Industrial Development Corporation (IDC) and the Central Energy Fund (CEF) are the main drivers, and several projects sprang up around the country, with a particular focus on the Eastern Cape.

However, without regulations for the mandatory blending of biofuels into South Africa's petrol and diesel, agri-business and the fossil fuel industries are skeptical as to the success of a biofuels industry. While it is clear that those present at the February 2012 meeting share a common vision of a biofuels industry in South Africa, the details of how this is to be achieved are likely to be the subject of much debate over the coming months. The oil industry, while planning for this eventuality, is concerned with the extra costs that blending will entail, and also about security of supply. Producers' opinions varied; one, already engaged in a biofuel export project, argued that a biofuels industry would not be viable under a mandatory blending regime, while others questioned why second generation feed-stocks were not being considered. Concerns were also raised that compelling refiners to purchase only within South Africa could contravene South Africa's existing trade agreements, particularly within the Southern African Development Community (SADC). Further stakeholder fora have been planned to iron out these, and other issues, such as pricing mechanisms and feed-in tariffs. The Department of Energy (DoE) has set a target for the end of May

2012 to finalise the mandatory blending regulations, which seems highly ambitious given the lack of detail in many key areas.

The DoE is relying heavily on the employment potential of biofuels. The initial biofuels strategy projected that 25,000 extra jobs could be created. The Department of Trade and Industry's (DTI) Industrial Policy Action Plan (IPAP) of 2010 goes even further, pronouncing that up to 150,000 jobs will be created over the coming decade. However, a recent study from the Cradock sugarbeet-to-ethanol project in the Eastern Cape urges caution when assessing the apparent employment bounty on offer. Just fewer than 3,000 jobs are expected to be created, though half of these will only be during the construction phase of the bioethanol plant. Of the remainder, 170 will be in the factory itself, with a further 1,200 in transport, harvesting and other related activities. Present employment conditions in agriculture in the Eastern Cape are far from ideal; the absence of any union representation in Cradock hardly offers reassurance as to the quality of any new work created. Based on the Cradock example, in order to create 25,000 jobs would require that half a million ha of land be used for the growing of feedstock. The 150,000 jobs mentioned in the IPAP would need over 2 million ha (this is roughly equivalent to the area planted with maize every year).

No one doubts the scale of the unemployment crisis facing South Africa, but too often the rhetoric has been far from the reality. Similarly, the myths of 'underutilized' land and the 'sustainability' of biofuels need to be scrutinised, particularly given the lack of attention paid to them at the DoE's workshop in Pretoria. Authorities in Cradock are currently seeking a permit for the 1.25 million cubic litres of water the project requires. Considering that only 41% of households in the Eastern Cape have on site access to water, is this really the most prudent use of this precious resource? Similarly, in a province where poverty and hunger is pervasive, what impacts will the diversion of land from household food security to growing crops for fuel have on local communities?

As for the feed-stocks, maize, despite intense industry lobbying in the wake of a 4 million tons surplus produced in 2010, appears off limits for the time being. Second generation biofuels (for example algae or other non-food forms of biomass) are not being considered by government, as at present they are more capital than labour intensive. One workshop participant claimed the technology was at least 15 years from commercialisation in any event. Of the prescribed feedstocks, sugarcane and sorghum appear the most likely for ethanol, though neither is without complications. The viability of producing bio-diesel will be contingent upon its price becoming competitive with that of vegetable oils. Presently, this only applies to the export market (which is not the aim of the strategy). If bio-diesel demand does take off, it could further exacerbate the alarming spread of Genetically Modified soya in South Africa, which has increased nearly fourfold since the biofuels strategy was published. GM soya has been engineered to withstand liberal applications of Monsanto's blockbuster herbicide 'Roundup', which has been associated with severe risks to human health and the environment.

The sugar industry believes that a 2% blending ratio could be achieved with 400,000 tons of sugar, though small scale farmers currently produce less than half of this amount annually. Whether the large sugar estates would be willing to make up this shortfall is questionable, so long as high global sugar prices make exports more attractive. During 2009/10 South Africa exported over R2.3 billion worth of sugar. Though Cradock project has a focus on sugarbeet, it will also be able to process sorghum which, though not widely consumed in South Africa, is the continent's second most important grain crop after maize.

Moves are afoot at Bothaville in the Free State for a huge R1.7 billion sorghum to ethanol plant, with an expected completion date of June 2014. The project is being driven by Sterling Waterford, a Mauritian based private equity firm with a particular focus on carbon markets, and the Mvelaphanda group, one of South Africa's largest BEE holding companies. Senwes, one of South Africa's largest agribusiness, and Noble Resources, a \$60 billion a year global grain trader based in Hong Kong, are among the project's corporate partners. The plant will have the capacity to process 400,000 tons of sorghum a year, though at the last count only 150,000 tons was produced nationwide. Considering the plant's location in the heart of the country's 'maize triangle', it is debatable as to how much sorghum will be sourced from emerging farmers. Interestingly, the processes for producing bio-ethanol from sorghum and maize are virtually identical.

If small holder farmers are involved at all, past experiences of contract farming style initiatives do not bode well. GM cotton was introduced into the Mahkathini Flats to great fanfare in the late 1990s, only for the scheme to all but collapse under the strain of massive farm debt; in the last five years alone over 2,000 emerging farmers have left the cotton sector. This experience has been echoed in the Eastern Cape, where farmers encouraged to plant cash crops and, in some cases without their knowledge, GM maize, cotton and soya, have been undermined by poor extension services, unscrupulous buyers and yet more farm debt. The provision of external credit, seeds and chemicals, no matter how noble the intent, will not address the deep structural inequalities in our society.

In a similar vein, the notion of the 'Green Economy' is a misnomer, and effectively translates into business as usual. With the biofuel strategy, the oil, motorcar and agribusiness industries have clearly spotted an opportunity to continue their relentless pursuit of profit, at any environmental and social cost. The development of a fully integrated, safe and reliable public transport system in South Africa should be among the government's top priorities, as should supporting efforts to shift agriculture away from its current mode of plantation mono-crops, chemical inputs and privately controlled seeds and knowledge. However, these fundamental changes directly contradict the interests of those in control of the biofuels process.