

The Cane Grower

The Newsletter of the South African Cane Growers' Association
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Government Releases Biofuel Blending Regulations for Public Comment

By Thomas Funke—Director: Industrial Affairs

On 16 September 2011 the Minister of Energy, Dipuo Peters, published for comment draft regulations regarding the mandatory blending of biofuels with petrol and diesel. The draft regulations come at an opportune time if we consider that 17th Congress of the Parties on Climate Change (COP17) is around the corner and that our government may want to exhibit its commitment to 'go green'.

The draft proposal makes some strong statements on the use of bioethanol and biodiesel in the local fuel mix and sets out a number of regulations that need to be adhered to if a prospective manufacturer would like to enter the fuel industry. These regulations range from the licensing of biofuels, to procurement and blending volumes. Specific reference is also made to activities that are prohibited and records that are to be kept by licensees.

Licensing, Manufacturing and Blending of Biofuels

Every biofuel manufacturer needs to be in possession of a valid biofuel production license, as per the regulations set out in the Industrial Biofuels Strategy of 2007. Once such a license has been granted and these will be granted in accordance with the rules of the strategy at the discretion of the Department of Energy, may the licensed manufacturer trade in biofuels with other licensed blenders of the fuel. It is important to note that a licensee may only purchase biofuels from a licensed biofuels manufacturer in the Republic of South Africa. What will have to be seen is how strongly this will be enforced if the required volumes cannot be sourced locally.

The production of biofuels is envisaged to be highly regulated. According to the draft regulations, it is envisaged that the price for both bioethanol and biodiesel

will be determined by the Minister of Energy and that purchasers of biofuels, will be required to pay the regulated price to the licensed manufacturers. Unfortunately no pricing information was available and therefore it is even more difficult to determine if the proposed regulation will promote any form of investment.

The regulations further define the minimum volumes of bioethanol and biodiesel that are to be blended to the petrol and diesel volumes, respectively. The percentage blends mentioned refer to minimum concentrations of 2% and 5% respectively, and forces licensees (blenders) to purchase a minimum of these volumes in order to meet the mandatory blending requirements. The enforcement of such a regulation does provide the potential biofuel manufacturer with at least some certainty. The concern arises in a situation where the mandate level is reached, which is also commonly referred to as the blending wall

(Continued on page 2)

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(Continued from page 1)

concept. Once this occurs, the demand for additional biofuel volumes is zero, meaning that the prices available will be very low, and thus could impact on viability as well as future development of the sector.

Other Regulatory Measures

It is envisaged that strict requirements for standards and specifications are in place for all biofuel products. Biodiesel will be subject to the South African National Standard for Automotive Biodiesel, SANS 1935 while bioethanol is subject to standards code SANS 1164. No manufacturer of a biofuel may produce a product that does not comply with the set standards and in addition will have to supply extensive information on volumes produced, sold and to whom the fuel was sold, to the Department of Energy. Similar regulations apply to the licensee, who will also have to provide information on volumes purchased and from whom, volumes blended into biodiesel and bioethanol, as well as the companies from whom the fuel was purchased.

Success or failure?

At this stage of the policy development process, it is difficult to determine if the policy will be a success and if the South African sugar industry will benefit from it. The viability of the sector will largely depend on the regulated price at which bioethanol and biodiesel will be sold. The pricing structure is important as a linkage to the macro-environment could have severe consequences on the project's economic viability. As biofuels and especially bioethanol will have linkages to both the fossil fuel and agricultural sectors, in terms of relative feasibility, counter cyclical support measures should be put in place that accommodate the volatility in these markets.

At present, analysts project that the world might be heading for another recession. Various countries are in financial turmoil and this has had an impact as to how governments behave. If downward risk is apparent fundamentals take over and one often experiences investors moving into safer havens such as the dollar or gold. Soft commodities often suffer under this and it is envisaged that such activity could have a negative impact on various commodities such as crude oil and sugar. At the time of writing, crude oil had already come down by more than 15% from its 2011 high while sugar had also receded from 30c/lb to around 24 c/lb and, with a large surplus from the northern Hemisphere looming, a new lowest price could well be tested.

A good biofuels policy needs to have a longer term outlook and functionality and should be designed to cater for such eventualities and therefore careful consideration needs to be given as to how this is to be structured. It is crucial that all scenarios are carefully analysed so that the policy can work efficiently and effectively after implementation.

(Continued on page 4)

A Note on Employment in the SA Sugar Industry

By Stuart Ferrer—Manager: Economic Research

Industry employment statistics are important because employment creation is a key driver of policy decisions in South Africa. This article presents a discussion on the industry employment statistics that are presented in the 2011/12 Season Sugar Industry Directory.

Employment in an industry may be categorized as direct employment, indirect employment and induced employment. People directly employed by the industry include sugarcane farmers, farm workers, and employees of sugar mills. Indirect employment refers to jobs created in up-stream provision of inputs and services to the industry, e.g., industry support staff, contractors and their employees, retailers and marketers of farming inputs and machinery, and agri-bankers. If an agricultural input supplier conducts 50% of its business with sugarcane farmers, then it may be argued that 50% of its employees are indirectly employed by the sugar industry. Indirect employment also includes jobs created in down-stream value-adding activities, for example, contractors and their employees, wholesaling and retailing of sugarcane products by businesses other than sugarcane millers. For example, if 10% of an agro-processor's costs of production are sugarcane products, then it may be argued that 5% of its employees' jobs are indirectly attributable to the sugar industry. However, because imported sugar may be easily substituted for locally produced sugar in value-adding processing activities, down-stream employment in the sugar supply chain is probably best considered as being over-and-above indirect employment attributable to our industry.

Wages and returns to capital investments that accrue to households as a consequence of direct and indirect employment and capital investment in the industry give rise to increased demand by these households for other goods and services in society. This gives rise to additional economic activity with additional employment opportunities, which, in turn, stimulates further economic activity and employment. This additional employment is described as induced employment.

The number of registered growers provides an estimate of self-employment. This number has declined from more than 50 000 at its peak to just above 29 000. This is an upper-bound of self-employment in the industry as not all registered growers are active in sugarcane farming. Findings of CANEGROWERS' Cane Productivity Surveys indicate the large scale growers employ approximately 68 000 workers (0.23 workers p/ha under cane). Assuming similar land to worker ratios, it is estimated that miller-

(Continued on page 4)

Alternative Sources of Revenue from Sugar Cane: A Project in Mpumalanga

By Justin Murray—Grower Affairs Manager: Mpumalanga

Sugar cane growers in South Africa have been increasingly frustrated at the South African industry's inability to utilise the full range of revenue opportunities available through our crop. Recent developments in the Sugar Act Review process are encouraging that the impasse at industry level is likely to be overcome, soon opening the way for co-generation of electricity, production of ethanol and a variety of other potential revenue streams should they prove to be bankable.

Cogenerated electricity and ethanol are not new technologies, nor are they unknown to South African cane growers. A technology which, although not new, is generating lots of excitement in Mpumalanga, is pyrolysis.

The Mpumalanga Cane Growers Association (MpCGA), along with partners Tsb Sugar Ltd and technical services specialists Aurecon, are undertaking a project which aims to determine the feasibility of converting excess sugar cane revenue, which is traditionally left in field, into tradable commodities, including Charcoal, Bio-oil and electricity. This project is part funded (€100 000) by the Governments of Finland and Austria and is hosted by the Development Bank of Southern Africa through the Energy and Environment Partnership Program with Southern and Eastern Africa.

The entire process, from the collection, transportation and conversion of the available biomass into the bio energy products and the subsequent distribution and marketing of the products, forms a part of the feasibility study.

Cane tops will be used as the primary source of biomass. Invader plant species, municipal garden waste and any other residual plant matter available in adjacent areas will supplement cane tops. Tsb Sugar and MpCGA have embarked on an energy project to investigate the opportunities that cogenerating electricity offers the region. If green cane harvesting were introduced as a function of the Energy Project, the yield of available biomass per hectare would increase significantly increasing the availability of biomass.

It's in the conversion of this biomass into energy that the technology comes into play. The first step in the conversion process is to prepare the biomass for the pyrolysis process. The preparation standards will be determined by the preferred technology.

Pyrolysis is not new technology and has been used since ancient times to produce charcoal from wood. The organic matter (wood) is heated in a low oxygen environment. The products are charcoal as well as fluids and gasses which can be harvested and converted into crude bio oil. Although many different pyrolysis techniques exist, this project will be investigating two alternatives.

Slow pyrolysis is a process which produces high charcoal yield, while fast pyrolysis yields less charcoal and maximises the production of bio-oil. Slow pyrolysis requires high density pellets. These pellets would be created using off-the-shelf technology to produce large pellet rods—most likely at field's edge—which could be easily transported and stored prior to the carbonisation and pyrolysis process at a central plant. Slow pyrolysis would thus offer reduced logistics costs, but only offers access into the charcoal market.

Fast pyrolysis, on the other hand, requires the biomass to be prepared into a very fine material to enable the faster conversion process. The faster process is enabled by the use of a fluidized bed. This technology passes the finely prepared biomass through a bed of very hot sand which is fluidized by gas. The high rate of heat transfer from the sand to the biomass enables a faster burn and the conversion from biomass to char and combustible gasses which after cooling produces the crude bio oil. Fast pyrolysis offers both charcoal and biomass as products, but may have higher logistics and preparation costs.

An important factor to consider—and another research area—is that the marketability of the respective products will also influence the determination of the preferred technology. If a market demands a supply of charcoal the slow pyrolysis technology may be preferred, while if a profitable market for bio oil is found, fast pyrolysis may be the answer.

Although the opportunities being investigated in Mpumalanga are only at a research stage, at present they offer an impact on more than only an improvement in income levels. These products would create an exciting industry parallel to the existing sugar industry which would contribute to that most important commodity in South Africa—employment and skills development opportunities and community upliftment.

If the proof of concept is achieved through this research, the next step is to establish a pilot plant in the region to establish some baseline data and turn the concept into a fully functional scalable plant, which, if successful, could be replicated in other sugarcane producing areas throughout the industry. ●

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Getting the Message

By Jayne Ferguson—Communications Manager

Communication is like an iceberg, and like the Titanic, most of us only see the approximate 12% that makes up the tip of it! We see this in the form of visible elements or design concepts, such as a company logo. The 88% of communication support happens below the surface and is the behind the scenes work that ensures the support and on-going visibility of the 12%. Now if that is confusing to you, you can imagine how delicate it is to get most of the 88% right, especially when working with such a diverse group of cane growers! Unless properly focussed, this whole process can be fraught with error, with messages often misinterpreted resulting in confusion, wasted effort and missed opportunity.

Communication and knowledge management are key components of CANEGROWERS' business plan and vital for its long-term effectiveness, particularly so as we move into a new sugar industry environment. This entails ensuring that mutually beneficial relationships are established and maintained between CANEGROWERS and its various stakeholders. The management of these relationships requires extensive planning and behind the scenes work to bring to the forefront messages and mechanisms that will satisfy the relationship. CANEGROWERS realises the benefit of engaging with its stakeholders and has gone a long way in ensuring that we communicate with our identified audiences. As we go forward in a new cane growing environment and with the myriad of new delivery mechanisms and channels which are available to assist in our communication efforts, we need to know what you, the cane grower wants to hear, how you want to hear it and when you want to hear it.

With this in mind, we will be conducting a Communications Survey with a random sample of cane growers as participants. These participants will soon be contacted, either by e-mail (so you can complete the form on-line), or through one of our regional staff. We appreciate that cane growers are busy, but the only way we can accomplish our objective is by asking questions. Your input will be valuable to us in our efforts to improve our communication with you, our customer. ●

(Continued from page 2)

Actions

The South African sugar industry, through the SASA biofuels working group, is currently developing a document which gives constructive comment to the draft regulations that have been published by the Department of Energy. CANEGROWERS is part of this working group. Comment will be submitted to Government before the 18 November 2011 deadline. ●

Price of Recoverable Value (RV) in Cane

OCTOBER 2011 RV PRICE FOR 2011/12 SEASON

The Sugar Association has declared the October 2011 RV price for cane delivered in **September 2011**:

RV PRICE:	R3 015.01 per ton of RV
"d" factor	0.387236

The price is based on a crop of **17 028 680** tons of cane which converts to **1 864 530** tons of sugar at a cane to sugar ratio of **9.13**. The average RV content is **11.60%**.

EXTENSION LEVY

The average regional levy (excl. VAT) payable by participating growers for Extension Services for cane delivered during the 2011/12 season is:

R0.71 per ton of cane

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cum-planter farms employ a further 6 800 workers. Findings of the FIRCOP study showed that few small scale growers employ full-time workers; they rely predominantly on family labour (therefore accounted for in self-employment stats), and contractors are hired to assist with planting and harvesting activities (therefore included in indirect employment). I don't have statistics on employment in sugar mills, but if each of the industry's 14 sugar mills employs 300 people, then total direct employment in the sugar industry is estimated at 79 000 over-and-above the number of self-employed farmers.

Indirect and induced employment are more difficult to estimate. Prof McCarthy studied the economies of six sugar mill areas and established that the existence of each sugar mill gave rise to approximately 25 000 jobs over and above direct employment in the sugar industry in the mill area. This equates to 350 000 indirect and induced jobs across the industry's 14 mill areas! Note that this approach excludes jobs attributable to the sugar industry that are created outside of mill supply areas. Another approach is to use detailed information all input-output relationships, employment, ownership of capital and resources, and expenditure patterns by households to model an economy. Because this information is never perfect, subjectivity is introduced within such an analysis. SASA and the NAMC have contracted a team of economic consultants to undertake such a study. It will be interesting to see how closely their results match Prof McCarthy's findings. ●