Production of Ethanol for National Consumption in Malawi

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Malawi Profile

- Population – 15 million
- GDP growth at 5.5% in 2011, declining.
- Land locked – 118.5 sq Km in size, 24.4 sq km of which is water
- Former British colony
- Independence in 1964, one party
- Multiparty in 1994
Why ethanol for fuel?

- Fuel Crisis of the 1970’s
- Land Locked and Non fossil oil producer
- Energy Security
- Boosting rural economy
- Climate change and increased fossil fuel prices
- Qualified government support
- Competent Players in the game

- Available arable land for feedstock
- A renewable energy
Malawi’s Ethanol Industry - Roots

- Spearheaded by Dr Banda – first head of independent state
- First plant in 1982 and 20% blending ratio attained same year (Brazil -1983)
- Tops all fuel options due to being technically economically and financially attractive for Africa as a whole
Malawi’s Ethanol Industry - Capacity

- Two plants, owned and managed by Malawians
- EthCo, commissioned in 2004, with design capacity of 60,000 litres ethanol per day
- PressCane in the Lower Shire, commissioned in 2004, also with a capacity of 60,000 litres per day
- Combined annual capacity of 36 million litres
- Current production volumes at 18 million litres due to feedstock inadequacy
ETHCO

- In alcohol production for 30 years
- Uses C molasses from Dwangwa Sugar mill
- Products
  - fuel alcohol
  - industrial alcohol
  - beverage (potable) alcohol
- Staff compliment of 100
Presscane

- In alcohol production for 8 years
- Uses molasses from Nchalo Sugar mill, 40 km away from the plant
- Products
  - fuel alcohol
  - industrial alcohol
- Has a staff compliment of 120
Malawi’s Ethanol Industry - Market

- National fuel ethanol demand currently at 22 million litres
- Current production volumes around 18 million litres, 30% of which is beverage
- A lot of beverage and industrial ethanol market in the Eastern and Southern Africa Region
- Most neighbouring countries warming up to ethanol production – Zambia, Tanzania and Mozambique
- Malawi working on further increase on the use of fuel ethanol through the EDVP( flexifuel car) project
Ethanol Driven Vehicle Project

- ETHCO, Presscane government and others embarked on a 5 year project
- ETHCO identified and imported a flexifuel car from Brazil, October 2007
- Project concluded and Government announced approval of ethanol as a stand alone fuel in 2012
- Implementation is yet another phase
- First Country in Africa to venture into a flexicar program
Current and Near Future Players

- **Current**
  - South Africa
  - Malawi
  - Kenya
  - Zimbabwe

- **Future**
  - Mozambique
  - Tanzania
  - Elsewhere
Barriers to Ethanol Production

- Institutional barriers e.g. blending policies, levies
- Markets
- Technical barriers e.g. expertise
- Government support can be inconsistent
- Public Awareness
- Fossil fuel producers’ and suppliers’ cartels
- Feedstock inadequacies
Feedstock Options

1. Sugar cane C molasses
2. B Molasses
3. Sugar cane syrup
4. Sweet sorghum
5. Food crops???
6. 2\textsuperscript{nd} generation options in form of sugarcane bagasse or agricultural waste (biomass)
The future

1. Biofuels need to be tailored on a regional basis
   - BRAZIL
   - USA
   - EU
   - CHINA
   - INDIA
   - AFRICA

Regions in their own right
The future

2. Biofuels can and should be an integral part of and boosters for national economy in the third world by
   - Increased employment
   - Access to advanced technologies
   - Production of byproducts like organic fertilizers

3. In Africa, biofuels should be conceived for the domestic market first and the export market later – most African markets are net importers of expensive fossil fuels
The future

4. Food vs fuel debate: Care should be exercised not to compromise land meant for staple food production

5. Environmental concerns and mitigation measures must be adequately factored in our biofuels production ventures

6. Choice of feedstock for biofuels production must be rationally made
The future

7. Plenty of room for biofuels utilization e.g. in cooking stoves

8. For new establishments, the sugarcane growing, sugarcane production and molasses/cane juice/biomass for ethanol production link must be critically explored

9. Role of government in ensuring the existence of an enabling environment (right investment climate, regulations, policy etc) must be clear and adequate
The future is here
Biofuels are the future
A Biobased economy is the key to sustained development for most African Countries
Thank You

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