Renewable Energy Policy

(Emphasis on biofuel sources)

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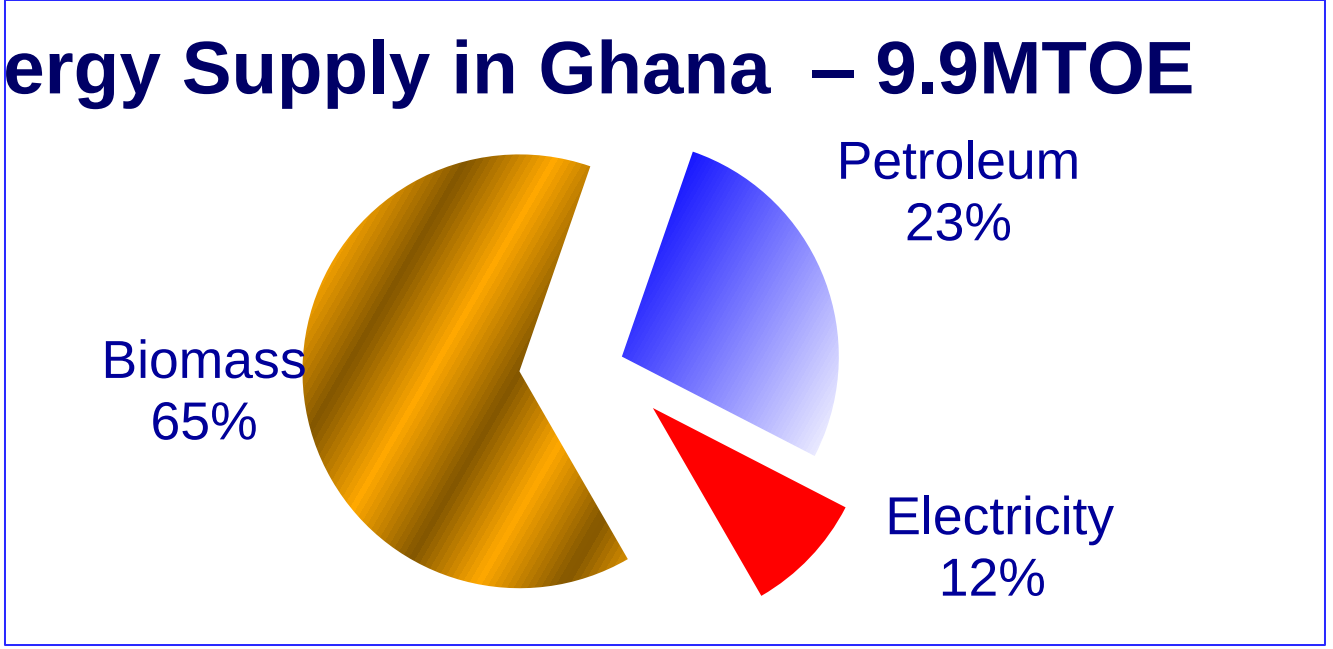
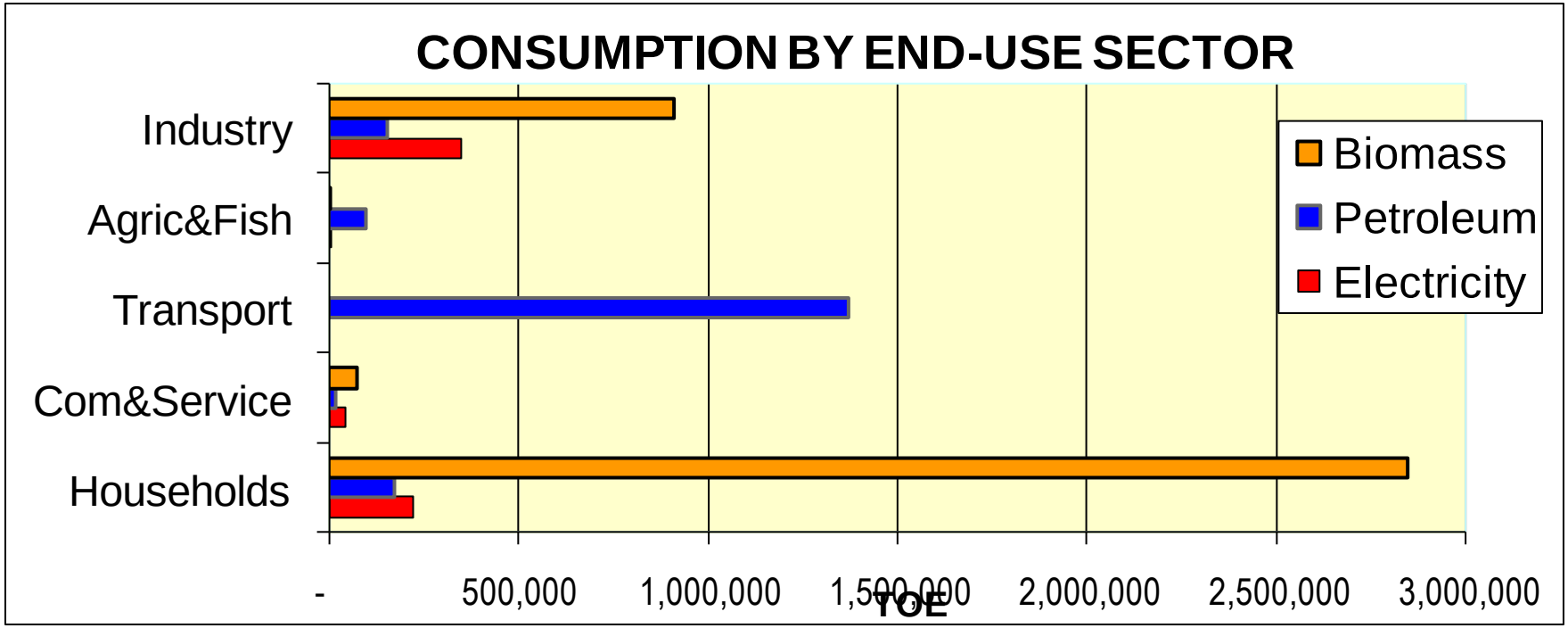
Workshop on Production of non-food bio-oil supply chain for Renewable Energy in Ghana.
7-8 October 2010, Accra Ghana

Total Energy Supply in Ghana – 9.9MTOE

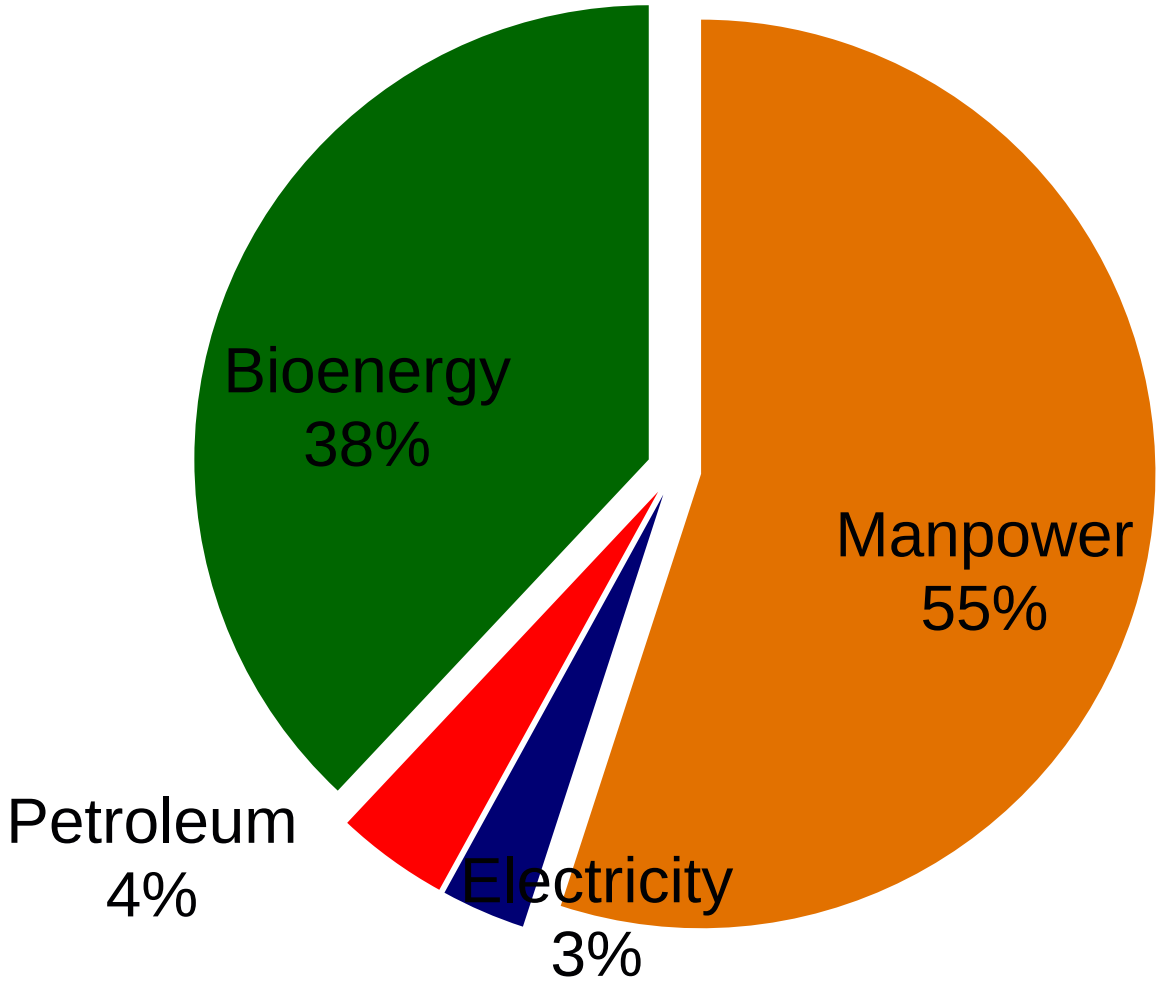




Rural Energy Options

- Petroleum
  - Shaft power: Milling, transport
  - Lighting, cooking, heating
- Electricity
  - Lighting, ICT, entertainment,
  - Storage, cooling, shaft power - milling
- Bio-energy
  - Direct combustion: Food processing, oil extraction process, brewing, distillation, smoking.
- Man-power / Animal-power
  - Water supply, woodfuel supply, grinding, transport
  - Ploughing, havesting, fishing, Carpentry, construction, sewing, weaving,

Share of Rural Energy Options



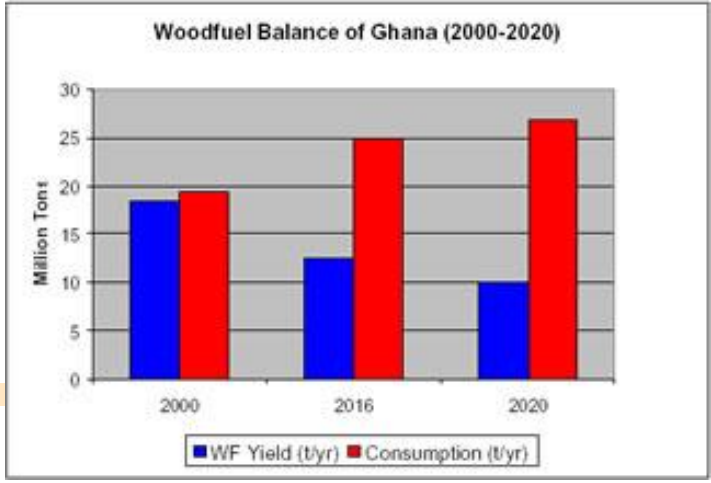
Bio-energy

- Key energy resources in Ghana and of the future (Cheap and can be sustainable).
- Wide range of resources including
  - natural forests,
  - short-rotation plantations,
  - wood processing,
  - agricultural residues and
  - Municipal and industrial organic waste.
  - energy crops,

Bio-energy Policy Issues in Ghana

- Over dependence on woodfuel for cooking and heating.
- Health and environmental implications of inefficient conversion devices
- How to reverse decline of the woodfuel resource base in Ghana and shift to alternatives sources

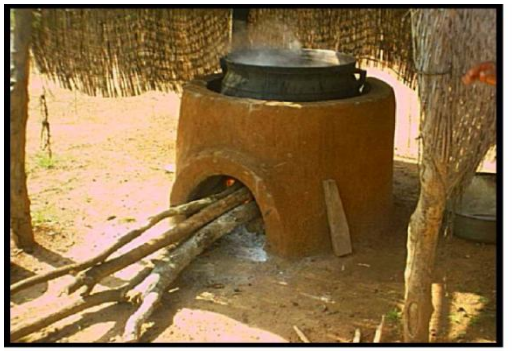
Bio-energy Policy Issues in Ghana



- Growing imbalance in woodfuel consumption and yield.
- Weak enforcement of policy and regulatory framework for the production, transport and export of woodfuel
- No favourable regulatory and fiscal regime to attract investment in bio-energy for electricity or transport fuel
- Inadequate R&D in Bio-energy
- No specific regulatory mechanism for the production, local use and export of biofuel.

Overall Policy Directions – Bioenergy

- Regeneration of woody biomass resources
- Promotion and use of efficient biomass utilization technologies
- Promotion of alternate fuels such as LPG as substitute for firewood and charcoal
- Support Research and development
- Creation of Legislation and favorable regulatory framework to attract investment (Renewable Energy Law).



Some Experiences with Modern Bio-energy Applications

- Improved cookstoves (firewood & Charcoal)
- Improved charcoal production technologies
- Briquetting
- Co-generation (sawmill / palm residues)
- Biogas (municipal/farm waste, animal dung)
- Gasification (feasibility study/research)
- Biodiesel – Jathropha, oil palm, soya bean oil, sunflower oil, etc.

Liquid Bio-fuel

- Liquid Bio-fuel is quite a recent phenomenon in Ghana
- Interest has been on bio-diesel from the Jathropha,
- Several initiatives by private investors and NGO including UNDP-Ghana
- Gov of Ghana facilitated testing of refined products in the lab. and made available a pick-up to test fuel performance.

Rational for Gov. Interest

- Potential for large scale production to create jobs and provide cheaper local alternative petroleum fuel
- Very little skill will be required to optimise production
  - Local skills for feedstock cultivation and processing is traditionally known
- Put large uncultivated land including degraded lands to productive use to increase biofuel feedstock and food production
- Save foreign exchange on petroleum imports.

Bio-fuel Challenges

- Production of the vegetable oil (jathropha, palm oil, soya, coconut etc) is high (US$1.2 -1.6/litre)
- Transformation to biodiesel requires additional 40-50% of cost (US$2.3/litre).
- The current price at the pump of US$0.8/litre made bio-diesel uncompetitive for local use.
- On going bio-fuel investments are therefore focusing on the export market rather than local market.
- Unfortunately, no framework is in place to regulate bioenergy production and sale for export as it is done in the case of cocoa, cotton, rubber etc.

Current developments on bio-fuel

- Foreign investors from Europe, Asia and South America are undertaking large scale cultivation of bioenergy mainly jatropha over the past 2-5 yrs.
- Traditional authorities released land with the hope of job creation, increased food production and access to social amenities and cheaper fuel alternatives.
- Unfortunately the expectations regarding the wonder plant Jatropha as portrayed on the web is different from the reality on the ground.
- Consequently the hope of job creation, establishing social amenities like schools and hospitals are yet to see the light of day.

Why Jatropha?

- Why focus mainly on only Jatropha feedstock in Africa?
  - Why not oil-palm, groundnut, coconut, cassava, cane-sugar or other high energy crops with economic values common in Africa?
  - What happens if the incentive for biofuel supply to the industrialized countries are withdrawn?
- Biofuel production should be based on plants with additional commercial values other than fuel to ensure economic diversity and sustainability.

Future Perspective for bioenergy

- Bioenergy - woodfuel will continue to be the dominant energy resource in the foreseeable future in Ghana due to its availability and low cost.
- Other Bio-energy resources besides woodfuel also have the potential to deliver modern energy services (electricity and transport fuel) for local consumption and export.
- The challenge however is whether to encourage investment in bioenergy for export when the country itself lacks access to food and sustainable energy services?

YES

if the appropriate regulatory policies are in place and enforced,

- Bioenergy industry can be developed sustainably to
  - contribute to increased food production
  - Create worth and alleviate poverty
  - Contribute to increasing access to energy services in Ghana

Legislative Framework for Bioenergy

- Unlike the cultivation of agric plantations like plam oil, cocoa or timber which are subject to specific laws
- There are no specific laws governing biofuel feedstock cultivation as the use of the feedstock as a fuel product is relatively new and has not been exploited.
- The EC is currently collaborating with other agencies to dev. Framework and LI

Conclusion

- What we need is a pragmatic approach that will bring real benefits to Ghana and developed countries.
- The industrialized countries have the skills and expertise to assist Ghana and Africa in general to
  - develop and enforce appropriate policies and regulatory frameworks to ensure sustainability of the industry.
  - add value to the bioenergy products before being exported out of the country to create local jobs
  - R&D, Technology transfer and local capacity building.
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Your support is necessary to take up the Challenge of bio-energy exploitation in Africa

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