

ECOWAS REGIONAL BIOENERGY FORUM

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BIOENERGY POLICY DEVELOPMENT AND PRACTICE IN GHANA

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Presentation Outline

- Country Background
- Overview of Ghana's Energy Situation
- National Energy Policy target
- Renewable Energy Law
- Draft Bioenergy Policy
- Conclusion

COUNTRY BACKGROUND

- Location
 - Latitudes $4^{\circ} 44'N$ and $11^{\circ} 11'N$ and
 - Longitude $3^{\circ} 15'W$ and $1^{\circ} 2'E$.
- Area (Land:Water)
 - $238,539 \text{ km}^2$ ($235,264 \text{ km}^2$: $3,275 \text{ km}^2$)
- Climate (Average Temperature:Average Rainfall)
 - Tropical with 2 major seasons dry and wet ($30^{\circ}C$: 807mm)
- Population (2010): over 24 million. Growth rate (2010): 1.9%.
- Type of Government: Democracy
- Economy
 - Real GDP (2011): \$27.49 billion.
 - Real GDP growth rate (2011): 13.6%.
 - Inflation (February 2012): 8.6%



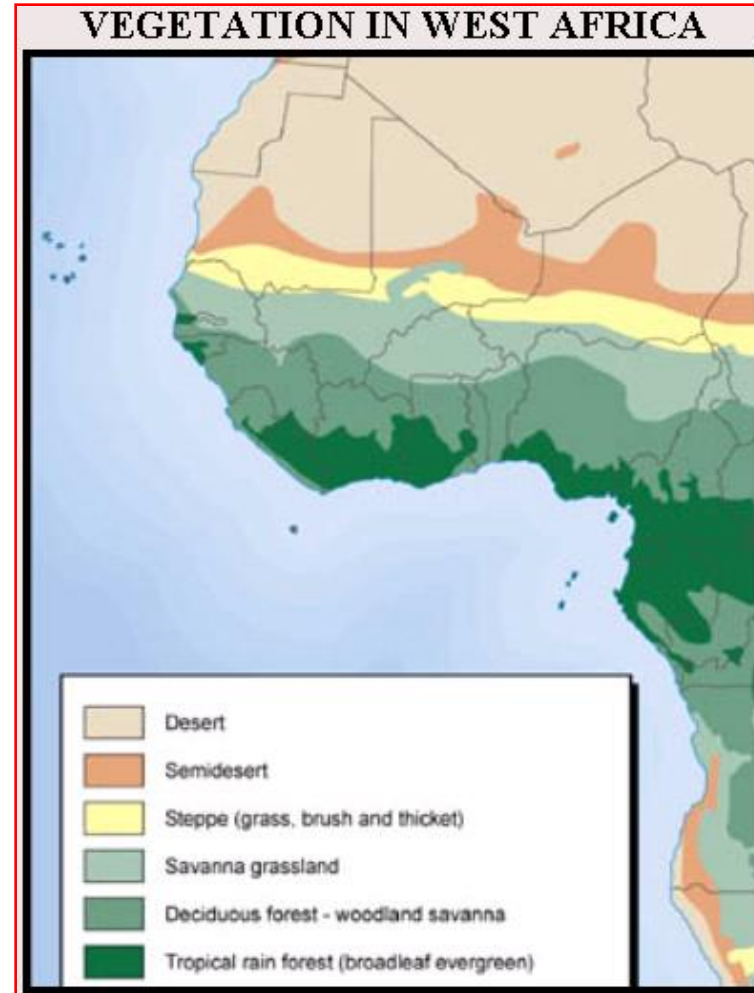
OVERVIEW OF GHANA'S ENERGY SITUATION

- Electricity Access (Dec 2011) 72%
- Electricity Installed capacity (2010) 2,170MW
- Electricity generation (2010) 10,166GWh
- Crude oil production (2011 av.) 80,000barrels/day

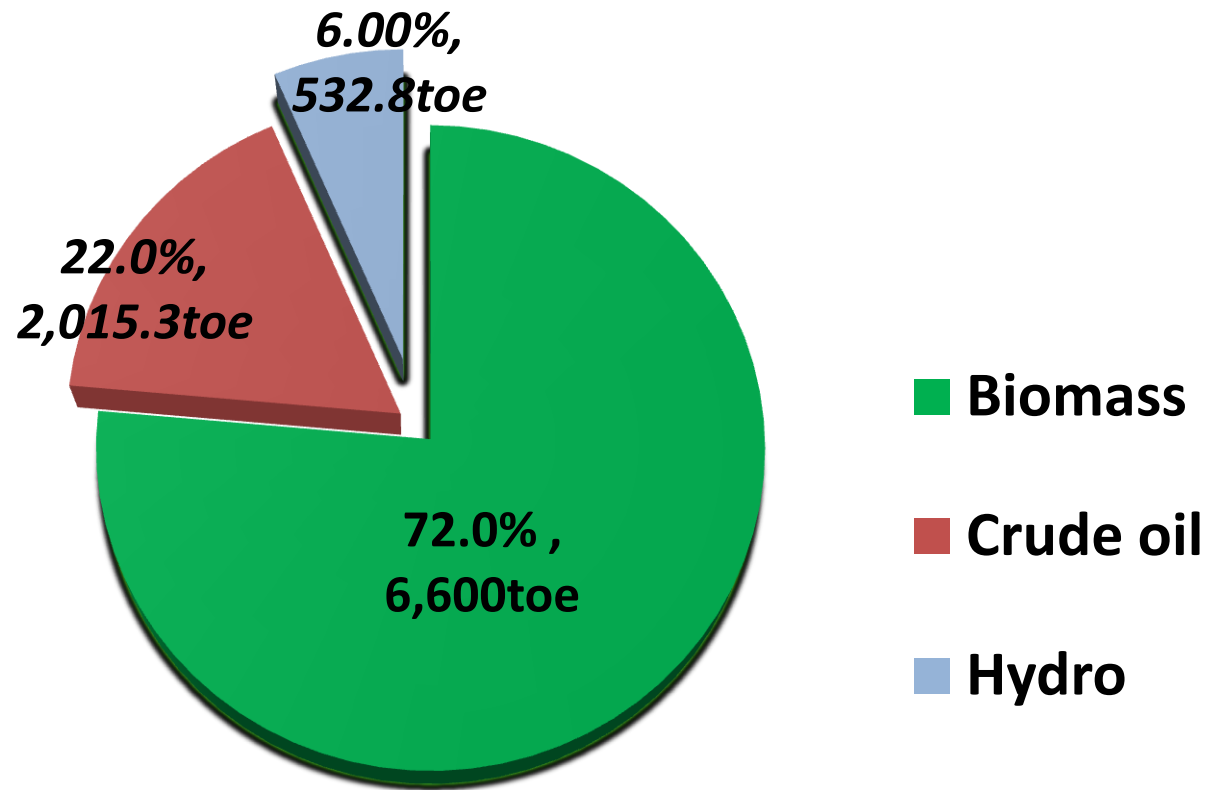
- Energy Resources:
 - Solar energy 4.5-6.0kWh/m²/day
 - Wind energy (along coast) 5.0 m/s at 12 metres height
 - Hydro 2,500MW (1,580 exploited)

BIOENERGY RESOURCES

- ❖ Total Wood supply for fuel is 30.7 million tonnes/annum
- ❖ Woodfuel supply is 8 million tonnes /annum
- ❖ Entire land cover has potential for energy crop / biofuel cultivation.
- ❖ Waste: Municipal waste is 2 million tonnes/annum;
- ❖ Wood residue is 2 million tonnes/annum
- ❖ Animal waste is 11 million tonnes/annum.



PRIMARY ENERGY SUPPLY IN GHANA



NATIONAL ENERGY POLICY

The overall national energy policy target is to attain 10% Renewable Energy in national energy mix by 2020.

BIOENERGY POLICY DEVELOPMENT

- The Renewable Energy Act, 2011 (Act 832)
- Draft Bioenergy Policy Strategy

RENEWABLE ENERGY ACT

FEED-IN-TARIFF

- A Feed-in-Tariff has been enshrined in the RE Act to guarantee the price of electricity generated from renewable energy resources, such as biomass.

- *technology being used in the renewable energy industry,*
- *location of the generation facility;*
- *costs associated with construction, commissioning, operation and maintenance of the plant,*
- *reasonable rate of return on investment, and*
- *balance between the interest of the consumer and the investor.*

- The feed-in-tariff rate fixed for electricity from renewable energy sources shall be guaranteed for a period of ten years and subsequently be subject to review every two years.

RENEWABLE ENERGY ACT cont'd

RENEWABLE ENERGY PURCHASE OBLIGATION

- Power distribution utilities and bulk electricity consumers are obliged to purchase certain percentage of their energy requirement from electricity generated from renewable energy resources such as biomass.
- In specifying the percentage level of electricity the following factors shall be taken into account:
 - the technology being used to generate electricity from renewable energy resources.
 - the net effect of the cost of renewable energy on the end user tariff.

RENEWABLE ENERGY ACT cont'd

Bioenergy power plants (e.g. cogeneration plants, etc) will benefit from the feed-in-tariff

RENEWABLE ENERGY ACT cont'd

RENEWABLE ENERGY FUND

- Establishment of the Renewable Energy Fund to provide incentives for research, promotion, development and utilization of renewable energy resources such as biomass.
- Sources of money of the fund:
 - Moneys approved by Parliament
 - Premiums
 - Donors
 - Moneys approved from the Energy Fund
 - Levy from biofuel export
 - **Woodlot plantations**
 - **Improved charcoal stove promotion**
 - **Biogas**

RENEWABLE ENERGY ACT cont'd

CONTROL & MANAGEMENT OF BIOFUEL

A licensee that has been granted a license to produce biofuel from agricultural feedstock, shall obtain relevant permit from the Ministry of Food and Agriculture and Environmental Protection Agency.

Ensuring balanced sustainable feed stock and food security

RENEWABLE ENERGY ACT cont'd

CONTROL & MANAGEMENT OF BIOFUEL

- The Minister shall designate biofuel blend as a petroleum product in accordance with the National Petroleum Authority Act, 2005 (Act 691).
- The National Petroleum Authority shall be responsible for pricing of biofuel blend in accordance with the prescribed petroleum pricing formula provided for under Act 691.
- The proportion of biofuel in biofuel blend offered for sale to consumers at the point of sale shall be determined from time to time by the National Petroleum Authority.

RENEWABLE ENERGY ACT cont'd

CONTROL & MANAGEMENT OF WOODFUEL

- The Energy Commission has been mandated to collaborate with relevant institutions to ensure the development and implementation of programmes to sustain woodfuel production and consumption.

Regulations are being developed to regulate the production, transportation and marketing of woodfuel.

RENEWABLE ENERGY ACT cont'd

INCENTIVES

- Recommend for exemption from customs, levies and other duties, equipment and machinery necessary for the development, production and utilisation of bioenergy resources.
- Recommend financial incentives necessary for the development, production and utilisation of bioenergy resources.

BIOENERGY POLICY STRATEGY cont'd

WOODFUEL STRATEGIES

- Sustainable Supply and Production
- Efficient Conversion and Utilisation
- Transportation and Marketing
- Woodfuel Fuel Substitution (Promotion of LPG)
- Institutional Development

BIOENERGY POLICY STRATEGY cont'd

BIOFUEL STRATEGIES

- Substitution of fossil fuel consumption with Biofuel
- Encouraging sustainable commercial scale production of Biofuel Feedstock
- Creating Demand for the Product
- Sustainable Production and Supply of Biofuel
- Pricing and Incentives
- Quality of Biofuel
- Institutional Framework
- Research and Development (R&D)
- Human Resource Development, Science and Technology

BIOENERGY POLICY STRATEGY cont'd

BIOMASS WASTE STRATEGIES

- Promotion of Electricity and heat generation from Waste
- Efficient and Low Cost Conversion Technologies
- Effective Sorting, Collection and Management of Waste

BIOENERGY POLICY STRATEGY cont'd

The draft Bioenergy Policy Strategy is being subjected to Strategic and Environmental Assessment by the Environmental Protection Agency prior to submission to Cabinet for approval

CONCLUSION

- The enabling environment has been created for the sustainable development and management of Ghana's Bioenergy sector as a result of introduction of the RE Act and the Bioenergy Strategy.
- The effective implementation of the strategies will result in the Bioenergy sector contributing significantly to Ghana Government's policy target of 10% RE in the national energy mix by the year, 2020.

THANK YOU ALL