

# **National Workshop on Bioenergy in Ghana and Training on the full implementation of the GBEP Sustainability Indicators for Bioenergy**

Overview of the national energy and bioenergy context:  
the National Energy Policies and the contribution of the  
bioenergy sector to achieve Ghana's NDCs and adaptation  
goals

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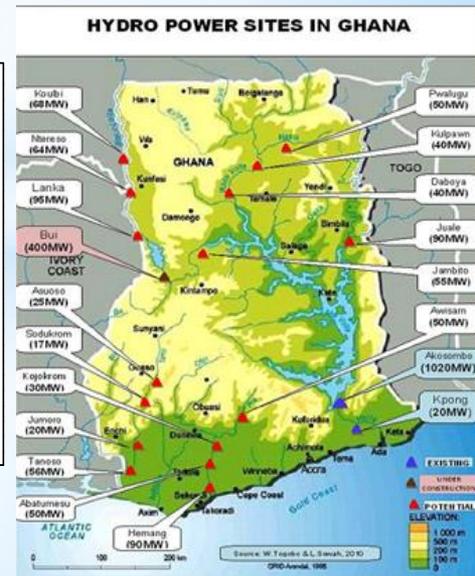
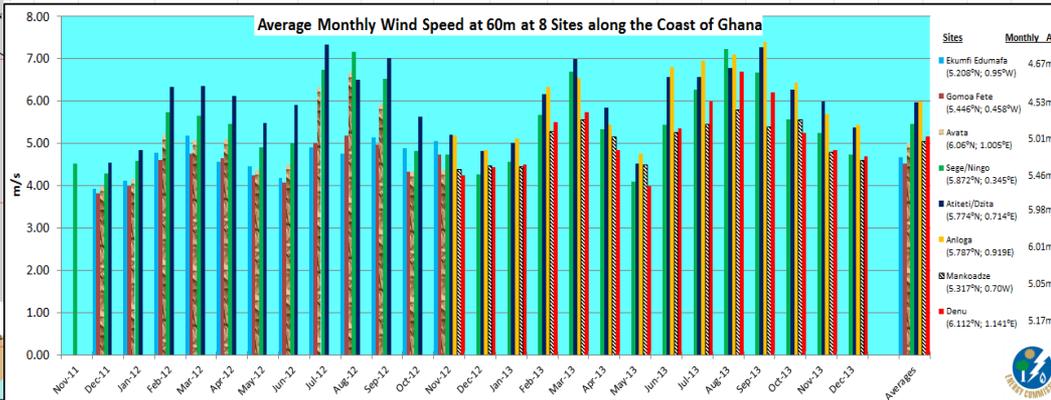
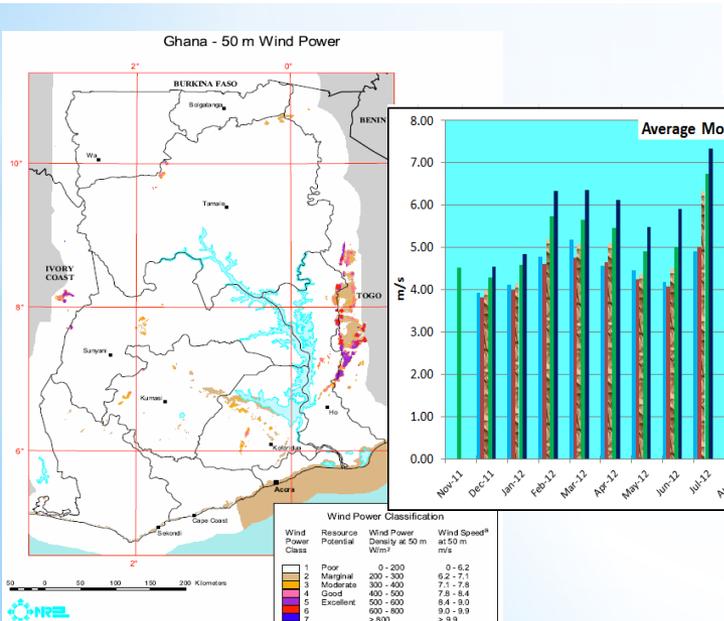
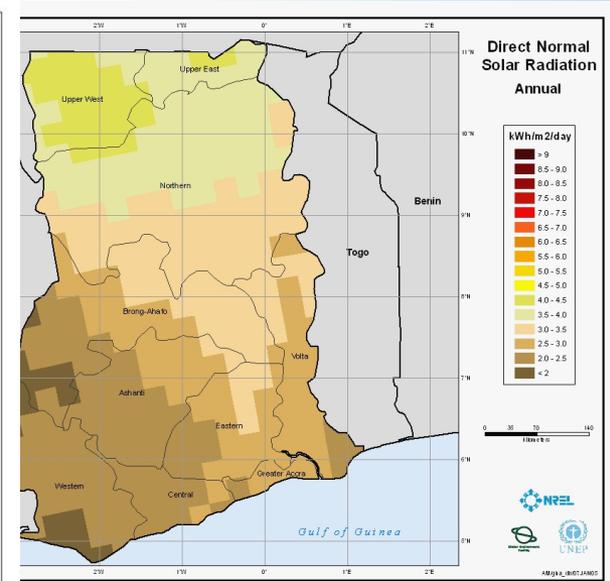
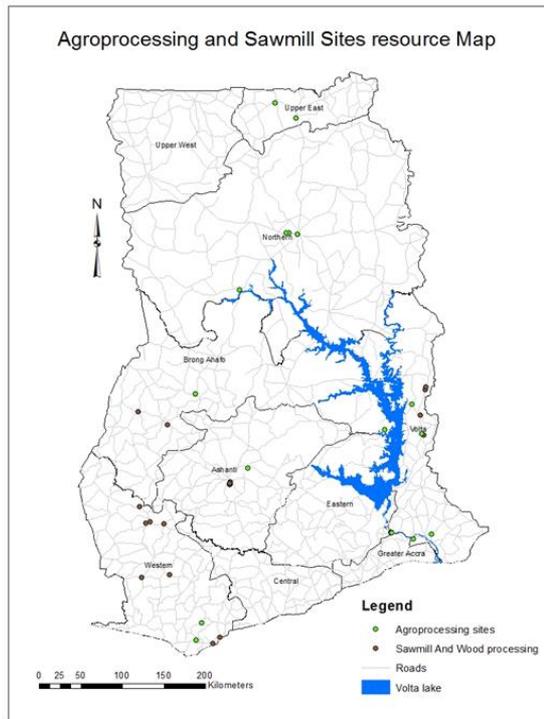
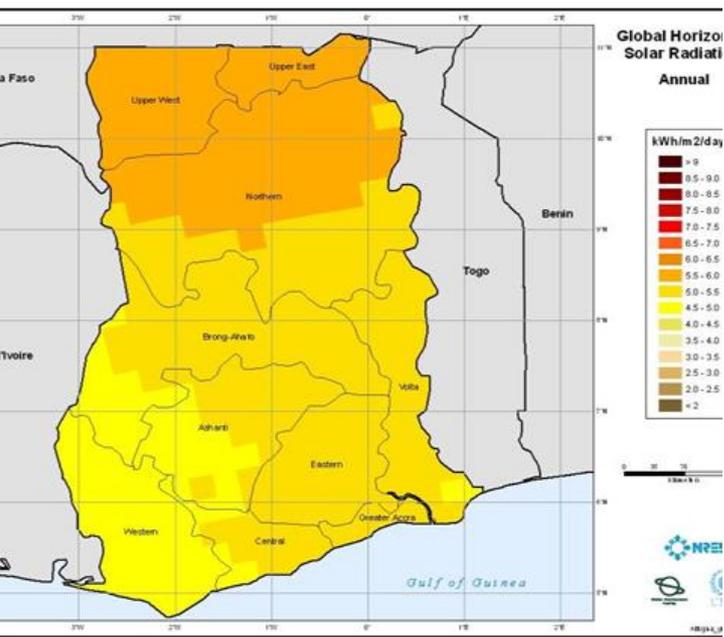
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# ENERGY RESOURCES

Ghana is relatively well endowed with a variety of energy resources:

- \* Biomass,
- \* Wind,
- \* Hydropower,
- \* Solar and
- \* Hydrocarbons.

# Renewable Energy Resources



# Status of Installed Capacity



- Electricity Access (March 2018) is  $\approx$  **84.5%**
- Electricity Installed capacity (2018) **4,443MW**
- Electricity generation (est. 2018) - **16,305 GWh**
- Current Peak Demand (2018) - **2,334MW**
  
- RE in generation mix (incl. large hydro) is **1,647MW ( $\approx$  37.06%)**
- Modern RE in generation mix is  $\approx$  **1.44%**
- mRE Installed capacity (2018)  $\approx$  **63.81 MW**
  - Large scale solar PV plants - 42.5 MW (0.96%)
  - Small-scale solar/wind systems  $\approx$  20.0 MW (0.45%)  
(incl. stand-alone & grid-tied)
  - Biogas (W2E) - 0.01MW (0.00%)
  - Biomass CHP  $\approx$  1.3 MW (0.03%)

# Policy Target



## Renewable Energy Policy Target:

- \* Universal electricity access by 2030; and
- \* 10% renewable energy penetration target by 2030.

# \* Policy & Regulatory Framework



- The Renewable Energy Act, 2011 (Act 832) was enacted in 2011 to provide both policy and regulatory frameworks for the development of RE in Ghana.
  
- The objectives:
  - Establishment of a framework to **support** the RE development & utilization
  - Creation of enabling environment to **attract investment**
  - **Promotion** of the use of RE
  - Building of **indigenous capacity** in RETs
  - Public **education** on RE production & utilization
  - **Regulation** of the RE Industry

# Key Provisions in RE Act (Woodfuel)

- \* Development and sustainable management of the woodfuel supply chain.
- \* Development and implementation of programmes to sustain woodfuel production and consumption.

# CONTROL & MANAGEMENT OF WOODFUEL

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

- \* Establishment of Woodlot Plantations
- \* Promotion of Improved Charcoal Production Kilns
- \* Promotion of Improved Charcoal Stove

# Ghana's Nationally Determined Contribution to the Paris Climate Agreement

- \* Ghana has raised its mitigation ambitions in the nationally determined contributions after its review.
  - \* The revision has translated into a two-tiered emission reduction goal of 17% relative to a business-as-usual (BAU) scenario emission of 73.3 million tonnes by 2030
  - \* Additional 43% is attainable on condition that external support is made available to cover the full cost of implementing the mitigation actions
  - \* The full implementation of the identified mitigation actions is expected to yield a total of 44.2 million tonnes of GHG emission savings
  - \* There are 35 climate programme of actions in Ghana's commitment that cut across 7 priority sectors which will be implemented from 2020 to 2030
  - \* These 35 actions are made up of, 24 mitigation and 11 adaptation measures

# Selected List of Ghana's Nationally Determined Contribution Programme of Action

## \*Energy Sector/Focus Area

- \*Expand the adoption of market based cleaner cooking solutions
  - \*Distributing 2 million improved cookstoves and 134,000 LPG stoves

## \*Forest

- \*Promote sustainable utilization of forest resources using REDD+
  - \*280,000 Ha area reforested, 270,000 Ha avoided deforestation, 140,000Ha assisted regeneration

## \*Waste

- \*Adopt alternative urban solid waste management
  - \*Methane from 2800 tonnes of MSW avoided each day

# NATIONAL ENERGY POLICY - *under review*

## GOAL

To make competitively priced energy, universally accessible and readily available in an environmentally sustainable manner for the local market and for export.

# THEMATIC AREAS OF POLICY

- \* Petroleum Subsector
- \* Electricity Subsector
- \* Energy Efficiency Subsector
- \* Renewable Energy (Bioenergy)
  - \* Woodfuel
  - \* Biofuel
  - \* Biomass Waste to Energy

# Traditional Biomass and their End-use Technologies

## \* Policy Goal

- \* To increase the contribution of renewable energy in the overall national energy supply mix.

## \* Policy Objectives

- \* To establish a sustainable, efficient and affordable woodfuel value chain.
- \* To develop and improve capacity for efficient biomass conversion technologies and end-use devices.

# Policy Direction

- \* Support MMDAs to establish land banks for woodlot.
- \* Collaborate with the MLNR/Forestry commission to make seedlings widely accessible and affordable for woodlot cultivation.
- \* Promote sustainable tree harvesting methods.
- \* Provide efficient means of transportation for woodfuel.
- \* Enact legislation to enforce standards on biomass cook stoves.
- \* Promote innovative financing schemes to support consumer purchase.
- \* Provide incentives for the local manufacture and assembly of advanced biomass cook stoves and fuels.
- \* Provide incentives to the private sector for the development and production of more efficient cook stoves and fuels.
- \* Allocate adequate resources to support the development and use of biomass fuels and end-use devices.
- \* Develop standards and enact regulations for biomass conversion technologies.
- \* Promote agroforestry practices.
- \* Provide incentives to attract private sector investment.

# Strategies

- \* Promote the sustainable cultivation and utilization of woodfuel resources.
- \* Promote sustainable tree harvesting methods.
- \* Provide incentives to attract private sector investment.
- \* Promote the cultivation of fast growing and multipurpose tree species.
- \* Promote the use of agricultural and wood wastes.
- \* Establishing sustainable, cost effective and marketable woodfuel production methods.
- \* Promote the development and use of clean biomass cook stoves.
- \* Promote the development and use of efficient and clean biomass conversion technologies.
- \* Increase public awareness on the benefits of efficient biomass cook stoves and alternative fuels.
- \* Train entrepreneurs in stove design, production and marketing.

# Other Non-Electricity Renewable Energy Systems

## \* Policy Goal

- \* To increase the contribution of renewable energy in the overall national energy supply mix.

## \* Policy Objectives

- \* To promote the use of other modes of renewable energy

## \*Policy Direction

- \*Government shall support the deployment of non-power renewable energy systems to supplement the country's sustainable energy needs.

## \*Strategies

- \*Promote the productive use of renewable energy in agriculture (e.g. irrigation, crop drying and processing).
- \*Promote the use of other renewable energy technologies eg biogas.
- \*Increase awareness of benefits of other renewable energy sources.
- \*Promote further R&D in the development and use of wind pumping systems, solar air-conditioners and other RE technologies.

# CONCLUSION

- \* Ghana is committed to the development of bioenergy.
  - \* The review of the Energy Policy to mainstream bioenergy
  - \* As a means to achieve its NDC's
- \* The woodfuel sector is currently highly informal and efforts are being made to formalise it.
- \* There is therefore the need for renewed efforts to underline the social, economic and ecological importance of bioenergy in order to draw more attention from decision making bodies.

**THANK YOU!!!**