

# Promoting knowledge management and skills development policies on biogas in Ghana: Policies and gaps

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# Outline

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What we have to do

Biogas Technology

Relevant Policies

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# Introduction/Background

## **Industrial Revolution**

- coal, a fossil fuel
- another fossil fuel, crude oil; and
  - natural gas

## **The need for renewable energy**

The increasing world-wide awareness and concern about the environmental impacts of fossil fuels coupled with the oil price shocks of the early 1970s, 1980s, 2007/8, and likely future price hikes, have lent enormous weight to a switch to renewable energy sources

## **Challenges of climate change**

- Arctic is warming twice as fast as the rest of the world- in a polar amplification effect in response to increased dangerous radiations reaching the earth as a result of depleted ozone layer
- melting sea-ice through the decline of global wheat and maize yields, the extinction of some atoll (island) nations to induced desertification of the tropics
- Hunger and malnutrition, fires,

# What we have to do

- Effect of climate change – mitigation and adaptation
- The only time behavior and little acts become stronger than any mobilization to resist the effects of non-compliance.
- It's a collective call and an individual duty as such.
- The need to keep reminding ourselves of this as a people anytime we meet is extremely important.
- Conference of Parties Meetings (COP) meetings from COP1 (1995 – Berlin) and especially from COP21 (2015 - Paris) to COP25 (2019-Madrid)

# Biogas Technology

- Biogas Technology (conversion of organic waste under anaerobic conditions to energy) is still in its infant stages of developments in Ghana and that matter Africa.
- Though it's in its' tertiary stages in the developed world.
- However, the conditions for its process occur naturally in Africa

# Relevant Bodies and Policies

**The Environmental  
Sanitation Policy  
(EHS Dept of  
MLGRD)**

**The Energy  
Commission**

**Strategic National  
Energy Plan (SNEP)**

**Renewable Energy  
Act, 2011 (Act 832)**

# The Environmental Sanitation Policy (EHS Dept of MLGRD)

- The overall goal of this new policy is to develop a clear and nationally accepted vision of environmental sanitation as an essential social service and a major determinant for improving health and quality of life in Ghana.
- The policy is a necessary tool required to help shape all efforts in dealing with the overwhelming challenges of poor sanitation in Ghana.

# The Environmental Sanitation Policy (EHS Dept of MLGRD)

- The principal components of environmental sanitation include:
  - Collection and sanitary disposal of wastes, including solid wastes, **liquid wastes, excreta, industrial wastes, health-care** and other hazardous wastes;
  - Stormwater drainage;
  - Cleansing of thoroughfares, markets and other public spaces;
  - Control of pests and vectors of disease;
  - Food hygiene;
  - **Environmental sanitation education;**
  - Inspection and enforcement of sanitary regulations;
  - Disposal of the dead;
  - Control of rearing and straying of animals;
  - Monitoring the observance of environmental standards

# Ministry of Works and Housing

- National Building Codes
  - Government has made it a requirement to ensure onsite treatment of liquid waste as part of acquisition of building permit.

# Ministry of Agriculture

- A huge potential for biogas technology to be promoted due to the waste generated by livestock.

# Policies by the Energy Commission

Various policy and documents are periodically generated by the energy commission to gauge the extent of advocacy and growth of each energy stream. These include

- Strategic National Energy Plan (SNEP)
- Renewable Energy Act, 2011 (Act 832)
- Feed in tariff for electricity generation - from renewable energy sources are highlighted items in the SNEP. (Energy Commission)
- Ghana Renewable Energy Master Plan
- Bioenergy policy

# Strategic National Energy Plan (SNEP)

- THE ENERGY COMMISSION is required by law to prepare, review and update periodically indicative national plans to ensure that all reasonable demands for energy are met in a sustainable manner.
- The goal of SNEP is to contribute to the development of a sound energy market that would provide sufficient, viable and efficient energy services for Ghana's economic development through the formulation of a comprehensive plan that will identify the optimal path for the development, utilization and efficient management of energy resources available to the country.
- All the energy streams from petroleum, natural gas, renewable energy, wood gas etc are listed and their projection to the energy feed in the country forecasted.

# Renewable Energy Act, 2011 (Act 832)

## Objects

- This Act provides for the development, management, utilization, sustainability and adequate supply of renewable energy for the production of heat and power and for related matters.
- This Act is to also provides the framework to support the development and the utilization renewable energy.
- It provides also the enabling environment to attract investors in this sector.
- Building the indigenous capacity in technology for the sector.
- Public education and regulation etc etc.

# Ministry of Environment Science Technology and Innovation and EPA

- National Environment Policy – Waste management
- National Climate Change and Environment Policy – Climate mitigation and adaptation/resilience
- Green Economy Scoping Report

# Green Economy Scoping Report

- The aim of this *Green Economy Scoping Study* is to identify how Ghana can transition to a green economy.
- The report provides a country profile in terms of the economy, environment, policy landscape and socioeconomic context.
- It investigates initial sectors for greening the economy; discusses policy enabling conditions; and identifies key findings and a roadmap for moving towards a green economy.

# Gaps to be filled in order to enhance biogas uptake

A deliberate campaign and strategy from this same program will increase the uptake of LPG from almost zero to around 10% - 12% uptake in the country

Approval and full implementation of the National Biogas Strategy Document for MESTI. It's still crawling at the committee level of parliament since 2015

The ministry of Agric with all the knowledge, has still no policy on for biogas for the growing livestock farmers like poultry, cattle, pigs, etc.

Yet to be implemented Curriculum and Study materials for our TVET institutions

The Environmental Sanitation Policy (ESP) of MLGRD should be updated to suggest that 'the first station of Sewage treatment plants should be a Biogas Plant

# Challenges of the technology

Biogas is frequently promoted as an alternative source of cooking energy but of equal importance is the enhanced bio-compost. However

- Technical (complicated designs and myths),
  - economic,
  - sociocultural, and
  - institutional barriers have limited its dissemination
- Whereas available quality feedstock is not scarce in Africa, the scarcity of water aggravated by Climate Change hence Global Warming will challenge the upscale of this technology among rural peasant livestock farmers.
  - Although its overall supply potential is rated between modest to medium, households can cover their entire cooking energy needs with it given they have sufficient feedstock (animal/human which is readily available) and access to water which is the new threat among rural farmers

# Challenges of the technology

However, policies are required to tackle the

- Technical and Socio-economic hurdles associated with this fuel. Eg by promoting simple and affordable solutions (designs), use of local materials.
- Countries that have strong institutional support to biogas programmes have registered significant success in promoting the technology eg China etc.
- Even among countries in Africa where renewable energy policies are in place, there is often still a general lack of coherent strategy in place to promote commercial biogas technology.
- Another important problem is the increase in the amount of wastes and the inefficient handling of wastes which are common in most cities. As cities are becoming populous due to urbanization, substrate production increases and the load to the usual inefficient handling grows even bigger for city waste managers. Out of the 44 sewage treatment plants in Ghana, only 7 are operational as managers lack capacity to manage them. The technology of biogas production will become a collective solution to both of the problems cited above.

# Challenges of the technology

- For instance, the population of Nigeria is a technological advantage. However, progress in biogas technology is hampered by the lack of government commitment, inadequate policies to support the sector, lack of adequate processing skills, ineffective waste management, insufficient knowledge of technology and its associated benefits, lack of interest by the public due to their perception, high cost associated with construction, etc. This is in fact true with most African countries.
- Also, Nigeria could produce 88.19 million tons of bio-fertilizers annually which will reduce the use of synthesized fertilizers. This will have a significant impact on agriculture, the level of deforestation and public health, and will improve the country's economy cumulatively in the long-run.

# What's the way forward?

- Promote specific policies that will help the sector.
- Develop standards for the design and construction of biogas plants.
- Establish monitoring systems to ensure that biogas plants are operational and address complaints.
- Research and development will enhance the benefits associated with the design and construction of biogas plants.
- Support policies that are passed into law to ensure the uptake of biogas technology as the main source of waste management

The End

THANK YOU