



GHANA SCIENCE ASSOCIATION



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PREAMBLE: The Ghana Science Association (GSA) is a national multidisciplinary group of Scientists, Technologists, Engineers, Mathematicians, and Industrialists that seeks to contribute to (i) the socio-economic development of Ghana through scientific and technological research and (ii) the formulation and implementation of national policy in science, technology and innovation. During the 19th Biennial Workshop, the GSA deliberated on the theme *“Innovative, Affordable and Sustainable Energy Supply in Ghana for the 4th Industrial Revolution”* and do hereby make the following observations, outcomes, and recommendations:

OBSERVATION

1. Ghana’s energy mix, similar to the global outlook, is primarily driven by fossil fuels which are considered unsustainable for meeting the energy needs of the 4th Industrial Revolution
2. The negative impacts of climate change, driven by heavy reliance on fossil fuels, are being felt across the country.
3. The declining fossil fuel reserves, combined with ongoing political instability in the Middle East, a major supplier of fossil fuel, threaten Ghana’s energy security.
4. The destruction of water bodies also jeopardizes Ghana’s hydroelectric potential
5. Ghana must look beyond the traditional energy supplies (i.e. thermal and hydro) by diversifying her energy sources to guarantee accessibility, affordability, security and sustainability.
6. The transition to a more innovative, affordable, and sustainable energy supply is not optional.
7. While the development of policies such as the Electric Vehicles policy and Energy Transition policy by Government is commendable, the shift into a more diverse and renewable energy should guarantee energy security.
8. Our critical minerals, such as lithium, could be key players in the development of affordable and sustainable energy mix.
9. Ghana is still struggling to curb her energy inefficiency challenges, caused by huge electricity distribution and consumption losses.
10. Energy efficiency is one of the means to meeting electricity supply targets, as it is the ‘new energy stream’ Ghana could utilize to reduce demand and address challenges in the energy supply system.
11. Ghana’s waste-to-energy solutions is feasible and essential in complementing her energy needs.

OUTCOMES

The GSA, through its 19th Biennial Workshop held this year has:

1. Provided a platform for stakeholders, scientists, and policy makers to interact and deliberate on *“Innovative, Affordable and Sustainable Energy Supply in Ghana for the 4th Industrial Revolution”*.
2. Discussed the state of Ghana’s energy transition preparedness, the status of the national policy framework and its implementation.
3. Shared cutting-edge knowledge and showcased successful projects and best practices in energy transitions globally.

4. Created awareness on Ghana’s energy transition preparedness, opportunities and potential threats.

RECOMMENDATIONS

Based on the observations above, the GSA makes the following recommendations:

1. Ghana must foster innovative and affordable approaches to energy transition, as they are essential for ensuring equitable energy supply. Innovation without affordability is ineffective.
2. Ghana needs its own petrochemical industry in order to secure its energy transition to avoid stranded assets.
3. Ghana needs to consider its technological strength in the course of transition to avoid unforeseen challenges.
4. The state should build local capacity by bringing investment, knowledge and expertise in the energy transition space.
5. Synergy between academia and industry in advancing homegrown technologies is crucial for achieving greater partnerships in energy transitions.
6. The private sector should invest in development and commercialization of energy efficient technologies and solutions
7. The Ministry of Energy and Energy Commission should promote and encourage the usage of cost-effective energy appliances.
8. The Government of Ghana must be firm in phasing out overaged (10 years+) and energy inefficient electrical appliances.
9. The state should facilitate the creation of industries for the local manufacturing of clean energy components.
10. There should be a conscious effort to scale-up renewable energy adoption by institutions and organizations across the country.
11. The state should strengthen policy and regulatory framework relating to energy transition, security and affordability.
12. The Government of Ghana should allocate funds for research into clean and affordable energy to support research institutes and universities in this field.
13. Ghana must include energy transition curricula in our schools.
14. Institutions should intensify public education on energy efficiency practices and use energy efficient gadgets, which must also be included in school curricula.

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