ENERGY COMMISSION
securing Ghana's Energy Future Today

THE ENERGY GAZETTE

ISSUE 1, NOVEMBER 2023

IN THIS ISSUE

25TH ANNIVERSARY

25 years of excellence in energy regulation...

A GOODWILL MESSAGE FROM THE MINISTER FOR ENERGY

HON. DR. MATTHEW OPOKU PREMPEH

Congratulations to the Management and Staff of the Energy Commission for this important addition to the collection of periodicals on the energy sector of Ghana.

The voice of a Regulator such as the Energy Commission must be clear, definite and resounding and I believe that is what The Energy Gazette has come to accomplish on matters of regulation in the electricity and natural gas industries and promotional activities in energy efficiency and conservation, and renewable energy.

I wish to congratulate the Executive Secretary and the Editorial Team for their efforts, dedication and skill in piecing together this insightful newsletter. I wish you a growing readership and that your content continues to affect the energy sector positively.

Once again, congratulations!

REMARKS BY THE ENERGY COMMISSION BOARD CHAIR

PROF. EBENEZER ODURO OWUSU

It gives me great pleasure to witness another milestone in my tenure as the Board Chair of the Energy Commission. Our maiden newsletter, The Energy Gazette, was put together with the interest of our stakeholders and clients in mind. Enjoy this maiden edition and do look forward to reading more about the Commission's activities in the subsequent issues.

REMARKS BY THE EXECUTIVE SECRETARY

Ing. Oscar Amonoo-Neizer, Executive Secretary, Energy Commission

The Energy Commission is recognised as the information hub for the energy sector in Ghana. The introduction of this newsletter is to enhance the dissemination of timely and reliable information on the operations and activities of the Commission. It is our hope that it addresses any existing information and communication gap between the Commission and its stakeholders.

We invite you to visit our E-Library and Ghana Energy Database to browse the resources we have put together for our stakeholders, especially persons in research and academia.

We encourage you to circulate the electronic copies widely among your contacts across the various platforms.

EDITORIAL

Paula Edze,
Manager, Renewable Energy Regulations,
Energy Commission

Welcome to the Energy Commission's maiden newsletter, The Energy Gazette. This issue highlights some of the key activities carried out by the Commission in its mandate areas of promotion, regulation, and policy planning and advisory support, stakeholders' capacity building and training programmes organised by the Commission, and participation in an international conference. A key feature in this issue is an exposition of some transformational initiatives introduced by the current Executive Secretary, Ing. Oscar Amonoo-Neizer, to improve the operational efficiency of the Commission and to enhance its visibility to the general populace. We look forward to celebrating key personalities in our energy sector in the column "Personality Focus."

In the Personality Focus section, we celebrate our Executive Secretary, Ing. Oscar Amonoo- Neizer and his achievements at the Commission and the energy sector. We hope you find this newsletter very informative and worthwhile. Your comments and suggestions on how to enhance the content to meet your expectations are welcome. You can reach us via email:
theenergygazette@energycom.gov.gh

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REGULATION

GUIDELINES FOR THE DEVELOPMENT OF PRIVATE ELECTRICITY DISTRIBUTION NETWORKS FOR ELECTRICITY RETAIL SERVICES

The Government of Ghana envisaged that industrialisation will lead to the transformation of the economy and pave the way for citizens to enjoy the benefits of an industrial economy with good jobs and high incomes. The development of industrial parks and residential communities was pivotal to this transformational agenda to improve access to utility services, easing the setting up of factories within the country.

The Commission developed guidelines that provide the general principles and scenarios for the development and regulation of private electricity distribution networks for industrial parks and residential communities within licensed distribution concessions in the country.

Further, the guidelines for private electricity distribution networks were developed to guide private developers.

REGIONAL AWARENESS CREATION EVENTS ON THE NEW STANDARDS AND LABELLING SCHEME FOR IMPORVED BIOMASS COOKSTOVES

Awareness Creation at Upper West Region

In line with section 50 (e) of the Renewable Energy Act, 2011 (Act 832), a standards and labelling (S&L) scheme for improved biomass cookstoves has been developed for Ghana. The legislative instrument that governs the implementation of the scheme is L.I. 2454 Renewable Energy (Standards and Labelling) (Improved Biomass Cookstoves) Regulations, 2022. It was entered into law on November 2, 2022. Enforcement of the new S&L scheme is expected to commence in November 2024, allowing ample time for the target stakeholders to comply with the new Regulations.

Accordingly, the Commission is embarking on nationwide awareness creation events for key actors in the bioenergy sector. As at May 2023, a total of 258 persons were sensitised on the new S&L scheme across the Greater Accra, Ahafo, Northern, Upper West, Oti and Volta Regions. Generally, the participants seem to have embraced the idea of the S&L scheme. The main concerns raised included the following:

- Limited capacity of the welders/artisans and fear of not producing cookstoves that will meet the minimum performance standards that has been set in the new regulations;
- Location of the Commission and cookstove testing centers;

- Potential stress involved in the steps leading to the labelling;
- Availability of fuel for the cookstoves being produced in relation to the degradation of the forest cover;
- Overpricing of the cookstoves, if they are labelled and
- Availability of advanced machinery to aid in smooth and precise measurements of parts.

The assemblies were encouraged to disseminate information on the new S&L at town hall meetings and other community gatherings. They were also assured that the Commission is ready and willing to collaborate with them to organise similar awareness creation events at the district level or make presentations to community members when invited. The events were organised in collaboration with the Regional Coordinating Council of the various regions.

Five educational materials, consisting of three flyers and two brochures, have been developed to educate biomass cookstove producers, distributors, retailers and consumers on the new S&L scheme. 600 copies each of the five educational materials have been disseminated in the six regions where the awareness creation was done.

The new Regulations for Improved biomass cookstoves is available on the Commission's website via this link:
https://www.energycom.gov.gh/newsite/index.php/regulation/renewable-energy-if

AWARENESS TRAINING WORKSHOP FOR ENFORCEMENT AUTHORITIES ON THE NEW ENERGY EFFICIENCY STANDARDS AND LABELLING SCHEME FOR ELECTRICAL APPLIANCES

Training Tema Customs Officials on the New Energy Efficiency Regulation

The Commission, in line with its function to prescribing and enforcing standards of performance for electricity appliances and renewable energy products, worked with Parliament to pass into law, 19 new Regulations for the Ghanaian energy appliance market. The overall purpose of the Regulations are to:

- prevent Ghana from becoming a desirable destination for substandard new appliances and used ones;
- save the economy by reducing electricity demand which necessitates additional generation capacity with its associated cost;
- protect the environment and safeguard the health of

citizens from air pollution caused by increased power generation; and
- protect the consumer from purchasing inefficient appliances and its attendant high energy consumption cost.

Currently, Ghana is operating a mandatory appliance standards and labelling (S&L) regime under which importers and retailers of room air conditioners, refrigerators and compact fluorescent lamps (CFLs) are required to import and sell ONLY products that meet the national minimum efficiency and performance standards approved by the Ghana Standards Authority (GSA).

The scope of regulated appliances has been increased to include clothes washing machines, industrial fans, ventilating fans, comfort fans, rice cookers, computers, set-top boxes, microwave ovens, water heaters, public lighting, television sets, electric motors, electric kettles, distribution transformers, inverters, solar panels, renewable energy batteries, and improved biomass cookstoves.

Revisions were made to the previous Regulations for air conditioners to include new and emerging technologies while a standalone Regulation was passed into law to prohibit the manufacture, importation and sale of incandescent filament lamps. The new regulations are expected to come into force by November 2023.

The Regulations are available to read or download from the Commission's website. The links to the Regulations for electrical appliances, and renewable energy products are below:

www.energycom.gov.gh/newsite/index.php/regulation/energy-efficiency-ie

https://www.energycom.gov.gh/newsite/index.php/regulation/renewable-energy-if

Enforcement of the Regulations is a joint exercise between the Commission and other public institutions, namely, GSA, Customs Division of the Ghana Revenue Authority, Ghana Police Service and any other person designated by the aforementioned institutions.

The Commission is organising a nationwide awareness training events for its co-enforcement agencies on the new Regulations. Customs and GSA officers in the ranks of PRO, SRO, RO, ARO, RA I, RA II, RA III, JRA II and JRA III at the Golden Jubilee Terminal, Tema, and Meridian Port Services Terminals, Sakumono, were engaged in May, 2023. The training was conducted by Hubert Nsoh Zan and Richard Donkor, Assistant Managers of Energy Efficiency Regulations at the Energy Commission.

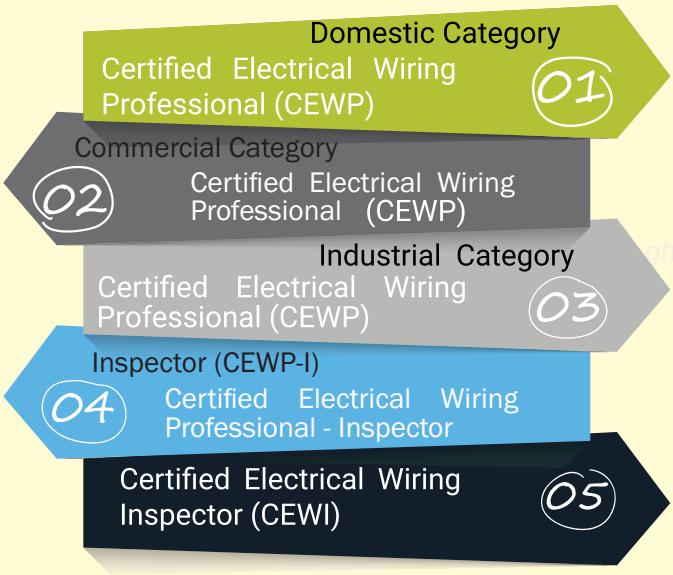
IMPLEMENTATION OF THE ELECTRICAL WIRING REGULATIONS, 2011 (L.I. 2008)

The Electrical Wiring Regulations, 2011 (L.I. 2008), developed by the Commission, was passed into law by Parliament in 2011 and came into force on 24 February, 2012. The purpose of the Regulations is, among others, to ensure safety of life and property that could be at risk as a result of poor electrical wiring, use of sub-standard and inappropriate wiring materials and wiring by untrained and unprofessional persons. The Regulations require a person to be certified to undertake electrical wiring in residential, commercial or industrial facilities by the Commission.

Since the commencement of implementation of the Regulations in 2013, over: 13,987 persons have been trained by the Commission to undertake electrical wiring in Ghana. A register of all certified electricians can be found on the Energy Commissions website at ***www.energycom.gov.gh.*** A smartphone Application "Certified Electricians GH" has also been developed and deployed to assist the public to identify and contact qualified persons within their localities to wire their facilities.

The APP also enables members of the public to report wrongful behaviour of practitioners to the

Commission. Five (5) categories of certified practitioners are available as follows:



All CEWPs are identified by unique identification numbers and have been supplied with stamps that are used to emboss all Installation Completion Certificates which accompany all applications for electrical connection to the power distribution utilities. Whenever a person requires electrical wiring of a facility, CEWPs must be engaged to conduct the electrical wiring installation. The CEWP upon completion of a wiring installation is expected to invite a certified inspector to inspect, test and endorse the installation. Agreed fees are paid by the CEWP to the Inspectors for the services rendered.

The Regulations also stipulate that an "electricity distribution utility shall not supply electricity to premises unless the requirements of these Regulations have been complied with and the electrical wiring or installation has been undertaken by a certified electrician." The Regulations further states that an "electricity distribution utility shall disconnect electricity supply to premises where these Regulations have not been complied with."

The Commission is decentralising its operations to increase its visibility across the country and make itself more accessible and available to its stakeholders. It currently has offices in Kumasi, Takoradi and Tamale, aside the head office in Accra, to serve specific zones and regions.

CATEGORY	NUMBER
Domestic	8,784
Commercial	4,349
Industrial	594
Inspectors	260
Total Personnel	13,987

Registration of Electrical Contractors: The Regulation prescribes that electrical contractors be registered. Hence, the Commission has established a register for electrical contractors.

Mandatory Periodic Inspection and Testing of Electrical Wiring: In order to ensure and maintain the integrity of the electrical wiring of an installation, Regulation 11 Subsection 3(a) stipulates that "Periodic Inspection and Testing shall be carried out ten (10) years after the initial installation and use of an electrical wiring installation." In line with the above Regulation, all public and commercial facility owners are required to engage Certified Electrical Wiring Inspector (CEWI) to inspect and test the electrical wiring of facilities that are ten (10) years and above (i.e. facilities wired in the year 2013 or earlier). They are also expected to engage the services of CEWPs to carry out all recommendations of the CEWI required to ensure their facilities are safe. Public or commercial facilities in this context are buildings that are open to the general public and/or are used for commercial activities such as filling stations, banks, hotels, churches, office buildings, shopping malls, markets, schools, restaurants, sports facilities, stores, hospitals, etc.

Practical Examination at Accra Technical Training Centre

2023 Activities: A number of activities have been implemented this year in furtherance of the implementation of the Regulations. This includes

- Organisation of Award Ceremonies for successful candidates of the Nov/Dec 2022 and May/June 2023 electrical wiring certification examination held in Accra, Kumasi, Tamale and Takoradi
- Conduct of May/June 2023 electrical wiring certification examination
- Monitoring of the activities of Certified Practitioners and Distribution Utilities to ascertain their level of compliance with L.I. 2008. A total of 29 operational districts of the Distribution Utilities were covered as at July 2023
- Revision of the Ghana Electrical Wiring Standards

Cutting of Cake during the 10th Anniversary of the Electrical Wiring Programme with Prof. Ebenezer Oduro Owusu, Board Chairman, Energy Commission (Left), Hon. Herbert Krapa, Deputy Minister, Ministry of Energy (Middle) & Ing. Oscar Amonoo-Neizer, Executive Secretary, Energy Commission (Right).

On 12 April 2023, the Commission launched the tenth anniversary of the implementation of the Electrical Wiring Regulations at the Holiday Inn Hotel, Accra. Key milestones chalked under this Regulations include:

- 14,000 Certified Practitioners
- Revised Ghana Electrical Wiring Guidelines
- Revised Certification Examination Syllabus
- Certified Electrician Mobile App
- Establishment of a database of all registered electricians and contractors

LEGISLATIVE INSTRUMENT ON THE IMPORTATION, ASSEMBLY, MANUFACTURE, SALE, INSTALLATION, OPERATION AND MAINTENANCE OF METERS.

A draft Legislative Instrument (L.I.) has been developed to provide for the importation, assembly, manufacture, sale, installation, operation and maintenance of meters for the wholesale supply, transmission, distribution or sale of electricity. This has become necessary due to the influx of unauthorized meters from neighboring countries that are connected to the distribution network in the country.

The draft Regulations has gone through stakeholder consultation and review by the Board of the Energy Commission.

Smuggled Electricity Meters intercepted at Kumasi (Credit - Myjoyonline.com)

REVIEW OF THE NATIONAL ELECTRICITY GRID CODE

In accordance with Regulation 3 of the Electricity Regulations, 2008. L.I. 1937, the Commission developed the National Electricity Grid Code to guide the operations of the National Interconnected Transmission System (NITS). The Code was published in 2009 and it establishes the requirements, procedures, practices, and standards that govern the development, operation, maintenance, and use of the NITS.

Stakeholder Workshop to Review the National Electricity Grid Code at Fiesta Royale Hotel

In 2021, the Commission commenced the review of the Code with the Ghana Grid Company (GRIDCo) to include sub-codes for electricity from renewable sources and current trends and reforms in the electricity supply industry. The revisions were subjected to stakeholder consultation and review by the Electricity and Natural Gas Technical Committee of the Commission. The target is to have it finalised by the end of this year, 2023.

Kindly visit our website to read or download all the technical Codes and Guidelines we have.

ELECTRICITY INSPECTION AND ENFORCEMENT UNIT

Section 28 of the Energy Commission Act 541, mandates the Commission to prescribe technical and operational rules of practice for electricity public utilities licensed under the Act and to enforce the provisions uniformly throughout the country. The Electricity Inspection and Enforcement Unit of the Energy Commission is responsible for carrying out inspection and enforcement activities of utilities for generation, transmission and distribution of

electricity in Ghana. The main objective of the inspection and technical audit exercise carried out by the Commission is to establish compliance with the relevant Rules and Regulations, the Grid Code, the license conditions and make recommendations for improvement.

The inspections are also expected to provide support for operational and maintenance planning in relation to the electricity generation, transmission and distribution infrastructure by:

- assessing the level of compliance through site visits and data review;
- assessing the performance of the utilities through maintenance and operations reports;
- advising operators of the utilities on actions to be taken to improve compliance;
- monitoring progress in improving compliance through follow up visits; and
- applying sanctions in case of repeated non-compliance

Details of activities undertaken in the areas of electricity distribution, transmission and wholesale supply are given below.

Transformer Load Monitoring in Navrongo

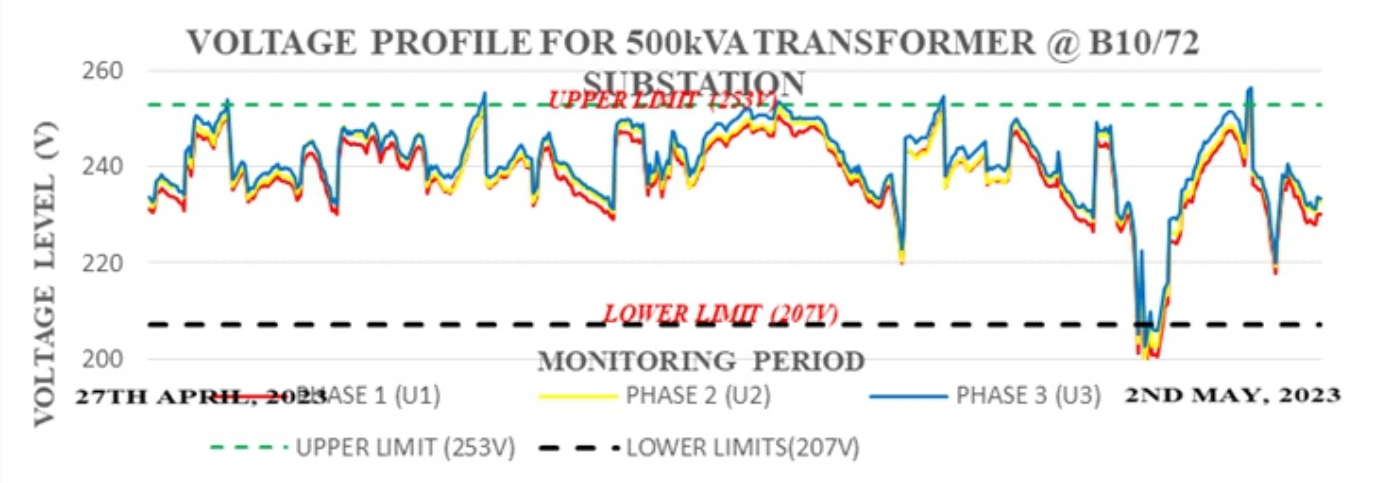
ELECTRICITY DISTRIBUTION

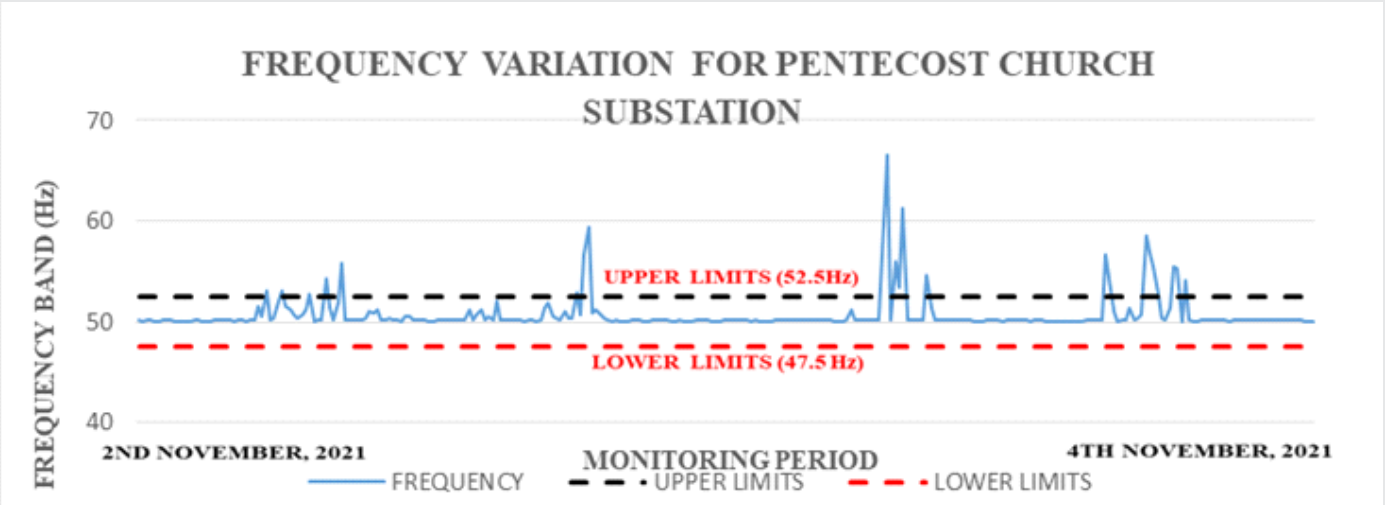
Details of activities undertaken in the areas of electricity distribution, transmission and wholesale supply are given below.

- Audit the quality/continuity of electricity supply to identify the worst and the best performing operational district.
- Distribution transformer load monitoring to identify transformer overloads.
- Inspection of primary substations, secondary substations, medium/low voltage feeders and associated switchgears
- Right of Way Inspection for medium and low voltage lines
- Quarterly technical report verification and operational performance statistics [L.I 1935, 7(1)]
- Expansion activities inspections and data collection on planned construction works within the network
- Electricity outage and safety reports inspections
- Audit data by comparing with the fault loggers and independent collection of real time data on the distribution network using power analyzers.
- Inspection of operational/maintenance programs for distribution equipment.

Displayed are graphics of a couple of voltage and frequency variation profiles generated from data gathered as part of our activities by the Electricity Inspection and Enforcement Team at the Commission led by Ing. Ampadu Acheampong, Senior Manager, Electricity Inspection and Enforcement Unit.

Inspection of Load Readings at Bolgatanga BSP.





ELECTRICITY TRANSMISSION

- Monitor the daily performance of the National Interconnected Transmission System.
- Conduct audit of the Electricity Transmission Utility (ETU) level of compliance with Regulations, guidelines and rules of practice [ETL, clause 32.1]

Inspection of DC Batteries at Volta Substation

Inspection of Smelter II Capacitor Banks

WHOLESALE ELECTRICITY SUPPLY INDUSTRY (THERMAL ELECTRICITY GENERATION)

- Audit technical and operational performance to demonstrate compliance with licensing conditions and the Grid Code, namely
  - Voltage magnitude within limits specified in TS-E
  - Frequency limits as specified in TS-F
  - Power factor and reactive power limits within TS-G
  - Performance statistics as specified in the fourth schedule
- Check Safety and Technical Management Plan
- Check Operations and Maintenance Plan
- Check modification to plant

Plant Manager explaining to EC Inspection Team the various Components of the Watsila Engine, Karpowership, Sekondi Naval Base

THE BOARD'S VISIT TO THE BUI GENERATING STATION

The Board of the Energy Commission in the performance of its mandate, paid a three-day working visit to the Bui Generating Station, located between the boundaries of the Savannah and Bono regions from the 17th April 2023 to 21st April 2023. Similar to other visits, the Board deemed it appropriate as regulators to periodically meet with the public utilities the Commission regulates to acquaint itself with their operations and discuss pertinent issues impugning on their operations.

The Bui Generating System (BGS) is a peaking plant with a capacity to generate 404MW of hydro-generated power, which is evacuated from its 161kV Switchyard. The Plant has a unique feature of operating in synchronous condenser mode to supply reactive power for system voltage stabilization.

A presentation was made to the Board on the operations of the generating station, highlighting on its successes, including the fact that the plant was managed by a wholly Ghanaian team. In April 2021, the Bui Power Authority (BPA) commissioned the first 50MWp Solar Farm which is connected to the national grid for commercial operations. The Board delegation was also briefed on the ongoing 5MW floating solar PV facility which was under installation.

A Section of the Commission Team at the Generation Floor

The Board of the Energy Commission's visit to Bui Power Plant

After a brief safety orientation, the team geared up in Personal Protective Equipment (PPEs) and was taken around the plant. The plant tour commenced at the control room, generator floor and switch yard. The team inspected the various systems and installations that come together to generate electricity. Members were later taken on a tour of the floating solar facility.

Other study visits paid by the Board include visits to the Takoradi Thermal Power Station (TTPS) in Aboadze, and the Northern Electricity Distribution Company (NEDCo) in Tamale.

5MWp Floating Solar at Bui

50MWp Solar PV Plant at Bui

POLICY AND PLANNING

GHANA ENERGY DATABASE

The Commission has successfully developed an interactive and user-friendly national energy database system, known as the Ghana Energy Database (GhED). This is in fulfilment of its mandate "To secure a comprehensive energy database for national decision making to the extent of development and utilisation of energy resources available to the nation", stipulated in the Energy Commission Act, 1997 (Act 541), section (2), subsection (2d).The platform caters to the needs of individuals, organisations, researchers, and policy-makers, serving as a vital input for developing national energy plans and strategies for sustainable energy utilisation, conducting research as well as undertaking rigorous policy analysis.

Website view of the Ghana Energy Database

The database, which includes an energy resource mapping portal, does not only provide a wealth of information on energy resources available in the country, but also provides information on the flow of energy in the country from production through to transformation to final use.

The database features several interactive web-accessible energy maps, categorised under the district energy profile. These maps include: Energy Resources (solar, wind, hydro), Residential Energy Demand (electricity, LPG, charcoal, firewood) at the district level, location of energy infrastructure and service outlets among others. The reporting system provides an interactive platform with numerous energy topics and associated indicators. The data menu offers a wide range of datasets and indicators, including energy supply, import/export, energy consumption, prices, sustainable development goals, oil, and natural gas.

The front-end web application serves as the gateway to the entire system, offering interactive features, charting tools, and user-friendly functionalities. The platform has been optimised and simplified for easy navigation. The main menu options include the home page, data and analysis, policies, and login.

To increase accessibility, a mobile application has been developed and is available for download and use for Andriod and Apple IOS devices on Google Play Store and App Store, respectively. The platform can be accessed on the Energy Commission's website at *http://gheatoolkit.energycom.gov.gh/*

INTEGRATED POWER SECTOR MASTER PLAN (IPSMP) FOR GHANA

The vision of the energy sector is to be self-sufficient in the provision of sustainable energy for local consumption and for export. One of the functions of the Commission is to prepare, review and update periodically national energy plans to ensure that energy demands for the country are met in a sustainable manner. Accordingly, the Commission has been preparing national energy plans to guide investments into the sector. In 2018, with technical assistance from the World Bank, the Commission developed the first Integrated Power Sector Master Plan (IPSMP). The plan was subsequeltly updated in 2019 and 2023.

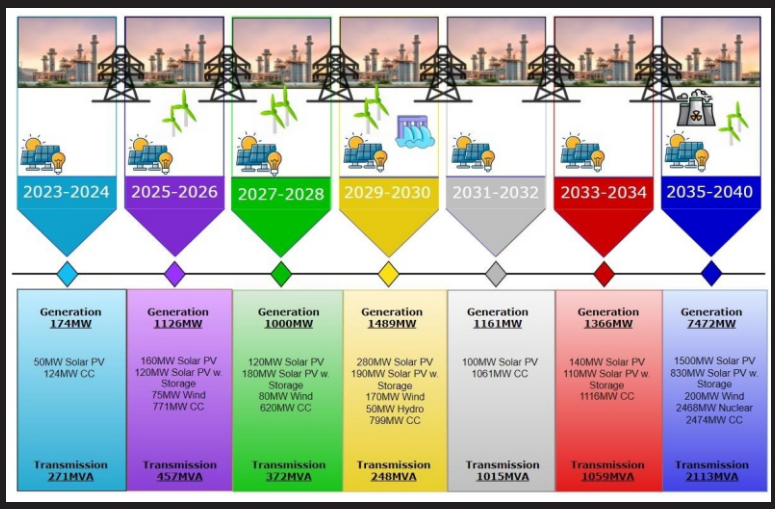
The IPSMP is a strategic blueprint that charts the future development of power generation and transmission facilities in the country. It gives projections for peak electricity demand, and fuel supply based on historical data; and financial assumptions for the construction of new transmission and distribution infrastructure and the limitations associated with that. The plan emphasises the enhancement and modernisation of the national transmission and distribution infrastructure to increase the resilience of the power system.

The IPSMP employs an Integrated Planning Model (IPM), which is a dynamic, linear programming model that relies on sectoral and zonal data to simulate the operations of a given power system. Five distinct strategies have been crafted, so far. The scenarios employed for these strategies include Unconstrained, Diversify with Nuclear, Diversify Geographically, Renewable Energy Master Plan, and enhanced Ghana Nationally Determined Contributions (Gh-NDCs). Eleven sensitivities were applied to the above mentioned scenarios, such as high and low demand growth, high and low fuel prices, higher and lower capital costs for renewable energy sensitivities. The Least-Regret Strategy is the strategy that performs best under the sensitivities modelling.

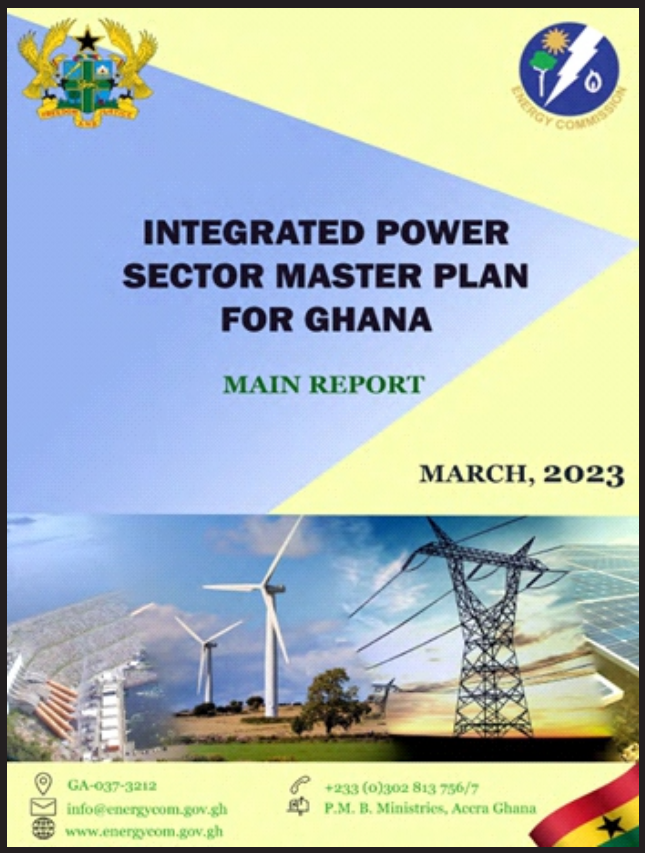
The generation and transmission resource "builds" that are derived from the Least-Regrets Strategy are collectively called the least-regrets Portfolio.

The IPSMP identified key issues that need to be addressed to ensure the development of a resilient, reliable, and sustainable power sector that supports the socioeconomic development of the country. The reports are available on the Commission's website at

https://www.energycom.gov.gh/newsite/index.php/planning/ipsmp-data



Least Regrets Build Plan under High Demand



PROMOTION

THE DRIVE ELECTRIC INITIATIVE (DEI)

As part of the Commission's mandate to recommend national policies for the development and utilisation of indigenous energy resources, the Commission in collaboration with the Ministry of Energy started promoting the use of electric vehicles to create demand and drive the productive utilisation of the country's excess electricity. The initiative was launched by the Senior Minister, Hon. Yaw Osafo- Marfo at the 5th Renewable Energy Fair in October 2019.

The "Drive Electric Initiative" (DEI), is an innovation by the Commission to achieve the following:

- Increase electricity demand sustainably to match supply as a way of partially addressing the country's electricity generation over-capacity issue;
- To prevent Ghana from becoming a dumping ground for internal combustion engine (ICE) vehicles which are gradually being phased-out by developed countries as a climate intervention.

Sword Cutting by Hon. Yaw Osafo-Marfo & Hon. William Owuraku Aidoo with Doris Agbevivi

Vision

To sustainably reduce the greenhouse gas (GHG) emissions and promote green and sustainable transport and other environmentally friendly benefits while driving increased penetration of renewables in the long term.

Mission

To increase the use of electricity by promoting productive use of electricity in powering vehicles. This initiative will also support the social and economic development of the country, while initiating green alternatives which will lead to reduction in harmful emissions and negative environmental impacts associated with transport systems.

The Commission's priority areas under the DEI are:

- Awareness creation to ensure the penetration of the vehicles in the country.
- Charging infrastructure standards, regulation, monitoring and enforcement
- Encourage business and collaborations in establishing charging stations in the country

Achievements

A few commendable firsts of EV events have been organised by the Commission, namely, Ghana's First E-mobility Conference and Exhibition, and Ghana's First Public Charging Forum. The E-mobility conference and exhibition which was held in September 2021 brought together thousands of stakeholders in-person and virtually to discuss policy and market issues surrounding the use of EVs in Ghana. Participants at the conference had the opportunity to explore and test drive EVs displayed by some automobile companies. The Public Charging Forum was organised in March 2022. The forum discussed best practices around the world on EV charging stations, the business potential of charging station operation and the crucial role of energy in e-mobility. It also fostered collaborations between current and potential charging station operators in Ghana.

This year, the Commission published a baseline survey report on EVs in Ghana.

To read more about the DEI, visit *https://www.energycom.gov.gh/newsite/index.php/initiatives/drive-electric-initiative-main.*

UNDP PARTNERS ENERGY COMMISSION AND ENVIRONMENTAL PROTECTION AGENCY TO PROMOTE ENERGY AND RESOURCE EFFICIENCY IN MMDAs AND MSMEs INCLUDING HOTELS

Energy Managers Training at Volta Serene Hotel, Ho

The United Nations Development Programme (UNDP), the Energy Commission (EC), and the Environmental Protection Agency (EPA) launched a series of activities to promote energy and resource efficiency in micro, small, and medium-sized enterprises (MSMEs) and selected metropolitan, municipal, and district assemblies (MMDAs) in six (6) regions in Ghana. These activities included the hiring of a consultant to conduct energy and resource audits in the selected MSMEs, and the organisation of a training workshop on energy and resource management.

Accordingly, BS Solutions, a consulting firm, conducted a walk-through energy and resource audits in 10 hotels and 5 manufacturing companies in Kumasi, Sefwi Wiawso, Sagnerigu, Kasena Nankana West, Ketu South, and Jomoro. The audit established an energy and resource use baseline for the beneficiaries, identified inefficiencies, and recommended actions to address issues identified. It was estimated that up to 30% savings could be made, if recommendations are implemented.

The team trained a total of 500 personnel from selected MSMEs and MMDAs from the Western, Volta, Ashanti, Western North, Northern, and Upper East regions on energy and resource management. The training covered the fundamentals of energy, energy and resource management, regulated appliance standards and labelling, energy conservation, energy and resource efficiency in the workplace, the use of intelligent tools to make energy and resource use decisions and the implementation of an effective waste management system to eliminate operational inefficiencies. Findings from the audit was shared by BS Solutions to demonstrate to participants the benefits of conducting an audit. The Commission seized the opportunity to disseminate its energy efficiency and conservation guide and flyers on wise use of electricity.

Speaking at the kick-off training workshop in Takoradi, Mr. Stephen Kansuk, Head of Environment and Climate Cluster at the UNDP, affirmed that the energy and resource efficiency programme is part of UNDP's inclusive integrated MSMEs support programme for six districts, which supports the Ghanaian government's COVID-19 recovery efforts. He highlighted that the programme builds on previous interventions for MSMEs which include business development services. This is to unleash the potential of women and youth-led MSMEs to drive a sustained, greener, and more inclusive economic recovery.

The Executive Secretary of the Energy Commission, Ing. Oscar Amonoo-Neizer, urged participants to take advantage of the training to adopt best practices on energy and resource use and conduct energy and resource audits regularly to reduce costs, increase revenue generation, and build capacity to withstand future challenges. He advocated for MSMEs such as hotels, whose energy and resources expenditure constitute about 60% - 70% of their operating costs, to be supported to implement cost saving measures.

The programme beneficiaries expressed their gratitude to the UNDP, EC and EPA for the knowledge impacted and advocated for the programme to be extended to cover other economic sectors.

ENERGY COMMISSION SENIOR HIGH SCHOOLS RENEWABLE ENERGY CHALLENGE

Picture of the Six (6) Finalist Schools with Key Dignitaries

The Energy Commission of Ghana collaborated with the Ghana Education Service (GES) to initiate the Energy Commission Senior High Schools Renewable Energy Challenge (Schools Challenge) in 2019. This initiative aims to foster an interest in renewable energy and energy efficiency among students in second cycle institutions. The Schools Challenge encourages creative thinking, offers mentorship opportunities, and aims to inspire and guide students in exploring renewable energy technologies. It also provides a platform for High School students to showcase their innovative renewable energy projects that are developed using materials that are locally available in their environment.

Since its inception in 2019, the Schools Challenge has grown from a pilot programme involving 29 schools in the Greater Accra region to a national initiative that attracts educational institutions from all regions of Ghana. The significant growth and participation in the previous year's Challenge, with 119 schools from all 16 regions, demonstrate the programme's success and potential. The Schools Challenge has the opportunity to continue making a positive impact on students, schools, and the education sector by shaping the future of Ghana's youth.

To ensure the long-term sustainability of the Schools Challenge, the Energy Commission has partnered with the Council for Scientific & Industrial Research (CSIR) Institute of Industrial Research (IIR) through a Memorandum of Understanding (MoU). Under the partnership, the Commission and CSIR-IIR will support the development and commercialisation of winning projects. Accordingly, last year's winning project, a solar dehydrator developed by Kpedze Senior High School, was refined by CSIR-IIR for commercialisation. The final product was showcased at the finals of this year's Schools Challenge held on 17 October, 2023, at the Accra International Conference Centre (AICC). The participating schools were Yaa Asantewaa Girls' Senior High School (SHS), Sogakofe SHS, Mfantsiman Girls' SHS, Serwaa Kesse Girls' SHS, Kwabre SHS and Dormaa SHS. The winning project was a Five-in-One-Agricultural Machine, named "The Farmers Friend", developed by students from Sogakofe SHS. 'The Farmers Friend' received the "Innovative Project of the Year," award whilst Kwabre SHS was recognised as the "Best Team."

Sogakope SHS received a monetary reward of GH¢10,000, a 5kW solar PV system, 30 solar lamps, 25 copies of GAST Integrated Science books, 25 LED streetlights, and a commemorative plaque. Additionally, each member of the team that represented Sogakope SHS received prize money GH¢3,000, a laptop, 3 solar lamps, and a solar fan.

The Energy Commission intends to expand the Schools Challenge beyond Ghana. Broadening the reach of the programme would increase competition among participating schools, encourage student exchanges and investor support for projects showcased.

Presentation by Sogakofe Senior High School

SUNREF GHANA PROGRAMME

In an effort to reduce greenhouse gases to fight climate change, CalBank PLC, Agence Française de Développement (AFD), the European Union (EU) and the Energy Commission are supporting energy efficient electric motorcycles assembled by Solar Taxi under the Sustainable Use of Natural Resources and Energy Finance (SUNREF) programme. Solar Taxi Limited will assemble 1200 energy efficient electric motorcycles for use in Ghana under the SUNREF financing programme with an additional grant of up to 10% upon completion of the project.

CalBank was the first financial institution to be enrolled under the SUNREF Ghana Programme, followed by GCB Bank, to provide affordable funding for individuals and organisations seeking to undertake renewable and energy efficient projects. The objective is to deliver cost savings to individuals and organisations whilst reducing carbon emissions.

With 1,200 electric motorcycles, the Solar Taxi Limited is set to revolutionise traditional means of delivering goods across the country. The SUNREF intervention will help individuals and communities make the conscious decision to switch to electric motorcycles, thereby making a smart choice for now and the future. The project is expected to deliver an annual greenhouse gas emissions reductions of 129 tonnes of CO_2/year and fuel savings equivalent to 748,800 litres of gasoline.

Programme Coordinator for SUNREF with Electric Motorcycle Assembled by Solar Taxi

CAPACITY BUILDING & TRAININGS

GHANA POISED TO REAP THE BENEFITS OF SUSTAINABLE OR GREEN PUBLIC PROCUREMENT (S/GPP) OF EFFICIENT AND CLIMATE-FRIENDLY COOLING APPLIANCES

Government agencies in Ghana are poised to switch to efficient and climate-friendly cooling appliances thanks to a new sustainable or green public procurement (S/GPP) protocols introduced by the Energy Commission. As of July 2023, over 714 officials connected with the procurement processes from Volta River Authority, Ghana Health Service, Ministry of Health, Ghana's Teaching Hospitals, and 30 Public Health Facilities in seven regions across the country have been trained in green procurement. S/GPP can be used as a management tool that could help reduce electricity consumption by 25% - 30% annually of public and commercial facilities in the country by procuring more energy efficient cooling appliances.

The trainings, which were delivered by Edwin Kwasi Tamakloe and Hubert Zan, focused on the different types of air conditioning systems available in Ghana and their technical specifications, star ratings, the types of refrigerants with low global warming potential (GWP) and ozone depletion potential (ODP), energy conservation practices, and some technical criteria that may be used in public tenders. Participants were also presented with tools that facilitate an economic analysis of the various options.

The training enhanced procurement officers' understanding of the economic benefit of sustainable cooling solutions. It aligns with Regulation 1 of the new Public Procurement Regulations 2022 (L.I 2466) which provides for environmentally compliant and sustainable procurement. The concept of the S/GPP is based on the three pillars of sustainability - environmental, social, and economic. Hence, under this initiative, public sector organisations are empowered to procure goods and services in ways that offer the best value for their money, benefiting the organisation and society as a whole.

Ghana Health Service GPP Training, Accra

S/GPP builds on gains made under ECOFRIDGES GO, a financing mechanism which facilitated the introduction of green cooling solutions which hitherto were not widely available in the country.

Space cooling in Ghana is rapidly expanding, possibly due to a growing middle-class population, increasing ambient temperatures, and urbanisation. There are about 2.5 million room air-conditioners in use locally. The estimated consumption per unit is between 3,000 – 5,400 kWh per year, due to their low energy efficiency ratings. S/GPP, if effectively implemented, can leverage the purchasing power of the government to drive improvements in the energy efficiency of air conditioners on the market and accelerate the transition towards more sustainable cooling solutions.

Group Picture with Participants at Ho Teaching Hospital

Group Picture with Participants at Koforidua Regional Health Directorate

Kofi Agyarko, Director of Renewables and Energy Efficiency Directorate, Energy Commission, reiterated that: "In the era of sustainable or green public procurement, the initial purchase price is no longer the important determinant factor, but rather the product lifecycle cost to both the user and the environment. S/GPP is one of the surest ways of accelerating penetration of environmentally friendly appliances, ridding the market of obsolete technologies and supporting sustainable development."

Speaking at the launch of the S/GPP training at the Ghana Health Service head quarters in Accra, Victor Minguez, UNEP-U4E's technical expert, said: "The training provided a great opportunity for procurement officials to see that sustainable cooling equipment is not only good for the environment and the society but also makes economic sense for the government."

The training is organised by the Energy Commission with technical assistance from the United for Efficiency (U4E) Initiative of the United Nations Environment Programme (UNEP).

The technical assistance was made possible by funding from the Department for Environment Food and Rural Affairs (DEFRA) of the United Kingdom. The target for the year is to train personnels in over 70 health facilities across the country. The initiative, if implemented across the country, has saving potential of 10,400 GWh by 2030 and thereby contributing to the attainment of Sustainable Development Goals 7 (affordable and clean energy), 12 (responsible consumption and production) and 13 (reduce climate change) by 2023 and ultimately the net-zero agenda by 2050. The Commission encourages the management of all public and commercial facilities across the country to embrace S/GPP to reduce their electricity consumption.

CONFERENCE

THE INTERNATIONAL ENERGY AGENCY (IEA) 8TH ANNUAL GLOBAL CONFERENCE ON ENERGY EFFICIENCY FROM 6-8 JUNE 2023, AT THE VERSAILLES PALAIS DES CONGRÈS, FRANCE

Hubert Nsoh Zan (first from left) sharing the Ghanaian Experience in a Discussion on Financing and Business Models for Scaling Energy Efficiency Action

The International Energy Agency (IEA) Annual Global Conference on Energy Efficiency is a flagship event that brings together Ministers, Chief Executive Officers and other Senior Officers working in the energy sector. This year's event was focused on how stronger policy action on energy efficiency and digitalisation can help governments and industries to address today's global energy crisis. Participating from Ghana were Hon. William Owuraku Aidoo, Deputy Minister for Energy, Ministry of Energy and Hubert Nsoh Zan, Assistant Manager of Energy Efficiency Regulations, Energy Commission.

The Energy Commission was a discussant in three side events: Financing and business models for scaling energy efficiency action, Realising multiple benefits of energy efficiency in sub-Saharan Africa, and Energy efficiency in emerging economies (E4) roundtable.

Hon William Owuraku Aidoo (Deputy Minister for Energy) in a Panel Discussion during Modernising Efficiency Session.

The aim of the E4 roundtable is to advance energy efficiency through collaboration with the world's top six emerging economies – Brazil, China, India, Indonesia, Mexico and South Africa. The roundtable brought together government representatives from major emerging economies to discuss their priority energy efficiency actions and shape the IEA's work programme for next year.

The discussion was focused around two themes:

- Role of energy efficiency in addressing energy security and affordability, and policy actions needed in the short and long term;
- Smart appliances and buildings, policy actions needed to benefit from new technologies;

Hubert used the platform given him to share Ghana's experience on the promotion of energy efficiency and also made a clarion call on the effort to "Stop dumping of new inefficient, and used obsolete appliances" on Africa. Emphasis was placed on it being a shared responsibility between the importing, and exporting country. Discussions at the conference was governed by the Chatham House rules to foster open and candid conversations. The conference was attended by government representatives, civil servants from selected African countries and IEA staff.

INSTITUTIONAL TRANSFORMATION

ENERGY COMMISSION DIGITALISATION DRIVE

The burgeoning Ghanaian energy sector has placed demand on the Energy Commission to deliver on its mandate effectively and efficiently. Consequently, the Commission, under its current leadership, is digitalising its operations to improve internal processes, make key information readily available to its customers and stakeholders, and enhance its customer experience. Below are a few of the interventions made:

- **Enterprise Document Management System (EDMS):** One of the most important solutions that has been implemented at the Commission is a cloud-based Enterprise Document Management System (EDMS). The system has helped to prevent the pain points associated with manual workflows by automating internal processes and digitalising mission-critical documents. This has led to increased operational efficiency and significantly reduced costs associated with paper-based processes.

- **Mobile Applications:** The Commission has deployed some key cross-platform mobile applications to interface with its stakeholders and the general public to improved its service provision and customer experience. For example, the public can now use the ***Certified Electricians GH*** mobile application to search for certified electrical wiring professionals within their locality, contact them, rate their performance, and submit a report on their conduct or service rendered.

The public can also use the ***GH Certified Appliances*** mobile application to locate shops that deal in appliances that meets the minimum performance standard for regulated appliances in Ghana. The App aids customers to verify and get details on the performance rating and estimated electricity consumption of an appliance. The above-mentioned applications are available for download on the Play Store and Apple Store.

- **Internet Protocol Telephony:** The Commission has switched from using analogue internal communication systems to IP telephony to improve communication among staff, and with clients.

- **Online Applications:** Application for various licenses issued by the Commission, participation in the electrical wiring professionals programme, and registration in the regulated appliances databases have all been digitalised to offer convenience to clients, and enhance delivery of our services. For example, companies in the electricity supply industry (ESI) can now use the online license application to apply for certificate of registration and authorisation.

- **Re-designed Website:** The Commission has also launched its newly re-designed AI-powered website. The content of the new website has been enriched and the general layout better structured to make it more dynamic and interactive, less clickable and more engaging through web bot systems, and more user-friendly. Noteworthy is the inclusion of an e-payment portal for fees charged by the Commission for regulatory services rendered.

- **E-library and Energy Database Platforms:** The Commission has over its lifetime generated a wealth of data and knowledge resources on the energy sector in Ghana and across the region. To enhance the performance of its function to secure a comprehensive database for national decision making for the efficient development and utilisation of energy resources, an ***E-library and a Ghana Energy Database*** have been developed.

The E-library contains local information on the Ghanaian energy sector as well as a collection of energy journals and publications on research conducted on the sector across the globe.

The Commission views information and communication technology as a process enabler for its staff to accomplish more work in less time, and at a reduced cost. The Commission's digitalisation drive is an ongoing process. New and innovative solutions of relevance to the operations of the Commission will be adopted and or adapted as and when available.

25TH ANNIVERSARY

ANNIVERSARY LAUNCH

25TH ANNIVERSARY

GALA GAMES

25TH ANNIVERSARY

AWARDS & DINNER NIGHT

25TH ANNIVERSARY

THANKSGIVING *Service*

PERSONALITY FOCUS

ING. OSCAR AMONOO-NEIZER

Ing. Oscar Amonoo-Neizer,
Executive Secretary, Energy Commission

One of the key actors behind the innovative sustainable energy development in Ghana's energy sector is Ing. Oscar Amonoo-Neizer, the current Executive Secretary of the Energy Commission. Ing. Oscar Amonoo-Neizer, is a visionary leader whose devotion, and resolute determination to change Ghana's energy landscape have won him commendation both at home and abroad. Ing. Amonoo-Neizer is driving the country's energy landscape in the areas of regulation, planning and policy toward a more resilient future with extraordinary leadership.

Ing. Oscar Amonoo-Neizer, has a distinguished career spanning more than three decades in the energy sector. He excelled in managerial roles in both economic and technical regulation of the energy sector in the country.

Prior to joining PURC, he was the Head of the erstwhile Technical Division at the Energy Commission executing core duties related to the regulation (development of legislative instruments and codes), monitoring and enforcement of electricity and natural gas subsectors. It was not surprising that in 2019 the President of the Republic of Ghana saw him fit and appointed him to head the Energy Commission as the Executive Secretary.

Through his exemplary leadership, the Energy Commission has achieved greater heights in energy regulations, planning and policy development in Ghana. The following has been achieved under his stewardship:

- ***Initiated the enactment of nineteen (19) Regulations on Standards and Labelling of electrical appliances***
- ***Developed the Integrated Power Sector Master Plan***
- ***Developed interactive Ghana Energy Database***
- ***Institutionalised the Energy Commissions Senior High School Renewable Energy Challenge***

- Caused the enactment of nineteen (19) regulations on Standards and Labelling of electrical appliances (in addition to the already existing three) to prevent the importation of substandard and inferior electrical appliances into the country. The Regulations are to promote the effective use and conservation of energy in the country and mitigate related climate change issues. These in the long term, will protect consumers, and also help industries and businesses to compete globally.

- Developed the Integrated Power Sector Master Plan (IPSMP) which serves as the basis for the procurement of additional electricity generation capacity and fuel services for the electricity sub-sector.

- Developed the interactive Ghana Energy Database as a fulfilment of a mandate of the Commission. The database serves as data hub for policymakers, academia and civil society organisations to enhance scientific-based findings and decision-making.

- Institutionalised the annual Senior High School Renewable Energy Challenge to instil passion for solving renewable energy, energy efficiency and climate change challenges to students through research and innovation. The Challenge gives students a platform to exhibit their innovative renewable energy projects.

- Developed technical code for the net-metering to guide the implementation of the net-metering scheme. This together with the tariff methodology developed by the Public Utilities Regulatory Commission (PURC) will incentivise the public to install solar system as a means of reducing their monthly electricity bills. This will also help in reducing the country's dependency on fossil fuels.

- Successfully led the Commission's team and together with the Sector Ministry developed the long-awaited national energy policy which was subsequently approved by Cabinet.

Ing. Oscar Amonoo-Neizer has received both national and international attention for his remarkable leadership and dedication to the advancement of regulation and planning of electricity, renewables and natural gas in Ghana. He was given recognition and awarded as one of the top African Public Sector leaders under the Africa Top 50 Public Sector Leadership Award. Under his leadership, the Commission continues to win honours. Ing. Amonoo-Neizer is firm in his commitment to Ghana's goal of being a regional leader in renewable energy development.

The exceptional leadership of Ing. Oscar Amonoo-Neizer, the Executive Secretary of Ghana's Energy Commission, continues to help push the energy sector in the direction of a sustainable energy future through forward-thinking, devotion and dedication, innovation, adaptability and resilience, staff empowerment, continuous learning and emotional intelligence.

OUR CONTACTS

HEAD OFFICE - GREATER ACCRA
P.M. B. Ministries, Accra Ghana
GA-037-3212
info@energycom.gov.gh
+233 (0)302 813 756/7

TAKORADI OFFICE
Takoradi Office, SSNIT House,
Close To Central Police Station
+233 (0)312035401

Takoradi Port
+233 (0)312291804

TAMALE OFFICE SSNIT Road,
Beside Fire Service Office
+233 (0)372001572

KUMASI OFFICE
Takoradi Office, SSNIT House,
Close To Central Police Station
+233 (0)312035401

EDITORIAL TEAM

Paula Edze, Manager, Renewable Energy Regulation

Salifu Addo, Deputy Director, PPRME

Frederick Ken. Appiah, Deputy Director, Renewable Energy Regulation

Linda Ethel Mensah, Senior Manager, Public Affairs

John Kwabena Bambio, Manager, MIS

Stephen N-ebe Yomoh, Assistant Manager, Electrical Wiring

Caleb Azindow, Officer, Renewable Energy Regulation

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+233 (0)302 813 756/7 theenergygazette@energycom.gov.gh www.energycom.gov.gh