



Globethics Western Africa Centre - Accra in collaboration with the Regional Center for Energy and Environmental Sustainability (RCEES) at the University of Energy and Natural Resources (UENR), Sunyani - Ghana.

Online engagement on the topic:



**'FROM WASTE TO WATTS:
TRANSFORMING ENERGY
CONSUMPTION WITH EFFICIENCY'**

Speaker: Ing. Prof. Samuel Gyamfi
*Head, Dept. of Renewable Energy Engineering & Deputy
Director of the Regional Center for Energy and Environmental
Sustainability (RCEES) at the University of Energy and Natural
Resources (UENR), Sunyani, Ghana*



Date: Thursday 19th September 2024, 11:00 – 13:00 GMT (13:00 – 15:00 CEST)

Format: Virtual on Zoom

CONCEPT NOTE

1.0 Synopsis

By Ing. Prof. Samuel Gyamfi

As global energy demand escalates, driven by population growth, industrialisation, and economic development, the need for efficient and sustainable energy solutions becomes paramount. In Ghana, the primary energy sources are fossil fuels, constituting about 61% of total energy consumption, with biomass, hydro and solar contributing 32%, 6%, and 1% respectively. This dependency on fossil fuels poses significant challenges, including high costs, environmental degradation, and energy insecurity.

This presentation, *"From Waste to Watts: Transforming Energy Consumption with Efficiency"* addresses the critical role of energy efficiency technologies in achieving affordable energy in Ghana. It explores the common causes of energy waste, such as transmission losses, inefficient appliances, and behavioural waste, and highlights the numerous benefits of energy efficiency. These benefits include cost savings, reduced dependence on imported fuels, decreased greenhouse gas emissions, technological innovation, and resource conservation. Key technologies for enhancing energy efficiency are discussed, including advanced building designs, energy-efficient lighting, modern appliances, optimised industrial processes, and sustainable transportation options.

The presentation also features case studies from successful energy efficiency projects, demonstrating the impact of collaborative efforts and innovative solutions. Moreover, it emphasises the importance of policy and regulation in promoting energy efficiency, such as implementing energy efficiency standards, providing financial incentives, and conducting energy audits. It also focuses on the necessity of investing in research and development, utilising energy management systems, and fostering public education and awareness.

2.0 Objectives

The online engagement is organised in collaboration between the Globethics Western Africa Centre- Accra, and the Regional Centre for Energy and Environmental Sustainability at the University of Energy and Natural Resources in Sunyani, Ghana.

Under the theme, the objectives are to:



- a) Provide an overview of the current energy sources, consumption patterns, challenges and, opportunities for efficiency in Ghana;
- b) Introduce various energy efficiency technologies and best practices that can be applicable in achieving affordable energy for residential, commercial and industrial sectors;
- c) Discuss the benefits of energy efficiency and analyse successful case studies of energy efficiency projects to illustrate practical application;
- d) Review the existing policies and regulations and explore areas for potential improvement in advancing energy efficiency in Ghana; and,
- e) Identify and highlight the role of different stakeholders and explore opportunities for collaboration and innovative solutions to advance energy efficiency goals.

3.0 Format of the meeting

This is a free informative and interactive session. The topic would be addressed in a presentation by the main speaker, Ing. Prof. Samuel Gyamfi; an expert in the field, with inputs from key stakeholders present. Participants are also invited to contribute valuable insights to the discussion. Meeting proceedings will be drafted to keep tag of recommendations and follow-up actions.

4.0 Event Details/ Programme

- Date: Thursday 19th September 2024
- Time: **11:00 GMT (Accra)**
08:00 (Buenos Aires); 13:00 (Geneva); 13:00 (Cape Town); 14:00 (Nairobi); 16:30 (Bangalore); 18:00 (Yogyakarta).
- Duration: 2 hours i.e., between 11:00 – 13:00 GMT
- Venue: Virtual event, through Zoom
- Participation: Free/ via pre-registration using the Zoom link generated

5.0 Participation

The meeting is expected to host a global audience from a cross-section of stakeholders including:

- National government stakeholders;

- Private sector organisations;
- Individual experts;
- Higher Education Institutional representatives; including the UENR students and community;
- Non-governmental organisations, CSOs; and,
- A cross-section of society stakeholders.

6.0 Brief Speaker Profile

- **Main Speaker:** Ing. Prof. Samuel Gyamfi

Samuel Gyamfi is an Associate Professor in the Department of Renewable Energy Engineering at the University of Energy and Natural Resources, Sunyani, Ghana, and a Certified Sustainable Energy Management Professional. He is currently the Head of the Department of Renewable Energy Engineering, the Deputy Director of the Regional Center for Energy and Environmental Sustainability, and the immediate past Dean of the School of Energy. He held the Dean of Students Affairs position from August 2017 to August 2019 and was the Acting Head of the Mechanical and Manufacturing Engineering Department from August 2015 to August 2017.

Samuel held a Lecturer Position in the School of Engineering and Information Technology at Murdoch University in Western Australia from 2011 to 2014. He held Research Associate positions at the Advanced Energy and Materials Systems Laboratory (AEMSLab) at the University of Canterbury, New Zealand, from 2010 to 2011. In 2007- 2008 he was a Visiting Research Scientist at the Juelich Research Centre in Germany where he was involved in energy demand side management and demand response modeling.

Samuel has led several multi-national projects, including projects with the European Union (EU), the Chinese Government, the German Government, and the World Bank.

Samuel received his PhD in Mechanical Engineering (specialising in residential electricity demand response assessment and modelling) from the University of Canterbury, New Zealand in 2010 and his MSc in Energy Systems from the Aachen University of Applied Sciences in Germany in 2004. He obtained his Bachelor's degree in Geodetic Engineering from KNUST in 2001. His main research interest is in utility demand side management and how human factors can be used to develop technology and communication systems to improve energy efficiency behaviour.

7.0 Anticipated results

The following outcomes are envisaged:

- i. Participants will gain an understanding of Ghana’s current energy consumption patterns, challenges, and opportunities. This knowledge will help them better assess their energy use and identify areas for improvement.
- ii. Participants will be introduced to various energy-efficient technologies and gain insights from the case studies. These will enable them to evaluate and adapt strategies that can be deployed to their organisations or communities.
- iii. Participants will gain increased awareness and understanding of the existing policies and regulatory frameworks related to energy efficiency in Ghana. This will help them navigate the regulatory environment more effectively and advocate for or influence policy improvements.
- iv. This engagement will facilitate networking among participants, leading to the exchange of ideas, experiences, best practices and collaboration opportunities. This networking will foster partnerships, research, knowledge exchange and collective efforts to promote initiatives towards common energy efficiency goals.

8.0 About the collaborating partner institution: RCEES/ UENR

The Regional Center for Energy and Environmental Sustainability (RCEES) was established under the Africa Higher Education Centers of Excellence (ACE) Project. RCEES is committed to conducting cutting-edge research in energy and environment to support and promote sustainable development. We are committed to promoting quality and excellent postgraduate education that can transform and support sustainable development. We currently run 4 postgraduate programs and 6 short courses in the field of energy and environment. RCEES has won many projects that focus on tackling issues related to sustainable developmental goals. These include;

- MoNaL project: testing the use of e-mopeds and e-cargo bikes in sub-Saharan Africa using a sharing model.
- GenDesign (STEAM): Energy access strategy for disadvantaged communities in Ghana Sub-award from Carleton University, Canada.
- Energy Service Center: Provides hands-on training to commercial and industrial electricity consumers and service providers in renewable energy (RE) and energy efficiency (EE).

- Erasmus Project: Train faculty members to be able to redesign a curriculum that will create future game-changers in energy, innovative, and entrepreneurial graduates. And include sustainability and SDGs in the curriculum.
- China South-South Cooperation on Climate Change: With a focus on the provision of RE equipment to mitigate the harsh effect of climate change on underserved rural Poor Island and inland communities that will not have access to electricity in the foreseeable future and energy efficient goods to reduce electricity consumptions in public facilities.
- Professional Education for Renewable Energy in Ghana – (ProREG): Addresses the lack of labour market relevance of education in the field of renewable energy in Ghana.

Among others.

9.0 Globethics

Founded in 2004, Globethics is an independent, not-for-profit foundation with an international Board and affiliated Centres across the globe. It extends its global presence and outreach through its applied ethics resources, and network of individuals and cooperation partners which has grown over the years to include the establishment of an **Academy (BAC & EAHEA accredited), the world's largest digital library on ethics; a multilingual publishing house; representations in Asia, Africa and South and North America;** and the organisation of the Global Ethics Forum and other related engagements, research, training and capacity building projects.

In Ghana, Globethics has been in operation since 2018 and has over the years in collaboration with its local partners -Kingdom Equip Network, Ghana Integrity Initiative and other key Higher Education Institutions (HEIs), Government agencies and CSOs such as Commission for Human Rights and Administrative Justice (CHRAJ), Institute of Economic Affairs (IEA), and Ghana Anti-Corruption Coalition (GACC), organised several programmes. These include a multi-sectoral 'Ethics and Values Lectures' (2018), the African Church Assets Programme (2019), the pilot of a self-assessing ethical ranking tool for HEIs- 'Ethics Model of Excellence Tool' (EMET 2021/2022) and recent online forums on 'Ethics of Records Management For Higher Education Institutions' (2022), 'Digital Well-being: Tools, Security and Ethics for Navigating the Cyberspace' (2023 in collaboration with the Cyber Security Authority of Ghana) and 'Ecological Lessons from the Akosombo and Kpong Dam Spills' (2023), among other activities.

Mindful of the emerging ethical landscape related to numerous fragilities and uncertainties including unprecedented social, environmental, technological and political challenges the human community faces, Globethics introduced a new strategy in early 2023 to expand its collaborative impact across the globe. These strategic areas are:

- Priority 1: Ethics and Standards in Higher Education;
- Priority 2: Ethics of Sustainability and Environmental Justice;
- Priority 3: Ethics of Digital and Emerging Technologies; and,
- Priority 4: Ethics of Inclusive Peace and Responsible Governance.

You may learn more about Globethics Strategy and 2023 Annual Report here: [Global impact - Globethics](#)

9.1 The Globethics Intervention

Globethics aims to achieve transformative change with its global network. We believe that strong alliances with partners around the world are necessary to pursue our mission for ethical leadership at individual, collective and institutional levels so that awareness, competencies, and conditions are raised for a future that ensures all people live at their fullest potential in an environment for which they take common responsibility.

To achieve this goal, Globethics:

- Empowers and equips students and professionals through higher education, including executive education programs in ethics (as an accredited provider of online courses);
- Develops and disseminates knowledge about applied ethics through networking, collaborative research, publications and open-access resources via its leading free online library on ethics;
- Supports ethical standard setting and implementation for institutional development;
- Engages with policymakers on the international, national, regional and local governmental level, and at the higher education institution level, in multi-stakeholder academic and policy dialogues on global issues for transformative ethical leadership; and,
- Develop and nurture our relationships with higher education institutions, networks, organisations, associations and individuals, who share our vision and mission, and with whom we endeavour to co-create knowledge and exchange expertise on ethical issues.

10.0 Contact Information - Globethics Accra Centre :

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