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**EDUCATION**

MSc, Sustainable Energy Management, 2017-2019  
University of Energy and Natural Resources, Ghana

**Dissertation title:** Potential of Meeting Electricity Needs of Off-Grid Community with Mini-Grid Solar Systems and Assessment of Shading Effects on Electricity Output.

**Advisors:** Prof. Samuel Gyamfi, Prof. Nana Sarfo Agyemang Derkyi

B-Tech, Electrical/Electronic Engineering (Power)  
Sunyani Technical University, Ghana, 2024

**Final Year Thesis:** Stochastic behaviour of Ghana power grid with massive electro-mobility penetration

**Advisor:** Dr. Samuel Yeboah Jonas

No Degree, Urban, Energy and Environmental Planning,  
Aalborg University, Denmark, 2020

**Project:** The Impacts of EV Charging on the Danish Energy System. How will the increase of EV charging in 2030 and 2050, influence the energy system of Denmark, and which institutional changes are necessary to overcome the associated challenges.

**Advisor:** Dr. Miguel Chang

**Sponsor:** Erasmus Grant for an Erasmus+ International Credit Mobility

BSc, Renewable Energy Engineering  
University of Energy and Natural Resources, Ghana, 2012-2016

**Final Year Thesis:** Optimization of Renewable Energy Technologies Utilization Based on Geo-Location (Geo-Opt)

**Advisor:** Prof. Nana Sarfo Agyemang Derkyi

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**RESEARCH INTEREST**

Mini grids, rural electrification, Climate finance, energy transition, the water-energy-food nexus (WEF), and life cycle analysis

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**SKILLS/SOFTWARE**

MicroGridsPy, Finplan, Xendee tool, COMET tool, Microsoft Office, Microsoft Excel & VISIO, PowerPoint, HOMER Pro, RETScreen, LEAP, PVSyst, PVGIS, EnergyPLAN, Clews software, SPSS, Osemosys software, Project Coordination and Management

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**WORK HISTORY (RESEARCH AND TEACHING)**

**RENEWABLE ENERGY TRAINER (Remote), ASHDAM SOLAR ACADEMY NIGERIA (2022 till date)**

- ✓ Conducts training in Renewable Energy Project decision-making Tools (e.g. HOMER, RETScreen, etc)

**RESEARCH FELLOW, UNIVERSITY OF ENERGY AND NATURAL RESOURCES (2021 till date)**

- ✓ Conducts research and coordinates research activities.
- ✓ Lecture undergraduate students in Energy Management and Efficiency, Energy in Transportation Systems, Solar PV systems, Solar Thermal Technology and Design etc.
- ✓ Supervise students' research work
- ✓ Curriculum development (BSc, MSc and PhD programs)
- ✓ Conduct Energy Audits and write reports.
- ✓ Coordinates and conducts Workshops, Short Courses and Training
- ✓ Mentor junior researchers by providing guidance on study design, data analysis, and manuscript preparation.

**Examination Officer, Department of Renewable Energy Engineering (2024 till date)**

**RESEARCH OFFICER, UNIVERSITY OF ENERGY AND NATURAL RESOURCES (2016 to 2021)**

- ✓ Conducted research and coordinated research activities.
- ✓ Participated in grants and proposal writing.
- ✓ Conducted energy audits and wrote reports.
- ✓ Coordinated seminars, workshops, and training.
- ✓ Supervised students research activities.

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## PUBLICATION

1. **Asuamah E. Y.**, Abass Ishaq, Yeboah S.J., Duodu W.S., Stochastic behaviour of Ghana power grid with massive electro-mobility penetration, *Scientific African*, Volume 27, 2025, e02497, ISSN 2468-2276, <https://doi.org/10.1016/j.sciaf.2024.e02497>.
2. Atinsia M.A, Amankwah W., **Asuamah E.Y**, Diawuo F. A., Chapter 5 - Case studies on hybrid pumped hydro energy storage systems *Pumped Hydro Energy Storage for Hybrid Systems*, 2023, Pages 73-88 DOI:10.1016/B978-0-12-818853-8.00010-8
3. **Asuamah E.Y.**, Amankwah W., Atinsia M. A., Kyereh Domfeh M., Diawuo F.A., Chapter 6 - Concept for cost-effective pumped hydro energy storage system for developing countries, *Pumped Hydro Energy Storage for Hybrid Systems*, 2023, Pages 89-103 DOI:10.1016/B978-0-12-818853-8.00007-8
4. Gyamfi S., **Asuamah E. Y.**, Ansu J. G., Chapter 8 - Techno-economic challenges of pumped hydro energy storage, *Pumped Hydro Energy Storage for Hybrid Systems*, 2023, Pages 119- 135 <https://doi.org/10.1016/B978-0-12-818853-8.00011-X>
5. Gyamfi, S., Felix Amankwah Diawuo, F.A, **Asuamah E.Y.**, Effah E., Chapter 12 - The role of demand-side management in sustainable energy sector development, Editor(s): Imran Khan, *Renewable Energy and Sustainability*, Elsevier, 2022, Pages 325-346, ISBN 9780323886680, <https://doi.org/10.1016/B978-0-323-88668-0.00010-3>
6. **Asuamah, Y. E.**, Gyamfi, S., & Dagoumas, Potential of meeting electricity needs of off grid community with mini-grid solar systems. *A. Scientific African*, 11, e00675, <https://doi.org/10.1016/j.sciaf.2020.e00675>
7. Ikejiofor, O.E.; **Asuamah, E. Y.**; Njoku, H.O.; Enibe, S.O. Detection of Hotspots and Performance Deteriorations in PV Modules under Partial Shading Conditions Using Infrared Thermography *Eng. Proc.* 2020, 2, 71, <https://doi.org/10.3390/ecsa-7-08201>
8. Gyamfi S., Derkyi N.S.A, **Asuamah E.Y**, Aduako J.A. Renewable Energy and Sustainable Development in Kobo-bah A; Diji, C. J., *Sustainable Hydropower in West Africa: 75 – 93*. Academic Press. An imprint of Elsevier. <https://doi.org/10.1016/B978-0-12-813016-2.00006-X>
9. Gyamfi S., Derkyi N.S.A, **Asuamah E.Y**, The Potential, and the Economics of Hydropower Investment in West Africa. In Kobo-bah A; Diji, C.J., *Sustainable Hydropower in West Africa: 95 – 107*. Academic Press. An imprint of Elsevier, <https://doi.org/10.1016/B978-0-12-813016-2.00007-1>

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## CONFERENCES AND SEMINARS

1. International Conference on Higher Education in Africa. **Theme:** Enhancing Problem Based Learning, Entrepreneurship, Innovation and Sustainability in Higher Education in Africa (EEISHEA) Moshi, Tanzania, 28/09/2022 – 30/09/2022
  - ✓ **SPEAKER:** Curriculum Redevelopment and Implementation: The Sustainability Perspective
  - ✓ **SPEAKER:** Investigating Students' Views on Student Centered Learning Approach in University of Energy and Natural Resources, Ghana
  - ✓ **SPEAKER:** Integration of Entrepreneurship into Higher Education in Ghana: The University of Energy and Natural Resources Experience
2. Renewable Energy, Unlocking the potential of Africans Renewable Energy Resources, Leveraging Technologies, and Policies for Industrialization and Sustainable Transformation in Ghana, DAAD Event 2022. (27/04/2022 – 30/04/2022)
  - ✓ **SPEAKER** on the topics "Status of renewable energy resources (hydropower, solar and wind energy, domestic and municipal waste) and their potentials in Ghana" and "Accessibility and affordability of renewable energy by Ghanaian communities"
3. Seminar on Electrical Wiring Regulations (21/04/2022)
4. Seminar on Biogas for Domestic/Commercial use; The Deciding Ingredients (25/03/2022)
5. Seminar on Designing and Building Energy Efficient Homes/offices Online, (07/12/2021)
6. Renewable Energy Fair: Removing barriers to renewable energy development in Ghana. Accra Ghana, (11/10/2021 – 15/10/2021)
7. The Role of Energy Enforcement in Achieving Energy Efficiency Goals Tamale, Online, 20/09/2021

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## PROJECTS

1. **Data Collection Consultant**, USAID WASH-FIN 2 project implemented in Ghana by Tetra Tech ARD Inc. (5 Months)
  - ✓ Assisting in Conducting solarization landscape assessment for Ghana’s water and liquid waste sectors.
  - ✓ Data collection lead
2. **Project Member**, Improving Study Programs in Ghana by Introducing Green Solutions, Sustainability Modules, and Digital Transformation (ImPreSSion) Project. Sponsored by the European Education and Culture Executive Agency (EACEA) of the EU Commission 2023-2028
  - ✓ Assisting in redesigning MSc Sustainable Energy Engineering and Management program to include Green Solutions, Sustainability Modules and Digital transformation.
3. **Project Member (Subject Matter Expert)**, Erasmus+ Project no. 586416: Enhancing Entrepreneurship, Innovation and Sustainability in Higher Education in Africa (EISHEA) project under the Erasmus+ Capacity Building in Higher Education programme. It involves 5 African and 5 European universities and aims:
  - ✓ To initiate sustained educational change in Higher Education study
  - ✓ To equip graduates with skills and competences for employability and self-employment.
  - ✓ To foster trans-African and trans-continental cooperation between HE institutions in East and West Africa and in the EU, as well as local cooperation with external stakeholders.
4. **Lead Consultant, UNICEF (5 months)**
  - ✓ Conducted an ASHRAE Level II Energy Audit for UNICEF Accra and Tamale offices in Ghana (2024)
5. **Research support team, 2024**
  - ✓ Conducted an ASHRAE Level II Energy Audit assignment commissioned under the C40 Cities Climate Action Implementation (CAI) Programme for thirteen (13) buildings/facilities of Accra Metropolitan Assembly (AMA)
6. **Research Assistant**, Department of Infrastructure and Energy, African Union Commission (4 months, 2024).
  - ✓ Developed Africa Solar Energy Policy Framework
7. **Team Member, UNOPS, UNEP NDC Climate Action Project, 2023**

The project seeks to determine how Solar Powered Irrigation Systems could reduce water security issues emanating from climate change, with co-benefits for productivity and profitability, as well as crop management and food security.

  - ✓ Developed SPIS (technical and financial) curriculum and other training materials
  - ✓ Developed a competency-based training (CBT) approach
  - ✓ Trainer, Toolbox for “Solar-Powered Irrigation Systems
8. **Technical Consultant**, Economic Consulting Associates (ECA), KITE And Energynautics.
  - ✓ Successfully conducted a solar PV feasibility study on 40 selected public buildings across Ghana, determined their energy consumption and assessed the size of Solar PV required for the facilities.
9. **Technical/Data Collection Consultant, SRC Consulting, Ghana**
  - ✓ Successfully conducted a socioeconomic impact study for mini-grid and stand-alone solar PV systems electrification under the scaling-up renewable energy program (SREP) of the Ministry of Energy (MoE), including preparation of a survey questionnaire, supervision of enumerators during field data collection at Inland and Island communities in Ghana, facilitation of focus group discussions and key informant interviews, and determination of the existing energy markets and economic activities of the communities
10. **Team Member**, Professional Education for Renewable Energy in Ghana (ProREG) Funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) (2022-2025)
  - ✓ Redesigned MSc. Sustainable Energy Engineering and Management to include sustainability contents
  - ✓ Development of Masters in RE Technologies curriculum
11. **Project Member**, Energy access strategy for disadvantaged communities in Ghana, Funded by Gendered Design in STEAM Team, University of Alberta, Canada (2020-2021).
12. **Project Coordinator**, Solar-Powered Irrigation Systems (SPIS) Project Funded by GIZ (2021)

- ✓ Developed technical and financial competence-based curriculum to train farmers, extension officers of Ministry of Food and Agriculture and solar technicians

13. **Project Coordinator**, China South-South Cooperation (Clean Energy Project) Funded by the Chinese Government, National Development and Reform Commission of the People's Republic of China, **Impact Video Link:** <https://www.youtube.com/watch?v=PobKOUrIPt0> (2016-2023)

14. **Energy Audit Professional Trainer and Coordinator**, Sustainable Energy Services Centre (SESC) Project, Funded by the Millennium Development Authority (MIDA) (2020- till date)  
✓ Developed curriculum to offer training in Energy Audit and Management

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**RELEVANT  
PROFESSIONAL  
TRAINING/CONTINU  
OUS PROFESSIONAL  
DEVELOPMENT)**

1. Training of Trainers and commissioning of green hydrogen system for decentralized energy supply organized by Bochum University of Applied Sciences and Don Bosco Training Centre, Ghana February 17-28, 2025
2. Certificate of Completion: Energy Performance Certification (EPC) for Buildings organized by GIZ, KNUST, UENR, PLANCO COSULTING GMBH, 20th November - 1st December 2023
3. Certificate of Participation: Micro-Grid Academy: Module 2-Decentralized Energy Systems (Micro-grid)-Site Selection and Engineering organized by University of Strathmore Kenya, 23rd - 27th October 2023.
4. Certificate of Participation: Micro-Grid Academy: Module 1-Decentralized Energy Systems (Micro-grid)- Micro-Grid Architecture and Management Systems organized by University of Strathmore Kenya, 10th -14th July 2023
5. Certificate of Completion: Training of Advisors (ToA), Toolbox for “Solar-Powered Irrigation Systems” organized by CIHEAM-Bari, GIZ, IWMI, WACWISA-UDS, 5th - 9th September 2022
6. Certificate of Participation: Energy Audit Practical Professional (TOT) organized by Millennium Development Authority (MIDA) & Energy Commission, Ghana, 31st August 2020 – 4th September 2020
7. Certificate of Completion: Energy Audit Practical Professional (EAP) organized by Energy Commission, 16th December 2019 – 20th December 2019
8. Certificate of Participation: Training of Trainer on Solar Thermal Systems organized by Centre for Renewable Energy and Industrial Maintenance (CERMI) & LuxDev, Cape Verde, 11th November 2019 – 22nd November 2019
9. Certificate of Participation: Technology of Solar Home Systems for Addressing Climate Change organized, 3rd May 2019 – 4th May 2019
10. Certificate of Participation: Renewable Energy Project Analysis, organized by The Brew-Hammond Energy Centre, College of Engineering, KNUST, 1st June 2015 – 5th June, 2015
11. Certificate of Participation: Design and Installation of Stand-alone Solar PV Systems organized by The Brew-Hammond Energy Centre, College of Engineering, KNUST, 18th May 2015 – 22nd May 2015

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**CERTIFICATION** I hereby declare that, to the best of my knowledge, this CV accurately represents myself, qualifications, and experience.

Emmanuel Yeboah Asumah  
**Name**



**Signature**