

# **CURRICULUM VITAE**

**EMMANUEL WENDSONGRE RAMDE**

**Sept. 2023**

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## Short Biography



Dr Emmanuel Wendsongre Ramde is a mechanical engineer, an energy specialist and project management, monitoring, and evaluation expert. He also holds a Master's in Business Administration (MBA), Finance option. He is a senior lecturer and a past director of The Brew-Hammond Energy Centre, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana. He is currently serving at the ECOWAS Commission in Abuja as Team Leader of the project "Improving Governance of the Energy Sector in West Africa (AGoSE-AO, acronym in French). AGoSE-AO is within the framework of a cooperation agreement between ECOWAS, UEMOA and the Commission of the European Union (EU) under the 11th European Development Fund (EDF).

From 2012 to 2019, Ing. Dr Ramde has served as the Ghana National Representative of the African Network for Solar Energy (ANSOLE) and from 2012, he has been serving as the Vice Regional Representative of ANSOLE in West Africa. He reads, writes and speaks both English and French fluently in addition to his mother tongue, Mooré.

Ing. Dr Ramde has about nineteen years of experience in designing, implementing, managing, monitoring and evaluating energy related and climate change projects. He has been working with all the major regional and international development partners and national stakeholders. He has been teaching, consulting and conducting research in Energy including Renewable Energy and Energy Efficiency, global warming and climate change, Thermodynamics, Fluid Mechanics, Heat transfer, Refrigeration and Air Conditioning, Internal Combustion Engines, Turbo-machinery, Aerodynamics, Pneumatics and Hydraulics. He is also serving as visiting scholar, moderator of programmes, external examiner and scientific board member in a number of universities within and outside Ghana. He is a reviewer in a number of journals including Renewable and Sustainable Energy Reviews, African Journal of Science, Technology, Innovation and Development and British Journal of Applied Technologies.

Ing. Dr Ramde has been managing a number of energy projects and conducting consultancy jobs in the energy sector and allied. Dr Ramde has been consulting for UNIDO, USAID, GIZ, AFREC, ECREEE through The Brew-Hammond Energy Centre and Arthur Energy Advisors, The World Bank through Danish Energy Management, The European Commission through AETS and NTU International A/S, etc.

In November 2020, Ing. Dr Ramde has been made "Chevalier de l'Ordre de l'Étalon" (Knight of the Order of the Stallion), the highest national award of Burkina Faso conferred to people by the president for outstanding personal merit and distinguished service to the nation.

### Personal details

**Family name:** RAMDE  
**First names:** Emmanuel Wendsongré  
**Date of birth:** 24-12-1971  
**Nationality:** Burkinabe living in Ghana since 2001

### Education: PhD degree in Energy/Mechanical Engineering

Institution (Date from - Date to)	Degree(s) or Diploma(s) obtained:
Kwame Nkrumah University of Science and Technology (KNUST) - Kumasi, Ghana 2017-2021	MBA Finance
Institut International d'Ingénierie de l'eau et de l'environnement/ KNUST 2009-2013	PhD degree in Energy/Mechanical Engineering
KNUST; Kumasi, Ghana 2001-2003	Master's degree in Mechanical Engineering
Joseph Ki-Zerbo University, Ouagadougou, Burkina Faso 1997-1998	Master's degree in Pure Physics (Maitrise)
Joseph Ki-Zerbo University, Ouagadougou, Burkina Faso 1996-1997	Bachelor's degree in Pure Physics (License)
Joseph Ki-Zerbo University, Ouagadougou, Burkina Faso 1993-1996	Second-year diploma in Physics and Chemistry

### Language skills: Indicate competence on a scale of A1 to C2 (C2 - excellent; A1 - basic)

Language	Reading	Speaking	Writing
English	C2	C2	C2
French	C2	C2	C2
Mooré	C1	C1	A1

### Membership of professional bodies /Boards:

- Member, Ghana Institute of Engineers (GhIE)
- Member, International Solar Energy Society (ISES)
- Member, African Network for Solar Energy (ANSOLE)
- Steering Committee member, GIZ Project "Market Entry into Renewable Energy and Energy Efficiency for the Productive Sector in Ghana"
- Member of scientific and pedagogical advisory board of "Ecole supérieure des Métiers des Energies Renouvelables, ESMER", Cotonou, Benin
- Moderator of Programmes, Department of Energy and Environmental Engineering, University of Energy and Natural Resources, Sunyani, Ghana
- Moderator of Programmes, Department of Mech. Engineering, Ho Technical University

### Honours and awards:

- November 2020: Chevalier de l'Ordre de l'Etalon (Knight of the Order of the Stallion), the highest national award of Burkina Faso conferred to people by the president for outstanding personal merit and distinguished service to the nation
- February 2010: University of Michigan Presidential Award

### Other skills:

- Excellent knowledge of ICT tools: hardware and software including programming and modelling, advanced internet searching, Microsoft office, etc
- Financial Modelling and Analysis of energy projects, off-grid and Grid-Connected Renewable Energy systems, solar PV and Concentrating Solar Power (CSP), Stand Alone Power System, Design and installation; Solar thermal Technologies including Solar cooling, etc

**Present position:** Team Leader – Senior Expert in Energy Policy and Regulatory and Institutional Framework, ECOWAS Commission

**Years within KNUST till 2023:** 19 years

## Key qualifications

<p><b>Master's and PhD degrees in Energy/ Mechanical Engineering</b> from Kwame Nkrumah University of Science and Technology and from The International Institute for Water and Environmental Engineering, two of the leading tertiary institutions in the area of energy in Africa.</p>
<p><b>More than 19 years of professional experience in the nexus energy-climate change</b> (technology, management and policy): grid-connected and off-grid renewable energy, solar PV, solar thermal technologies, wind energy, bioenergy, waste to energy, energy storage, smart energy systems, regulatory and institutional issues, Green entrepreneurship and business development, development and delivery of capacity building needs.</p> <p>I also have about nineteen years of experience in designing, implementing, managing, monitoring and evaluating energy related projects.</p>
<p><b>Knowledge of ECOWAS region and the issues and problems facing its energy:</b></p> <ul style="list-style-type: none"><li>• I am a Burkinabe resident in Ghana for the past 22 years. I have done and continue to do consultancy in the energy sector affecting all Sub-Saharan Africa in general and West Africa in particular.</li><li>• I have been working on projects that cumulatively cover almost all West African countries and beyond.</li></ul> <p>I have deep knowledge of the West African energy landscape, of legal, regulatory, and institutional framework. I have been carrying out various assignments involving directly or indirectly the ECOWAS Directorate of Energy and the specialized agencies operating in the energy sector, namely ECREEE, ERERA, WAPP and WAGPA.</p>
<p><b>Experience working with development partners</b></p> <p>More than 30 years of experience in development cooperation projects: I have been a youth leader in The Catholic church, member of the International Young Catholic Students (IYCS) and as early as my secondary school days, I have developed and implemented projects funded by development cooperation partners. Moreover, the centre that I headed has collaborated through projects and consultancy with almost all the major development partners which operate in the Developing World. I therefore have the exposure, the experience and the ability to manage relations with development partners.</p>
<p><b>Experience as a Team Leader, teamwork and interpersonal skills</b></p> <p>I have in numerous occasions been leading teams for various assignments.</p> <p>I am currently the Team Leader of the AGOSE-AO project of the ECOWAS Commission, a project funded by the European Commission. I was also the Team Leader of another European Commission funded project in Benin Republic which involved 3 senior key experts, 9 non key experts and 12 junior experts (interns). The pool of experts I lead is multiracial, multicultural and cross generational.</p> <p>Moreover, The Brew-Hammond Energy Centre which I have headed as Director is multidisciplinary drawing its fellowship base across a wide range of departments within the university with over 60 fellows. This required excellent interpersonal and communication skills, human resource management techniques and team work which I possess.</p> <p>As a Director, not only I did lead Teams but I also appointed team leaders and had a supervisory role over their work.</p> <p>Furthermore, the knowledge that I have acquired during the MBA programme, in addition to my strong technical know-how, has really equipped me with the necessary soft skills to work in any challenging multi-disciplinary and multi-cultural environment.</p>
<p><b>High proficiency in English and French</b></p>
<p><b>Proficiency in information communication technologies (ICT):</b> Excellent knowledge of ICT tools: hardware and software including programming and modelling, advanced internet searching, Microsoft office, Financial Modelling and Analysis of energy projects</p>
<p><b>Experience in Monitoring, Evaluation and data analysis</b></p> <p>Some of my research and consultancy services required data acquisition, validation, storage, processing and analysis. Examples of such experience are the EndDev evaluation, the evaluation of the USAID West African Energy portfolio and the terminal evaluation of GEF-UNEP efficient lighting project in Côte D'Ivoire.</p>
<p><b>Ability to lead the development, management/review of reports and papers on technical and policy issues:</b> Being a senior lecturer and a research fellow, having been Sectional Head, Thermo fluids and Energy Systems (2012-2014) and then Director of The Brew-Hammond Energy Centre (2017-2019) for which I am a founding member, having managed projects and conducted consultancy services, having been Team Leader, I have an excellent track record in developing and reviewing high quality and timely analytical reports and scientific publications.</p>

### Specific experience in Africa:

Countries	From – To (Date)	Country	From – To (Date)
Ghana	2001- to date (resident)	Cameroun	September 2004
Burkina Faso	1971-to date(Citizen)	Cape Verde	Mai 2012; June 2015
Benin	2015- to date	Cote d'Ivoire	1994 to date
Gambia	July 2014	Kenya	December 2014
Morocco	February 2017	Senegal	Oct. 2010 to date
Egypt	December 2015	Nigeria	October 2022 to date
Niger	December 2022	Guinea-Bissau	March 2023
Liberia	May 2023	Sierra-Leone	May 2023

### Other Countries

Countries	From – To (Date)
Belgium, England, France, Germany, India, Italy, Poland, Spain, United States	2004-2022

## Professional experience

Date from - Date to	Location	Company & reference person <sup>1</sup> (name & contact details)	Position	Description
Aug 2022-present	All ECOWAS 15 countries	Mr Dabire Bayaornibe, Director of Energy and Mines ECOWAS Commission Email : <a href="mailto:bdabire@ecowas.int">bdabire@ecowas.int</a> Tel: +234 703 409 7047	Team Leader – Senior Expert in Energy Policy and Regulatory and Institutional Framework	<p>EuropeAid/139043/IH/SER/MULTI – Technical Assistance to ECOWAS for implementation of the 11th EDF Energy Governance in West Africa (AGoSE-AO). The main focus of the project is:</p> <ul style="list-style-type: none"> <li>- Adoption of the Regional Energy Policy and breakdown to National Action Plans</li> <li>- Adoption of the Regional Electricity Code</li> <li>- Creation of a regional energy database and an Energy Information System</li> <li>- Strengthening the Capacities of the Energy Stakeholders (TA support to ECOWAS, ERERA, WAPP on activities linked to the AGOSE programme)</li> <li>- Assist ECOWAS in communication and enhancing the visibility of AGOSE-AO</li> </ul> <p>My role as TL is to supervise and report the progress made under each component by the team of KEs and NKEs as well as support ECOWAS on any tasks related to the scope of the project.</p>
Feb. 2021-Dec 2022	Benin	Application Européenne de Technologies et de Services (AETS) working for the EDF Funded RECASEB, Benin Zakaria El Abid, Project coordinator <a href="mailto:zakaria.el-abid@aets-consultants.com">zakaria.el-abid@aets-consultants.com</a>	Team Leader	<p>EuropeAid/1402911H/SERIBJ: Support the Republic of Benin in acquiring a detailed atlas of the relevant renewable energy resources (solar, micro-hydro, wind, biomass, geothermal energy, tidal power) and to present the most attractive technologies for potential investors in line with national sector policies. My role as TL in this project is to:</p> <ul style="list-style-type: none"> <li>- lead the other experts of the team (key experts and non-key experts), in order to ensure that the deliverables are indeed in accordance with the expectations of the client, as well as with the requirements of the ToRs.</li> <li>- define clear tasks for the experts with regard to the expected technical content</li> <li>- prepare specific ToRs for the activities to be implemented within the framework of the project, if necessary by key and non-key experts</li> <li>- assist in the identification (if necessary) of qualified non-key experts to implement the activities and oversee their timely approval by the client</li> <li>- organize regular meetings with the experts to share on the challenges</li> <li>- liaise with the project coordinator and project director to ensure smooth implementation of the project</li> <li>- manage conflicts within the team of experts and with other key stakeholders</li> <li>- develop and oversee the implementation of the internship programme for 12 interns</li> </ul>

<sup>1</sup> The Contracting Authority reserves the right to contact the reference persons. If you can not provide a reference, please provide a justification.

April-Dec 2022		United Nations Environment programme Victor Béguerie, Evaluation Office of UNEP (EOU), Nairobi, Kenya <a href="mailto:victor.begueirie@un.org">victor.begueirie@un.org</a>	Energy project monitoring and Evaluation expert	GEF ID: 3876Promotion of Energy Efficiency in Public Lighting in Cote d'Ivoire, 2016-2020. Project Terminal Evaluation This project aimed at contributing to the achievement of the country's sustainable development objectives through the reduction of greenhouse gas emissions associated with the energy sector. The project has specifically focused on the promotion of energy-efficient products such as CFL and LED lamps. My role in this evaluation is to work closely with another evaluation expert and: <ul style="list-style-type: none"> <li>- design interview questionnaire and conduct the interviews for key stakeholders</li> <li>- review project reports and gather any relevant data on the project</li> <li>- analyse the data and draw conclusions with respect to the following evaluation criteria: Relevance, coherence, effectiveness, efficiency, impact and sustainability</li> </ul>
July 2015- Present	Burkina Faso	E.G. Energy Consult (EGEC)	Managing Director	EGEC strives to provide reliable, affordable, sustainable and innovative modern energy services, products and solutions to individuals, groups and organizations in the world at large and in Sub-Saharan Africa in particular. The vision of EGEC is to become a leading provider of sustainable and innovative modern energy services, products and solutions in Sub-Saharan Africa and beyond My role as Managing Director has been to <ul style="list-style-type: none"> <li>- effectively and efficiently develop and implement the strategic plan of the company</li> <li>- scout for jobs</li> <li>- develop proposals</li> <li>- ensure their smooth implementation</li> </ul>
August 2017 - July 2019	Ghana	The Brew-Hammond Energy Centre, Kwame Nkrumah University of Science and Technology (KNUST) The Provost, College of Engineering, Prof Kwabena Nyarko Tel: +233 (0) 208165515 Email: <a href="mailto:nyarko.k.b@gmail.com">nyarko.k.b@gmail.com</a>	Director	<ul style="list-style-type: none"> <li>- Created in 2009, The Brew-Hammond Energy Centre (TBHEC) is a novel institutional mechanism which allows researchers from different disciplines in the university to work on energy related issues of national and international relevance. TBHEC provides training, research and advisory services to public and private actors in energy technology, policy and management.</li> <li>- The centre is project-based and is financially autonomous.</li> <li>- My responsibilities as director included defining the strategic direction and budget of the centre, implementing policies and making decisions, raising and managing the resources of the centre, overseeing the day-to-day running of the centre and implementation of all projects, reporting to the management board, to the University authorities and to the project partners, calling and chairing fellows' meetings, developing new project proposals and responding to calls for proposals, etc.</li> </ul>

Jan 2018 - Dec 2021	Ghana	GIZ Tangmar Marmon, Cluster Coordinator, Energy and Climate Email: <a href="mailto:tangmar.marmon@giz.de">tangmar.marmon@giz.de</a>	Steering Committee member	GIZ Project "Market Entry into Renewable Energy and Energy Efficiency for the Productive Sector in Ghana". The achievement of the project were: <ul style="list-style-type: none"> <li>- Establishment of an Energy Service Centre at the Association of Ghana Industries. The centre is operational and has provided information on RE/EE investments to 312 interested companies;</li> <li>- 24 RE and 14 EE feasibility studies were prepared</li> <li>- Business strategies were presented to two public electricity utilities to assist the utilities promote RE technology</li> </ul> <p>The Steering Committee served as a sounding board for the project and had a primary responsibility of providing advice, guidance and direction to ensure the project's successful implementation.</p>
Dec. 2018- Dec 2019	Ghana	Arthur Energy Advisors (AEA) Mrs. Harriette Amisshah-Arthur, Executive Partner of AEA Tel: +233 (0) 244235929 e-mail: <a href="mailto:harriette@arthuradvisors.com">harriette@arthuradvisors.com</a>	Bilingual Energy expert and Technical advisor	Technical Assistance for the Implementation of the West African Solar Corridor, (ECREEE). <ul style="list-style-type: none"> <li>- I was an energy expert and technical advisor who worked with the AEA project team in the preparation of concept notes and full funding application for the implementation of the West African Solar Corridor for some member countries (Burkina Faso, Sierra Leone, Nigeria).</li> <li>- My role included discussing with the various ministries of energy and proposing projects ideas based on the country energy resources;</li> <li>- I also developed concepts notes and further full projects proposals meant to attract interest of investors.</li> </ul>
Feb. 2019- Jan. 2020	Ghana	KNUST, Kumasi, Ghana Prof. Robert Abaidoo, Director, Office of Grants and Research; <a href="mailto:abaidoorc@yahoo.com">abaidoorc@yahoo.com</a> ;Tel: (+233) 243164323	Team Leader	<ul style="list-style-type: none"> <li>- I was the Team Leader for the research project, Optimization of a Solar Tracking System for a Piloted Concentrated Solar Power.</li> <li>- I developed the research proposal, the methodology and the budget</li> <li>- I manage a team of 5 researchers and developed specific ToRs for each of them</li> <li>- I led the research team to carry out the implementation of the project</li> <li>- I co-authored a published paper out of this research.</li> <li>- I wrote the reports to the funding agency</li> </ul>

<p>Aug. 2018- Sept 2019</p>	<p>Ghana</p>	<p>Danish Energy Management (DEM) working for The World Bank  Morten Søndergaard for DEM and Aditya Alexander Lukas for World Bank; Email: <a href="mailto:mos@dem.dk">mos@dem.dk</a> and <a href="mailto:alukas@worldbank.org">alukas@worldbank.org</a>  Tel: +4522486607 (Morten) +12022129012 (Aditya)</p>	<p>Energy expert</p>	<p>Energy Efficiency Investment Opportunities in Africa: The World Bank has initiated a project in Ghana aimed at identifying a set of demand-side electricity efficiency investments opportunities in public buildings. The objectives of the project are: to provide a concrete demonstration of the potential for energy saving in public buildings, to reduce the financial burden on public sector budgets, to reduce the peak load on the country's electricity supply infrastructure, to reduce the carbon footprint of public buildings and to provide a demonstration of leadership by the public sector.</p> <ul style="list-style-type: none"> <li>- I was hired to provide technical assistance as a Ghanaian energy expert to the project</li> <li>- I contributed input to the analysis of stakeholders, technologies, financing mechanisms, markets and institutional analysis, as well as providing country-specific knowledge related to the energy sector in Ghana, as deemed necessary by the Team Leader</li> <li>- I prepared Country Notes for Ghana</li> <li>- I developed two investment proposals including recommendations for enabling conditions</li> </ul> <p>The deliverables were:</p> <ul style="list-style-type: none"> <li>- draft and final country note Ghana</li> <li>- contribute to the development of the Draft investment proposal for Ghana</li> <li>- participate in project meetings or events during the implementation of the contract, including but not limited to team meetings and presentation;</li> <li>- provide input to reports on request, ensuring that the project deliverables are provided within the project timelines.</li> </ul>
<p>June – Aug. 2019</p>	<p>Ghana</p>	<p>GiZ  Gideon Plange, Technical Officer, Energising Development (EnDev): Email: <a href="mailto:gideon.plange@giz.de">gideon.plange@giz.de</a>  Tel +233 540113375 / 209016786</p>	<p>Team leader, Energy project Monitoring and evaluation expert</p>	<p>GiZ has contracted a 4-member team, of which I was a member, to independently conduct a rigorous and critical evaluation of the “Energising Development” project (EnDev) in order to measure its success or otherwise, as the project draws to a close. EnDev Ghana had focused on economic development and energy access for small businesses until 2014, with emphasis on job creation. Since 2014, and in response to Ghana’s action plan under the Sustainable Energy For All (SE4ALL) initiative, the focus of EnDev Ghana was redirected to “Productive Use of Energy in Agriculture and Agro-processing” to increase productivity and profitability in small-scale intensive agriculture, linking energy to water and food security.</p> <p>My role in this evaluation was to</p> <ul style="list-style-type: none"> <li>- lead and guide the team</li> <li>- design interview questionnaire and conduct the interviews for key stakeholders</li> <li>- gather any relevant data on the project</li> <li>- analyse the data and draw conclusions with respect to the following evaluation criteria: Relevance, coherence, effectiveness, efficiency, impact and sustainability</li> </ul>

<p>June 2019- May 2022 March 2023</p>	<p>Ghana, Germany</p>	<p>German Federal Ministry of Education and Research (BMBF) Prof. Dr Katja Bender, Executive Director, International Centre for Sustainable Development; Bonn-Rhein-Sieg University of Applied Science; Email: <a href="mailto:katja.bender@h-brs.de">katja.bender@h-brs.de</a> Tel +49 2241 865 9660</p>	<p>Team Leader, KNUST<sup>2</sup> team</p>	<p>Research Project “Energy-Self-Sufficiency for Health Facilities in Ghana, EnerSheIF” This research project is being funded by the German Federal Ministry of Education and Research (BMBF) to the tune of Euros 1,991,000. The main objectives of the project are to (1) develop and implement context specific market-based hybrid PV-energy solutions for health facilities in Ghana and improve their reliability and integrability into the local energy system, (2) develop context specific options and recommendations to strengthen governance structures within the energy and health sector to accelerate the diffusion of market-based hybrid PV solutions in Ghana’s health sector (3) derive at an integrated understanding of the interaction of institutional and technological change in the health-energy nexus by strengthening interdisciplinary collaboration between technical disciplines (engineering) and social sciences (development economics) and (4) facilitate the adoption of PV-based energy solutions in Ghana’s health sector and inspect the intersectoral and international transferability of research results by engaging in a process of evidence-based learning with all relevant stakeholders</p> <p>My role as team leader has been to lead and provide guidance to the KNUST team to</p> <ul style="list-style-type: none"> <li>- carry out data acquisition and load measurement including support for site identification and preparatory workshop, installation and monitoring of measurement equipment, load measurements</li> <li>- conduct data analysis including data analysis and quality assurance, ensuring access to data for model development</li> <li>- disseminate knowledge through scientific publications</li> </ul>
<p>Jan-Dec 2019</p>	<p>Ghana, France</p>	<p>Embassade de France au Ghana, France-Ghana NKABOM Programme Dr Sonia Couprie Technical Advisor in charge of France-Ghana Higher Education Cooperation and Research; Email: <a href="mailto:sonia.couprie@expertisefrance.fr">sonia.couprie@expertisefrance.fr</a>; +233 507 14 91 27</p>	<p>Team Leader, Ghana team</p>	<p>This research deals with the analysis of the heat transfer enhancement (using passive methods) in flat-plate solar collectors (air or water) and their optimization for hot water production. The study is performed for a typical tropical climate (Kumasi, Ghana) as well as a typical temperate climate (Douai, France). The main goal is to passively increase the flow mixing in the solar collector ducts employing passive turbulators embedded in the flow (in a first step) and optimize the shape of these turbulators (in a second step) for heat transfer enhancement with low pressure drop penalty.</p> <p>In this research, I contributed in</p> <ul style="list-style-type: none"> <li>- defining the knowledge gap that led into this research topic</li> <li>- defining the methodology for conducting the research</li> <li>- gathering the data</li> <li>- performing the modeling and simulation</li> <li>- and analyzing the findings</li> </ul>

<sup>2</sup> Kwame Nkrumah University of Science and Technology

Sept. 2018-Sept. 2019	Ghana	Global Challenges Research Fund, UK through The Brew-Hammond Energy Centre Dr Eunice Akyeroko; Principal Investigator; Email: <a href="mailto:euniceaa@googlemail.com">euniceaa@googlemail.com</a> ; Tel +233 555241880	Director of the Brew-Hammond Energy Centre and Co-PI	<p>The Implementation of Bio-Rural Energy Scheme (IBRES) for Ghana project was a collaboration between the University of Nottingham, UK (lead partner), The Brew-Hammond Energy Centre (TBHEC-KNUST), Centre for Energy Environment and Sustainable Development (CEEDS, Kumasi), and the Cocoa Health and Extension Division of the Ghana Cocoa Board. IBRES was a research project which investigated appropriate technologies for the sustainable conversion of Cocoa Pod Husk (CPH) into electricity and other alternative energy sources. It was funded by the Global Challenges Research Fund, UK.</p> <p>My role as co-team leader was to oversee the successful implementation of the project, to review the team member work, to endorse reports and to approve payment. I was also specifically working on the work package which consisted at evaluating the level of local sourcing of labour and materials and public awareness of the energy systems. It involved designing a questionnaire, visiting and interviewing dominant cocoa growing communities to establish a practical approach for grouping them into viable co-operative groups.</p>
Aug 2017-July 2019	Ghana, Morocco, Germany, Poland	UN Environment (UNEP) Richard Munang; UN Environment Climate Change Coordinator for Africa; Email: <a href="mailto:richard.munang@un.org">richard.munang@un.org</a> ; Tel +254714888918 / +254733430460	Steering committee member of the Africa LEDS Project	<p>The Africa LEDS Partnership (AfLP) is a partnership of individuals, organizations and African Governments working to promote low-carbon, climate-resilient development to support poverty alleviation, job creation and environmental management in Africa. The Brew-Hammond Energy Centre (TBHEC, KNUST) as the lead partner, hosted the Secretariat of the AfLP and spearheaded the overall coordination of activities of the Partnership. NREL (National Renewable Energy Laboratory, USA) supported TBHEC. The activities and Secretariat services were funded by US State Department, Department for International Development (DfID), UK, and the European Commission.</p> <p>As Director of the Brew-Hammond Energy Centre,</p> <ul style="list-style-type: none"> <li>- I provided guidance and direction to the project coordinator and project team for the successful implementation of the project.</li> <li>- I reviewed and approved technical and financial reports of project countries and authorized transfer of funds</li> <li>- I negotiated with UNEP budget reallocation</li> <li>- I attended project steering committee meeting, examined and approved country reports</li> </ul>

Oct-Dec 2018	Ghana	GIZ Dennis Turkson; Technical Advisor, Energy Efficiency; Email: <a href="mailto:dennis.turkson@giz.de">dennis.turkson@giz.de</a> ; Tel +233243500064/+233556489190	Team Leader, Energy expert	<p>The Brew-Hammond Energy Centre (TBHEC), under the leadership of Ing. Dr Ramde, was contracted by GIZ to implement in Kumasi a project called 'Energy Efficiency for households and SMEs. The objectives of the project were to increase energy efficiency in households and SMEs by giving free energy efficiency advice directly to them. As part of the project, TBHEC trained 200 young men and women in energy efficiency and energy auditing, who subsequently spread their knowledge by conducting up to 6,000 walkthrough energy audits in households and SMEs in Kumasi.</p> <p>As team leader, I</p> <ul style="list-style-type: none"> <li>- developed the proposal in collaboration with my colleagues</li> <li>- negotiated the contract with GIZ</li> <li>- provided guidance and instructions to the project coordinator and to the entire project team for a successful implementation</li> <li>- helped in developing the walkthrough energy audits instruments</li> <li>- organize the kick-off ceremony which saw the participation of high dignitaries such as the regional minister of the Ashanti region, the traditional, religious and traditional leaders.</li> <li>- helped in the training of the 200 young men and women</li> <li>- conducted the evaluation of the project</li> <li>- wrote the technical and financial report</li> </ul>
Sept. 2013 – Dec 2017	Ghana	North Rhine Westphalia State, Germany Belinda Knorr, Project manager; Email <a href="mailto:belinda.knoerr@giz.de">belinda.knoerr@giz.de</a> ; Tel: + 49 0211 8689-182	Team leader	<p>I was the Team Leader for Solar Thermal and Air Conditioning for the project "Climate and Resource Protection for Sustainable Economic Development in Ghana". The objectives of the project were to (1) ensure a reliable, stable energy supply at KNUST through integration of renewable energies and to develop innovative measures for this purpose, (2) establish exemplary pilot and demonstration plants in the fields of renewable energies as well as energy and resource efficiency on KNUST campus in order to strengthen practice-oriented, applied tuition and research in these areas, (3) expand the competencies of University teaching staff and students.</p> <p>In collaboration with my team members, my role as a team leader was to:</p> <ul style="list-style-type: none"> <li>- design, install and demonstrate an indirect forced convection solar water heating system</li> <li>- design, install and demonstrate a solar absorption air conditioning system</li> <li>- develop training curriculum and conduct training on these demonstrations' plants</li> <li>- write reports to the funding agency</li> </ul>
March-May 2018	Ghana	Kwame Nkrumah University of Science and Technology, Rev. Professor Charles Ansah Tel +233(0)322060316 Email: <a href="mailto:provc@knust.edu.gh">provc@knust.edu.gh</a>	Energy audit expert	Conducted a walk-through Energy Audit of Students' Halls of Residence at Kwame Nkrumah University of Science and Technology and recommended energy savings and energy efficiency measures.

May 2017	Ghana	USAID -ASSESS Charles Nornoo, Chief of Party Tel: +233 (0) 540113073 e-mail: <a href="mailto:cnornoo@assess-wa.org">cnornoo@assess-wa.org</a>	Strategic Planning Technical Rapporteur Expert	I was designated to facilitate Power Africa Conference organize by USAID West Africa regional office. I participated fully in the meeting and performed the following: <ul style="list-style-type: none"> <li>- took comprehensive notes of proceedings of the meeting;</li> <li>- submitted to USAID-ASSESS a report, based on the notes taken, that precisely reflects the proceedings of the meetings;</li> <li>- revise and finalize the report based on reviewers' comments.</li> </ul>
Dec. 2016	Ghana	USAID -ASSESS Charles Nornoo, Chief of Party Tel: +233 (0) 540113073 e-mail: <a href="mailto:cnornoo@assess-wa.org">cnornoo@assess-wa.org</a>	West African Energy Expert	USAID/WA implemented a series of monthly meetings focused on learning and improving USAID/WA's understanding of regional institutions. The monthly sessions were meant to enhance USAID/WA's understanding of the mandate and operations of key regional institutions while providing high quality information for decision making and measured risk-taking on current and future regional interventions. The regional energy institutions were West African Power Pool (WAPP), ECOWAS Center for Renewable Energy and Energy Efficiency (ECREEE), ECOWAS Regional Electricity Regulatory Authority (ERERA). <ul style="list-style-type: none"> <li>- I wrote a brief working paper on WAPP was based on desk study review of relevant documents and remote interview with the WAPP Secretariat</li> <li>- I led the first learning session on 15th December, 2016 focused on the West African Power Pool (WAPP)</li> <li>- I provided information on WAPP, highlighting its mandate, key priorities and accomplishments, major donors and challenges limiting realization of its full potential</li> </ul>
May-Nov 2015	Benin, Cape Verde, Ghana	USAID -ASSESS Charles Nornoo, Chief of Party Tel: +233 (0) 540113073 e-mail: <a href="mailto:cnornoo@assess-wa.org">cnornoo@assess-wa.org</a>	Energy Expert	Ing. Dr Ramde was part of a two-member team who conducted the performance evaluation of USAID regional energy portfolio programs and projects which were implemented in West Africa between 2009 and 2014. <ul style="list-style-type: none"> <li>- Contributed technical input for executing the evaluation and provided input for assessing achievements and impact of the USAID/WA Energy program portfolio as well as the extent of the program's contribution to the objectives of the Power Africa initiative.</li> <li>- Assessed the relevance of the Energy program to regional partners, and the extent to which the program has contributed to the objectives of the regional Power Africa initiative for West Africa.</li> <li>- Based on analysis, provided information on major challenges faced by the energy program and suggested corrective actions to promote achievement of results.</li> <li>- Participated and contributed to working sessions to further analyze and triangulate information gathered related to energy production, efficiency and trade in West Africa. Participated in the review and provided timely input to team leader.</li> </ul>

August 2014- July 2016	Ghana	Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana Prof. Ahmad Addo; Director, The Brew-Hammond Energy Centre (2013-2015): Email: <a href="mailto:addoahmad@yahoo.com">addoahmad@yahoo.com</a> ; Tel: (+233) 244518346	Coordinator MSc/MPhil in Renewable Energy Tech.	Coordinator of the MSc/MPhil programme in Renewable Energy Technologies: As coordinator, I contributed to <ul style="list-style-type: none"> <li>- course content development</li> <li>- selection of candidates</li> <li>- scheduling</li> <li>- budgeting</li> <li>- and supervision</li> </ul> The course includes Energy Policy and Planning, Energy and Environment, Renewable Energy Project Analysis and Management, Solar thermal and solar PV, Wind power, Biogas, small hydro technology, Biofuels, etc
March 2012- November 2016	Burkina Faso, Cape Verde, France, Ghana	African Union Prof. Ahmad Addo; Director, The Brew-Hammond Energy Centre (2013-2015). Email: <a href="mailto:addoahmad@yahoo.com">addoahmad@yahoo.com</a> Tel: (+233) 244518346	Team Leader, Ghana	CSP4Africa Project: The objective of this project was to mainly develop a pilot cost effective concentrating solar power plants for electricity generation by designing and experimenting their components using local low-cost materials. This project started in June 2012 and lasted for 36 months. It was 74% funded by the African Union to the tune of 743, 096.16 €. The main beneficiary was the International Institute for Water and Environmental Engineering (2iE), Ouagadougou. Other partners in the project were The Brew-Hammond Energy Centre, KNUST, the ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) and SIREA, a private company in France. <ul style="list-style-type: none"> <li>- I contributed in developing the technical and the financial proposal</li> <li>- I served as the team leader and project coordinator in Ghana and contributed in <ul style="list-style-type: none"> <li>▪ the implementation of the projects</li> <li>▪ the supervision of postgraduate research</li> <li>▪ the writing of technical and financial reports to the African Union</li> <li>▪ further sourcing funds to continue the project after the AU funding ended</li> <li>▪ attending project steering committee meeting, examined and approved reports</li> </ul> </li> </ul>

April 2014	Ghana	African Network for Solar Energy (ANSOLE) Prof. Daniel Egbe, International Coordinator of ANSOLE Email: <a href="mailto:daniel.egbe@ansole.org">daniel.egbe@ansole.org</a> Tel: +4917620925862	Chairman of the Organizing Committee	The ANSOLE Regional scientific meeting for West Africa (ARMWA 2014) was held from 25 <sup>th</sup> to 26 <sup>th</sup> April 2014 at Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. About 50 renewable energy experts, non-experts, scientists, researchers, industry experts from Austria, Burkina Faso, Canada, Cote D'Ivoire, Ethiopia, Ghana, and Togo attended ARMWA 2014 and presented As chairman of the organizing committee, I <ul style="list-style-type: none"> <li>- undertook massive communication on the event</li> <li>- selected and negotiated the venue</li> <li>- received abstracts and papers from participants and organized their review</li> <li>- negotiated with a journal for the publications</li> <li>- played the role of a guest editor and got the accepted papers published in the African Journal of Science, Technology, Innovation and Development; Volume 7, 2015 - Issue 6</li> </ul>
September 2013- June 2014	Ghana, Gambia	UNIDO Lawrence Darkwah / Alois P. Mhlanga; Email: <a href="mailto:ldarkwah@gmail.com">ldarkwah@gmail.com</a> / <a href="mailto:A.MHLANGA@unido.org">A.MHLANGA@unido.org</a> ; Tel +233 246168726	RE Training Expert and Curriculum Developer	The purpose of the assignment was to build and strengthen technical capacity of relevant institutions within The Gambia with respect to renewable energy through both a "train-the-trainers" approach and through direct training. <ul style="list-style-type: none"> <li>- I assisted Dr Lawrence Darkwah, the international consultant, and developed training materials for both "Train-the-Trainers RE Expert Training" and "RE Curriculum Developers training" on solar thermal technologies.</li> <li>- I also facilitated the training in The Gambia.</li> </ul>
Oct. 2012- July 2014	Ghana	Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana Samuel Sackey; Head of Department, Mech. Eng (2012-2014) Email: <a href="mailto:sackeyism@yahoo.com">sackeyism@yahoo.com</a> Tel: 0242232239	Head of Section, Thermo-fluids and Energy Systems; Dept of Mech. Engineering	The Department of Mechanical Engineering is organized into sub-departmental sections: Thermo-fluids and Energy Systems Engineering; Design and Manufacturing Engineering; Applied Mechanics and Automobile Engineering and Industrial Engineering. I was the head of section, Thermo-fluids and Energy Systems Engineering. My responsibilities included <ul style="list-style-type: none"> <li>- assisting the Head of Department, Mechanical Engineering</li> <li>- leading, managing and developing the section</li> <li>- setting and advancing the Department's strategic plan in consistence with the University strategic plans,</li> <li>- developing new courses and improving the curricula</li> <li>- organizing the teaching and research agenda of the section and ensuring the highest levels of quality, integrity and ethics.</li> </ul>

June – Dec 2014	Ghana, Kenya	African Energy Commission (AFREC) Tel: +213 699251809 Email: <a href="mailto:Oueddoa@africa-union.org">Oueddoa@africa-union.org</a> Mr. Abdoulaye Oueddo, Senior Policy Officer	Team Leader	Ing. Dr Ramde led a team at The Brew-Hammond Energy Centre to develop two Technical Guides for the Design, Installation, Operation and Maintenance of (1) Solar PV-Based Mini-Grid for Rural Electrification in Africa and (2) Grid Connected Small Wind Farms in Africa. The technical guides provide a step-by-step guide on how to plan, design, install and operate a wind based and Solar PV-Based Mini-Grid power systems that will feed an Africa village (or group of villages) with electric power.
Oct. 2012 to date	Ghana	Department of Mechanical Engineering, KNUST The Registrar, College of Engineering, Lawyer Appiah Nkyi Tel: +233 (0) 208186138 Email: <a href="mailto:rappiahnkyi@yahoo.com">rappiahnkyi@yahoo.com</a>	Senior Lecturer	Ing. Dr Ramde has been lecturing the following modules Air conditioning and Refrigeration, Renewable Energy Conversion, Solar Thermal and solar PV Technologies, Wind energy Technology, Energy conversion and utilization, Thermodynamics, Heat transfer, Internal Combustion Engines, Fluids Mechanics, Turbo-machinery, Aerodynamics, Pneumatics and Hydraulics, Mechanical Engineering Laboratory. In addition he organizes and facilitates workshops for the students and other stakeholders in the energy sector.
October 2010	Ghana, Senegal	ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) Mr. Mahama Kappiah, Executive Director of ECREEE Tel +238 26 04630 +2389801317/Email: <a href="mailto:MKappiah@ecreee.org">MKappiah@ecreee.org</a>	Consultant: Energy expert	Ing. Dr Ramde co-wrote a discussion paper on “Potentials, Opportunities and Barriers for the Deployment and Usage of Solar Energy Technologies and Services in West Africa” for the ECREEE/UNIDO Regional Forum on the ECOWAS Solar Energy Initiative (ESEI) held in Dakar, Senegal from 18th to 21st October 2010. The paper highlighted the potentials, benefits, costs and feasibility of solar energy-based solutions for electricity generation, heating and cooling services and its deployment in the ECOWAS region.
Aug. 2008 - Dec 2011	Ghana, Burkina Faso, France	European Union Dr David Anipa; Project coordinator Tel: (+233) 208165502 Email: <a href="mailto:davidanipa@yahoo.com">davidanipa@yahoo.com</a>	Deputy project coordinator	Renewable Energy Education Project (REEP) I assisted in the following tasks <ul style="list-style-type: none"> <li>- Co-wrote the proposal for this project with award amount of 417, 528.57 Euros.</li> <li>- Conducted training programmes in renewable energy technologies for field engineers and technicians, undergraduate and postgraduate students, and employees of public institutions and private enterprises.</li> <li>- Implemented a distance learning Master’s programme in Renewable Energy Technologies</li> </ul>

Aug-Dec 2011	Ghana	UNIDO Patrick Nussbaumer: Department of Energy; Email: <a href="mailto:p.nussbaumer@unido.org">p.nussbaumer@unido.org</a> ; Tel +43 1 26026 3812	Team Leader and Energy expert	<ul style="list-style-type: none"> <li>- Ing. Dr Ramde coordinated and managed the assessments of national capacity for measuring and reporting on energy poverty in 5 countries in 5 West African countries (Burkina Faso, Gambia, Ghana, Senegal, Sierra Leone).</li> <li>- I provided guidance and ensured consistency in the treatment and presentation of the information throughout the 5 countries,</li> <li>- I organized and contributed to the review of the national assessments.</li> <li>- From the 5 national assessments, I then distilled the information into an overall report'</li> <li>- I also presented the findings of the report to an expert group meeting during which lessons learned, gaps identified, and possible ways forward were discussed</li> <li>- I co-authored a scientific paper<sup>3</sup> based on this work</li> </ul>
Jan-March 2008	Ghana	Ministère des Mines, des Carrières et de l'Énergie, Burkina Faso Projet MEPREB-European Commission Theresa Osei-Tutu; Consultant; Email: <a href="mailto:akos@thclr.com">akos@thclr.com</a>	Bilingual Energy expert	Under MEPRED (Mainstreaming Energy for Poverty Reduction and Economic Development) two consultants namely Abeeku Brew-Hammond and Theresa Osei-Tutu were hired in order to (1) review the modalities for aid and support for capital mobilization by a number of international banking groups, (2) review the existing financing means and their effectiveness, (3) formulate proposals for financing from public and private fund providers to improve access to Basic Energy Services for individuals and communities and (4) develop financing models for Basic Energy Services at the individual and community levels (purchase of equipment, leasing/outright sales, payment for services, notions of service companies, concessions, etc). I assisted the two experts as a bilingual energy expert who knows the energy landscape of Burkina Faso in conducting this consultancy work.
June-July 2007	Ghana	African Union Philippe Niyongabo; Head of Energy Division; Email: <a href="mailto:niyongabo@africa-union.org">niyongabo@africa-union.org</a>	Energy expert	Writing of a background paper titled "Biofuels Industry Development in Africa" for the African Union (AU)/ Brazil/ UNIDO High Level Seminar on Biofuels in Africa, 30 July – 1 August 2007, Addis Ababa, Ethiopia. The paper presented issues such as the available conversion technologies, the benefits of biofuels, global market trends, sustainable means of production, lessons to be learnt from Brazil and other countries like India and Malaysia, frameworks and policy guidelines for adoption by African Governments, etc.

<sup>3</sup> Ramde, Emmanuel W., Patrick Nussbaumer, and Morgan Bazilian. "Measuring and reporting on energy poverty: insights from West African countries." *African Journal of Science, Technology, Innovation and Development* 7, no. 6 (2015): 509-517.

Aug.- Dec 2004	Ghana Cameroun	GEF through Kumasi Institute of Technology and Environment (KITE) Ishmael Edjekumhene; Exec. Director; Email: <a href="mailto:iedjekumhene@kiteonline.net">iedjekumhene@kiteonline.net</a> Tel +233204368574 / +233244268574	Bilingual Energy expert	<p>With the support of some development partners such as GEF, UNDP, UNEP, AfDB, UNIDO, 11 francophone countries in Sub-Sahara Africa have put their efforts together in a project called « regional project capacity building in micro/mini hydropower and investment for the supply of basic services in rural area ». Different consultancy firms were contracted to conduct the technical, financial, environmental, legal and institutional feasibility studies. Kumasi Institute of Technology and Environment (KITE) was also contracted to perform quality control on all reports submitted by the various consultants. I was part of the three-member team working for (KITE) under this project.</p> <ul style="list-style-type: none"> <li>- As the team was conducting field data collection, conducting preliminary analysis and producing reports, I was reviewing the reports in collaboration with my team members and approving or rejecting them.</li> <li>- The review consisted of analyzing the appropriateness of the data acquisition, the validity of the data, the depth and soundness of the analysis.</li> </ul>
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## Some selected Publications

1. Eric Tutu Tchao, Simon Atuah Asakipaam, Yesueneagbe Atsu Kwabla Fiagbe, Bright Yeboah-Akowuah, **Emmanuel Ramde**, Andrew Selasi Agbemenu, Benjamin Kommey, An Implementation of an optimized dual-axis solar tracking algorithm for concentrating solar power plants deployment, *Scientific African*, Volume 16, 2022, e01228, ISSN 2468-2276; <https://doi.org/10.1016/j.sciaf.2022.e01228>
2. Saeed Abdul-Ganiyu, David A. Quansah, **Emmanuel W. Ramde**, Razak Seidu, Muiyiwa S. Adaramola, Techno-economic analysis of solar photovoltaic (PV) and solar photovoltaic thermal (PVT) systems using exergy analysis, *Sustainable Energy Technologies and Assessments*, Volume 47, 2021, 101520, ISSN 2213-1388, <https://doi.org/10.1016/j.seta.2021.101520>
3. Saeed Abdul-Ganiyu, David A. Quansah, **Emmanuel W. Ramde**, Razak Seidu, Muiyiwa S. Adaramola, Study effect of flow rate on flat-plate water-based photovoltaic-thermal (PVT) system performance by analytical technique, *Journal of Cleaner Production*, 2021, 128985, ISSN 0959-6526, <https://doi.org/10.1016/j.jclepro.2021.128985>
4. Vinci de Dieu Bokoyo Barandja, Bienvenu Magloire Pakouzou, **Emmanuel Wendsongré Ramdé**, Jean M'boliguipa, Mamoudou Saria, Martial Zoungrana, Issa Zerbo, Modeling the response of an illuminated polysilicon solar cell under the influence of radio waves, a 3D approach, *Energy Reports*, Volume 7, 2021, Pages 2094-2100, ISSN 2352-4847, <https://doi.org/10.1016/j.egyr.2021.04.015>
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9. Abdul-Ganiyu, S.; Quansah, D.A.; **Ramde, E.W.**; Seidu, R.; Adaramola, M.S. (2020) Investigation of Solar Photovoltaic-Thermal (PVT) and Solar Photovoltaic (PV) Performance: A Case Study in Ghana. *Energies* **2020**, *13*, 2701.
10. Fiagbe Y. A. K. and **Ramde E. W.** (2018) Coefficient of friction of components of [municipal](#) solid waste; *wjert*, 2019, Vol. 5, Issue 3, 10-19.
11. Dioari Ulrich Combari, **Emmanuel Wendsongré Ramde**, Idrissa Sourabie, Martial Zoungrana, Issa Zerbo, and Dieudonné Joseph Bathiebo, "Performance Investigation of a Silicon Photovoltaic Module under the Influence of a Magnetic Field," *Advances in Condensed Matter Physics*, vol. 2018, Article ID 6096901, 8 pages, 2018. <https://doi.org/10.1155/2018/6096901>
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23. **Ramde E. W.**; Ato-Quansah D.; Donkor E.; Financial modelling and Potential savings of Solar Water Heaters in the hotel industry: case study of Ghana; *Colloque International Francophone portant sur l'Energétique et la Mécanique (CIFEM)*; Cotonou, 2018
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