Bachir Ismael Ouédraogo, PhD

09 BP 678 Ouagadougou 09
Phone +226 77572060
Nationality: Burkinabe
Date of birth: 25 June 1979
Email: bachirismael@gmail.com

PROFILE

- Expert in economics of renewable energy and climate change risk and policy analyst with a first-class academic background.
- Long experience in developing and optimizing hybrid renewable energy production configuration, (PV / Wind / Hydrogen / Biomass / Diesel motor/ batteries) based on levelized cost of electricity (LCOE), net present cost, internal rate of return and payback time for economic feasibility
- More than ten years in policy making for the energy and mining sector with a wide range of policy for renewable energy development in developing countries.
- Expertise in digital technology and eLearning
- Quick to grasp new ideas and concepts, and to develop innovative and creative solutions to problems.
- Able to work well on own initiative and can demonstrate high levels of motivation required to meet the tightest deadlines.
- Even under significant pressure, possesses a strong ability to perform effectively to achieve organization's goals and benefits.

EDUCATION AND QUALIFICATION

2008- 2012 University of Manchester, United Kingdom

PhD Economics of Renewable Energy

PhD Thesis: Financial impact of hybrid renewable energy – diesel generator system on the built environment in the context of climate change for Burkina Faso.

2007- 2008 University of Maastricht, Netherlands

Master of Public Policy and Human Development
Specialization: Social Policy Financing

Courses taken include Public Economics, Macroeconomics, Econometrics, Social Budgeting, Financing Social Protection and Actuarial.

Thesis: Can Burkina Faso afford a universal non-contributory pension scheme?

2005-2006 University of Ouagadougou, Burkina Faso

Master's degree in Business and Management

Courses taken include Microeconomics, Macroeconomics, Econometrics, Theory of Finance, Project Management, Business Law and Philosophical Issues in Economics.

Thesis: Sub- regional Economic Integration: Example of West African Economic and Monetary Union (WAEMU)

2004-2005 University of Ouagadougou, Burkina Faso

Bachelor's degree in Business and Management

Courses taken include Marketing, Applied Statistics, International Economics, Microeconomics, Macroeconomics, Econometrics, Social Accounting and Public Finance

2002-2004 University of Ouagadougou, Burkina Faso

DEUG II (2-year undergrad degree) of Economics and Management

ACADEMIC AWARDS

2008
Awarded a four-year **Dorothy Hodgkin Scholarship** to conduct PhD research at the University of Manchester

2007
One year scholarship from the **Willemien Halkes Organisation (WHO)** in Netherlands

WORK EXPERIENCE

April 2022 till now: Senior Advisor Sahel and Power Africa at the Tony Blair Institute

February 2021 – February 2022: Minister of Energy, Mines, and Quarries

Responsibilities: Organise and facilitate access to Burkina Faso geological and mineral resources for sustainable economic growth, equal benefit, and prosperity to all Burkinabe citizens: formulate policies and legislations that effectively regulate activities in mining sectors; generate knowledge and information on resources and provide services to stimulate investment for sustainable economic development and benefit to all.

Achievements

- Local content implemented with impressive proven positive impact on the economy of Burkina Faso
- Implemented "Mine to Road Project" a mechanism of investment for mines to construct paved road to connect the mine to nearest city. That improve transportation and trade
- Increased gold production by 15%
- Reform in the artisanal sector (gold panning)
- Reform in the environment protection
- Reduction of electricity cost for the mining sector
- Increase electricity access using the potential of the mining sector
- Increasing electricity access in rural area through connection with mine power

February 2018 – February 2022: Minister of Energy

Responsibilities: Provide a comprehensive planning process of the energy sector. Develop and implement the government energy policy and the sector regulation. Ensure that energy is available in its various forms, to support the sustainable development. Engage in electricity trade by exchanging about 250MW electric power with neighbouring countries, and attract international capital for investment in this field, especially the generation, transportation, and distribution of electricity. Promote scientific research, capacity building and use of local energy sources.

Achievements

- Consolidated and strengthened the strategic thinking and governance practices
- Strengthened relations with Ecowas and international cooperation such World Bank, AfDB, IRENA, AFD etc.
- Developed a legal and regulatory framework for the energy sector to attract private sector investment

- Achieving the security of supplying electricity by reducing the gap of 150MW between the demand and the offer of electricity
- Increased electricity access from 20% to 45% and from 3% in rural area to 18% by increasing electricity production from 325MW to 700MW
- 1.5 million LED lamps distributed
- 50 000 solar streetlamps implemented
- MCC project has been conducted successfully
- Set up the National Renewable Energy Agency (ANERE)
- Reorganised the Rural Electrification Agency (ABER) resulting in about 552 new villages electrified
- Increased the contribution of natural gas in the total energy mixture and introducing LNG in electricity production
- Increased the contribution of renewable energy to the total energy mix with about 500MW solar project with a 200MW in PPP
- Solar roof top project + Solar Backup project implemented successfully
- Rationalized energy consumption and improved efficiency in all sectors
- Developed a database on energy use, technologies and investment opportunities.
- Facilitated the implementation of research and development in the energy sector.
- Implemented successfully the EV (Electric Vehicles) project combined with solar energy charging system
- Grid electricity connexion for 250 000 household using loan mechanism
- Designed and implemented successfully the YELEEN project that aims at developing photovoltaic production and facilitating the integration of this energy into the grid through PV power plants (42MW near Ouagadougou, 6 MW in Dori, 2 MW in Diapaga and 1 MW in Gaoua.) The YELEEN project also promoted decentralized electricity production from solar energy through mini-grids (100 mini grids) and individual solutions (100 000 SHS).

February 2020 – April 2021: Chair designate of the 19th IRENA Council Meeting (Abu Dhabi UAE)

Facilitate collaboration among members in implementing action and ensuring delivery for our common objectives. Share knowledge and experiences and consider how we can best support countries in creating enabling frameworks that attract investments and accelerate the energy transformation. Discussions at the Assembly reflected the priorities highlighted by members, spanning the developments and innovations in technology, policy, and investments.

February 2020 – Present: Chair of the Global High-level Forum on Energy Transition at the International Renewable Energy Agency (IRENA) Abu Dhabi

September 2019: Chair of the Desert to Power initiative

This initiative was launched in Ouagadougou on the 13 September 2019 with the effective participation of all G5 Sahel head of states. The objective of this initiative supported by the African Development Bank is to develop about 10 000MW solar projects throughout the Sahel region. This initiative aims at providing electricity for 250 million people with 90% connected to a standalone solar system.

January 2015 to February 2018: Coordinator of the ECOWAS Renewable Energy Entrepreneurship Support Facility

Responsibilities: Provide mentorship and technical support to existing entrepreneurs who are citizens of ECOWAS and who are based in ECOWAS, by providing them with the necessary advisory expertise upon request and refining entrepreneurs' solar energy proposals to bankable levels for possible funding by financial institutions.

Achievements

- Managing the facility
- Enable small and medium entrepreneurs to assess the business potentials of PV projects, develop business plans and loan requests, and to successfully manage and maintain their businesses.
- Trainings for renewable energy entrepreneurs
- Promote renewable energy industry in the ECOWAS region
- Increase the confidence of financial institutions in RE technologies and improving the sustainability of RE projects and investments. This will be achieved through training of branch managers and business development managers of financial institutions active in the ECOWAS region.
- Promote the collaboration with the International Renewable Energy Agency (IRENA)

February 2013 to January 2015: Country manager of TE Strake

Responsibilities: Establish and promote, lead, and manage the TE Strake office in Burkina. Set the ground for a solar assembly line company with a potential production of 50MW per year

Achievements

- Extensive research on Burkina Faso's renewable energy potential.
- Explore regional market and potential for renewable energy
- Established in the process a highly interesting business model
- Organise business trips between Dutch and Burkinabe businessmen
- Meeting with decision makers in Burkina Faso to seek collaboration between Burkina Faso government and Dutch companies
- Business plan for a local solar assembly factory

August 2013 to present: Lecturer at The International Institute for Water and Environmental Engineering (2iE)

Responsibilities: Teaching Economics and Finance of renewable energy and Electricity tariffication.

Achievements

- Assess the levelized cost of electricity for the Flexy project and CSP4Africa project.
- Design project for electricity affordable in rural areas
- Technical and economical optimisation for hybrid off grid systems in rural remote areas.
- Poverty alleviation for rural population trough access to electricity
- Assess the economic development of rural areas due to access to electricity
- Promote sustainable development
- Pricing and deregulation of electricity sector
- Teaching
- Supervise and assist PhD candidates

February 2009 – April 2012: Deputy Manager of the Zero Carbon store Project (ZEST) financed by TESCO, UK

Responsibilities: Model an optimized hybrid renewable energy system for a Tesco zero carbon supermarket. Design a conceptual and detailed store using IES VE program to simulate energy consumption in different weather conditions. Assist the manager to lead and coordinate the group of engineers working for the project. Coordinate the different aspect of the project.

Achievements

- Assessed the techno-economic aspects of a stand-alone renewable power system with batteries and grid as backup solution
- Design and simulate a hybrid (Wind turbine/PV array) power optimization model
- Identified economic solution that would meet a given energy consumption load using the net present cost and project life cycle
- Assess the technical feasibility and economic viability of renewable energy technology in the context of rising fuel prices and climate change.
- Calculate the savings/loss that hybrid renewable energy supply system would have in comparison to other types of energy production system using the payback time, the return on investment (ROI) and internal rate of return (IRR)
- Designed an outline model of a zero CO_2 emissions store.
- Outlined the technologies, properties and design innovations required to build a Zero Energy Store
- Assess climate change impact on stores future energy consumption

January 2009 – July 2012: Graduate Teaching Assistant at the University of Manchester, UK

Responsibilities: Help design and teach the Manchester Sustainable Green City project course. Evaluate and grade students' class work, assignments, and papers. Initiate, facilitate and monitor classroom discussions

Achievements

- Explore the Clean Development Mechanism
- Assess renewable energy and green economics impact in Manchester
- Evaluated strategies to identify residents affected by fuel poverty in Greater Manchester

- Identified indicators used to effectively quantify the impact of cold and damp conditions on health and quality of life for community members facing fuel poverty
- Designed an assessment mechanism to quantify health risks associated with fuel poverty
- Proposed strategies to identify and refer hard-to-reach residents who may be at risk of experiencing fuel poverty
- Supervised student paper and poster sessions
- Promoted sustainable behaviour and awareness throughout the campus
- Developed Sustainable transport project that combined environmentally friendly transportation systems as well as efficient and cost-effective methods of access
- Investigated the implementation of the Energy Saving Trust (EST) AWARM project (The Affordable Warmth Access Referral Mechanism) which provides heating and isolation grants to people living in fuel poverty.

September 2011 – Present: Founder and Coordinator of the NGO OPEN Education
https://openeducation-bf.com/

Responsibilities: Promote digital technology and eLearning. Free quality education for all through online free access to learning materials and software that will improve overall education level in Burkina Faso.

Achievements

- Free documentation for primary and high school students on the website
- Offline version of the website for rural and remote areas where electricity is missing
- 10 Digital libraries powered by solar energy constructed in 10 different cities
- Collaboration with 54 catholic high schools
- Offline Wikipedia for schools
- Promoting quality education for all through IT
- Fundraising to support OPEN Education
- Distribution of Wakawaka solar lamps for schools in rural areas
- Digital development

Skills

Software / Computer skills

IES Virtual Environment, CASAnova, HOMER, MS Word, Excel, Power Point, Access, SPSS, STATA, MATLAB, SYSCOA, SAGE, SAP, LaTeX, Fortran,

Personal skills

Teamwork – Problem-solving – Commitment – Flexibility – Communication – Organisation - Research and data analysis.

Languages

French Native / First Language

English	Very fluent
Dutch and Spanish	Basic

Publications in scientific journals

Bachir Ismael Ouedraogo, Daniel Yamegueu: Techno-economic assessment of solar photovoltaic integration into national grids: A case study of Burkina Faso, Energy Science and Engineering 2019;7:1458–1468

Bachir Ismael Ouedraogo, S.Kouame, Y.Azoumah, D.Yamegueu: Incentives for rural off grid electrification in Burkina Faso using LCOE, Renewable Energy Volume 78, June 2015, Pages 573-582

Bachir Ismael Ouedraogo, G.J. Levermore, J.B. Parkinson: Future energy demand for public buildings in the context of climate change for Burkina Faso, Building and Environment, Volume 49, October 2011, Pages 270-282

Bachir Ismael Ouedraogo, G.J. Levermore, J.B. Parkinson: Design of power optimization systems for remote cities in Burkina Faso, Energy for Sustainable Development, November 2011

Bachir Ismael Ouedraogo, G.J. Levermore, and J.B. Parkinson: Adobe thermal performance and future energy demand with climate change in Burkina Faso, Building and Environment, March 2012

Bachir Ismael Ouedraogo (2010), Financial impact of renewable energy and energy efficiency in the building sector, Sustainable future, University of Birmingham

Bachir I Ouedraogo (2010), Biomasse et énergies renouvelables dans le contexte des changements climatiques au Burkina Faso, Réseau des OSC pour la protection de l'environnement au Burkina Faso

Bows, A., Anderson, K., Shrestha, R., and Ouedraogo, B.I., (2009), Annex 1 vs non-Annex 1 emissions – implications for global greenhouse gas trends, 8th International Carbon Dioxide Conference, September 13-19, Jena, Germany

Bachir I Ouedraogo (2008), Can Burkina Faso afford a universal non contributory pension scheme? Elektronische Scripties UM

Trainings and seminars

15th March 2012: Conference, Renewable UK Wave and Tidal Energy 2012, Edinburgh, UK

20 – 22 September 2011: Conference, Renewable Energy Technology, Washington Convention Centre, Washington USA
22 – 24 Juin 2011: Conférence, Power and Energy System, Crete, Grèce

27 Juin – 2 Juillet 2010 : Conference et exhibition, Renewable Energy 2010, Pacifico Yokohama, Japon

6 – 7 Mai 2010: Seminar on Sustainable future, Université de Birmingham, UK

20 – 21 Mai 2009: Conference, 8th Annual Southern Bio Products and Renewable Energy Conference, Jackson Mississippi, USA

UK Carbon Trust project: Higher Education Carbon Management program for the University of Manchester, Student representative November 2009 to February 2010

Member of Burkina Faso government delegation for climate change negotiation at the Copenhagen Summit COP15, December 6th – 18th December 2010

Manchester University Shape of Science Symposium 2010 – Organization committee, in charge of the poster call, February – July 2010

15th Annual International Sustainable Development Research Conference: Taking up the Global Challenge, Utrecht Netherlands, July 5th - 8th, 2009

Climate Change and Urban Vulnerability in Africa – Member of Burkina Faso research group

Referees

Professor Geoff Levermore

Chair of the CIBSE Weather Panel

Pariser Building M13 9PL Manchester

geoff.levermore@manchester.ac.uk

Lassina Zerbo

Former Prime Minister of Burkina Faso

lassina.zerbo@ctbto.org

+43 699 14596167