

Call for application - Doctoral Students

The Brew Hammond Energy Centre, Kwame Nkrumah University of Science and Technology (KNUST) and the African Institute for Sustainable Energy and Systems Analysis (AISESA) invite applications from Ghanaian MPhil graduates to undertake research on energy, climate, and development challenges in Africa, with a particular focus on access to Finance and Technology for the Energy Transition in Africa.

Introduction

The African Institute for Sustainable Energy and Systems Analysis (AISESA) is a pan-African research institute established in response to a defining challenge: how African countries can expand energy systems that support inclusive development, industrialisation, and resilience while navigating climate constraints and structural global inequalities.

Committed to interdisciplinary collaboration, AISESA's work is organised around five research clusters: Clean Energy Pathways; Implementation Approaches; Policy and Governance; Finance and Technology; and Institutions, Skills and Capacity, supported by cross cutting themes on powering livelihoods, inclusive industrialisation, and urban transitions.

As an African led and African anchored institute, AISESA seeks to strengthen knowledge sovereignty by placing African institutions and scholars at the centre of agenda setting, theory building, and policy engagement. The doctoral programme is designed to develop a new generation of African researchers whose work is theoretically grounded, methodologically robust, and engaged with real policy and implementation challenges.

Key details of the programme

Research focus: Energy, climate, and development challenges aligned with AISESA research priorities

Thematic Alignment: Finance and Technology

Location: The Brew-Hammond Energy Centre, KNUST

Duration: up to three years




This call is linked to AISESA's research area on finance and technology for Africa's energy transition. This research area focuses on understanding how financial systems, investment structures, and technological innovation can support the large-scale deployment of low-carbon energy solutions across the continent. The work aims to generate evidence that helps mobilize sufficient and sustainable capital for Africa's energy transformation while ensuring that investments contribute to equitable development outcomes.

The research examines the financial and technological ecosystems required to accelerate energy transitions in African contexts. It explores the role of public financing incentives, blended finance mechanisms that mobilize private capital, and the financing needs of emerging energy and climate technologies. By analyzing both the successes and limitations of existing approaches, the research seeks to identify practical pathways for scaling investment in renewable energy, energy access solutions, and low-carbon technologies.

Through interdisciplinary approaches drawing on economics, finance, policy analysis, and technology studies, this research area aims to produce knowledge that can support investors, policymakers, and practitioners in overcoming the financial and structural barriers that currently constrain investment in Africa's energy future.

PhD Modality and Commitment

Doctoral research within AISESA is expected to engage with policy dilemmas, institutional constraints, or implementation challenges facing African countries. Candidates will align their work with AISESA's thematic cluster finance and technology and while engaging across themes reflecting the interconnected nature of energy and development challenges and are expected to engage critically with dominant narratives through political economy and related analytical traditions, and design research that speaks to the needs of policymakers and practice communities. PhD candidates will be based in African institutions and embedded within the AISESA research ecosystem with active participation in joint research activities, workshops, seminars, and collective outputs is expected. Doctoral research should be grounded in strong qualitative, quantitative, or mixed methods, supported by careful data collection and transparent analysis.



Candidate Profile

Applicants should hold a postgraduate degree (MPhil) in a relevant discipline, including political science, human geography, economics, engineering, environmental sciences, or related fields. Candidates should demonstrate strong academic performance, familiarity with qualitative and or quantitative research methods, and a clear interest in energy, climate, and development challenges in Africa. Applicants must be citizens of a recent graduate of a Ghanaian University and no more than 30 years.

Application Requirements

Applicants must submit the following:

- A Curriculum Vitae detailing academic background, research experience, and relevant professional engagement
- A personal statement outlining motivation for pursuing a PhD within AISESA and alignment with its mission
- A short project proposal (3 to 5 pages) including:
 - o the development or policy problem to be addressed
 - o key research questions and their relevance
 - o proposed methodological approach
 - o an indicative research timeline of up to three years

The candidate will focus on the financial and technological systems required to support sustainable energy development and low-carbon transitions in Africa. Including examine the barriers that constrain investment in renewable energy and other climate technologies on the continent, investor risk perceptions, regulatory and institutional constraints, financing structures, and the availability of appropriate financial instruments. The candidate will analyze the role of public financing incentives, blended finance mechanisms, and innovative financing approaches in mobilizing capital for energy technologies.

The candidate will develop analytical frameworks (qualitative and/or quantitative) to deepen understanding of how finance and technology ecosystems interact to shape the deployment of energy solutions across African contexts. These frameworks may be applied through methods such as financial analysis, comparative studies, benchmarking approaches, or stakeholder engagement to identify investment gaps, financing risks, and opportunities for scaling energy technologies. Finally, the research will assess how financial instruments, investment ecosystems, and technology innovation systems can be strengthened to mobilize capital more effectively and accelerate energy access and the deployment of clean energy solutions across the continent. Proposals should demonstrate clear problem framing and analytical ambition, while remaining open to refinement through engagement with AISESA clusters, supervisors, and policy partners.