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2025

EVIDENCE FOR INFORMING SCALING AND IMPACT YOUTH AND WOMEN-LED CLEAN ENERGY ETERPRISES (EVI-SICEE) IN AFRICA

Stakeholder Validation and Gender in Clean Energy Workshop Report

Prepared By

EVI-SICEE Project Team, Uganda

Executive Summary

The Evidence for Informing Optimization and Scaling of Youth and Women-Led Clean Energy Enterprises (EVI-SICEE) project is a multi-country initiative implemented by the African Centre for Technology Studies (ACTS) in partnership with Makerere University Business School (MUBS) and supported by the International Development Research Centre (IDRC). The project seeks to understand and address systemic barriers facing women and youth entrepreneurs in the clean energy sector across Uganda, Kenya, Malawi, and South Africa.

The EVI-SICEE Stakeholder Workshop brought together over 60 participants from across East Africa and internationally to discuss evidence-based findings on women- and youth-led clean energy enterprises in Uganda. The two-day event combined research validation, policy dialogue, entrepreneurial insights, and capacity building on gender mainstreaming in the clean energy sector. Specifically, the workshop presented and validated research findings from Uganda's clean energy mapping study, facilitated knowledge exchange among diverse stakeholders in Uganda's clean energy ecosystem, identified scalable best practices and business models for youth- and women-led enterprises, and built capacity on gender-responsive approaches to clean energy entrepreneurship.

Key Outcomes :

Capacity building on gender equality frameworks and communication strategies

Identification of systemic barriers including limited financing, weak technical capacity, and policy gaps

Showcase of innovative business models and best practices from entrepreneurs

Commitment to collaborative action across government, private sector, and development partners

Workshop at a Glance

60+ Participants (Local + International)

1,318 Survey findings from clean energy enterprises validated

Attendance Overview

Inclusive Knowledge Exchange Across Academia, Government, Industry, and Civil Society

The diversity of representation underscored the multi-stakeholder nature of the workshop and reflected the complexity of the clean energy transition in Uganda, they embodied the quadruple helix model of innovation spanning academia, government, industry, development partners and civil society making the workshop a truly inclusive platform for knowledge exchange, validation, and co-creation

Development Partners & Civil Society

- SNV
- Mercy Corps
- IDRC
- Mbuya Community Development Network

Government

- Ministry of Energy and Mineral Development (MEMD)
- Uganda National Bureau of Standards (UNBS)
- Uganda Energy Credit Capitalisation Company (UECCC)

Industry Associations

- National Renewable Energy Platform (NREP)
- Uganda National Alliance on Clean Cooking (UNACC)
- Women Entrepreneurship Forum Africa (WEFA)

Private Sector

- Sendea Group
- ECOCA
- SWEDO
- Master Cookstoves
- Masupa enterprises
- Ecovessel Innovations
- Mwezi Green Charcoal Uganda
- Khamza Energy

Academia

- Makerere University Business School (Uganda)
- Africa Centre for Technology Studies (ACTS, Kenya)
- KCA University (Kenya)
- Mzuzu University (Malawi)
- The University of Johannesburg (South Africa)
- Western University (Canada)
- Kenya Climate Innovation Centre (KCIC), advisory members from Denmark and the United Kingdom

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Day One: Stakeholder Validation Workshop

Opening Session

Welcome Remarks - Dr. Geoffrey Nkuutu, Deputy Dean, Faculty of Graduate Studies and Research, MUBS

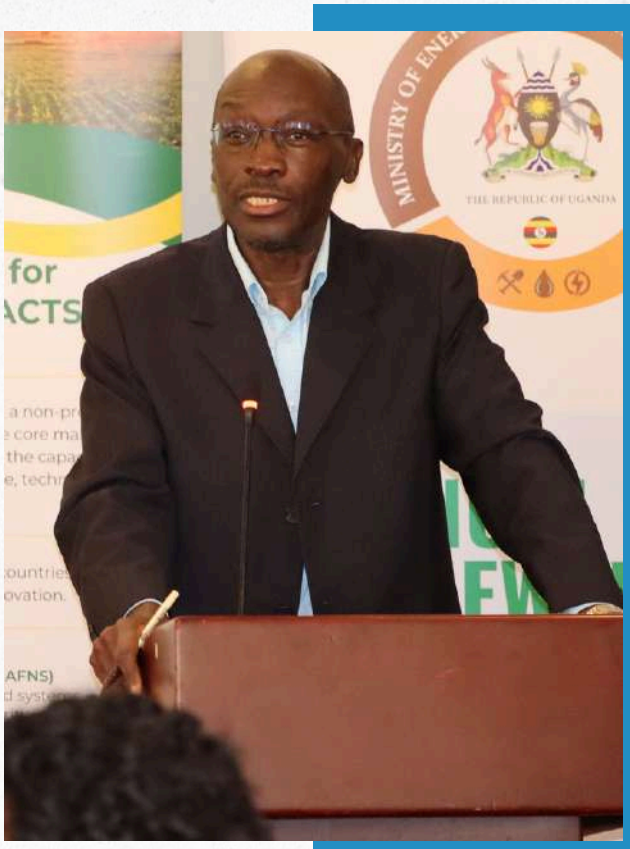
Dr. Nkuutu welcomed participants and emphasized the importance of bringing together diverse stakeholders to validate research findings and chart a path forward for inclusive clean energy entrepreneurship in Uganda.

He highlighted that the workshop represents a critical step in translating research into actionable policy and practice.

He introduced key partners present:

- **International:** IDRC (Canada), Western University (Canada), University of Johannesburg (South Africa)
- **Regional:** ACTS (Kenya), Kenya Climate Innovation Center, KCA University (Kenya), Mzuzu University (Malawi)
- **National:** Government agencies, entrepreneurs, development partners, and civil society organizations

Remarks by Dr. Paul Okwi - International Development Research Centre (IDRC)



Dr. Okwi commended MUBS and ACTS for their leadership in implementing this transformative project. He emphasized that the clean energy transition represents not just an environmental imperative but a significant economic opportunity, particularly for youth employment and enterprise development.

Remarks Summary:

- Economic Opportunity: Micro and small enterprises (MSEs) contribute over 40% of Uganda's GDP and stand to benefit significantly from the clean energy transition
- Youth Potential: Despite abundant potential, youth remain underutilized in the energy sector.
- Systemic Challenges: Heavy import dependence, quality assurance gaps, policy fragmentation, and skills deficits must be addressed as opportunities for innovation rather than insurmountable obstacles.
- Strategic Priorities: Green finance, rural inclusion, skills development, technology adoption (including AI), and supportive policy frameworks
- IDRC's Commitment: Continued support for research partnerships focused on climate finance, care economies, skills development, and local solution generation.
- He concluded by emphasizing that an inclusive green energy transition is essential for building resilient, equitable economies. "Knowledge is power," he noted, "and without evidence-based knowledge, meaningful transformation is impossible."

Remarks by Dr. Brian Isabirye - Commissioner, Energy Resources Department, Ministry of Energy and Mineral Development

Dr. Isabirye, a proud MUBS alumnus, expressed appreciation for the project's focus on generating policy-relevant insights.

He highlighted a critical but often overlooked dimension of the energy transition: the livelihood implications for communities dependent on traditional energy value chains.

Remarks Summary:

- Charcoal Value Chain: Provides livelihoods for thousands of Ugandans, with women comprising nearly 75% of roadside charcoal vendors.
- Just Transition Imperative: Any shift toward cleaner energy must be livelihood-sensitive and socially inclusive.
- Policy Integration: The project's findings should inform policies that balance environmental goals with economic security for vulnerable groups.
- He urged stakeholders to use the research as a foundation for "livelihood-centered transitions" that ensure no one is left behind.

Remarks by Prof. Moses Muhwezi - Principal, Makerere University Business School

Prof. Muhwezi welcomed participants and affirmed MUBS's commitment to research that bridges theory and practice.

He emphasized that quality research must be methodologically rigorous, contextually relevant, and transformative in its impact.

Highlights of the remarks:

- Partnership Value: Recognized ACTS for entrusting MUBS as a partner, formalizing collaboration in July 2024 and acknowledged the Faculty of Graduate Studies and Research (FGSR) for their commitment.
- Tangible Benefits: The partnership has yielded research scholarships, staff development opportunities, and platforms for regional collaboration.
- Call to Action: Encouraged stakeholders to take the findings seriously and transform insights into high-impact interventions
- He concluded by urging all participants to ensure research outcomes become public goods that inform evidence-based policymaking and community development.

Project Overview

Dr. Ann Kingiri, Lead Investigator, African Centre for Technology Studies (ACTS)

Dr. Ann Kingiri welcomed participants and expressed her appreciation to the International Development Research Centre (IDRC), under the leadership of Dr. Paul Okwi, for funding the initiative.

She acknowledged the presence of dignitaries and partners from South Africa, Malawi, the Netherlands, Canada, and Kenya, as well as representatives from ACTS and collaborating institutions.

Dr. Kingiri provided an overview of the EVI-SICEE project, emphasizing its focus on understanding how women and youth can effectively participate and thrive in the clean energy entrepreneurship ecosystem.

Explained that the study seeks to understand challenges within the sector and explore how successful approaches can be scaled and replicated across different contexts.

She outlined that the projectis structured into several work packages, implemented through a research-based, transdisciplinary approach to generateevidence from four participating countries; Uganda, Kenya, Malawi, and South Africa.

The project also prioritizes capacity building for young scholars and supports business and incubation hubs that help enterprises grow from informal or micro-level operations into more competitive ventures

Project at a Glance

Geographical Scope & Implementation Status:

- ***Uganda*** — *Incubation Planning Underway*
- ***Kenya*** — *Advanced Stage with Incubation Program Underway*
- ***Malawi*** — *Studies Completed or Nearing Completion*
- ***South Africa*** — *Studies Completed or Nearing Completion*

Work Packages:

- ***WP1:*** Mapping and Scoping Studies
- ***WP2:*** Enterprise Incubation and Capacity Building
- ***WP3:*** Stakeholder Co-Learning and Validation
- ***WP4:*** Policy Engagement and Knowledge Dissemination

Approach: Research-based, transdisciplinary, focused on building the capacity of young scholars

Dr. Kingiri emphasized the current stakeholder engagement in Uganda, is part of Work Package 3, which focuses on co-learning with stakeholders to gather insights on what works, what challenges persist, and how interventions can be improved. She concluded by encouraging participants to learn, share, and collaborate.

Research Outputs

Scoping Study Findings: Dr. Joseph Elasu, MUBS

Dr. Elasu presented findings from the systematic literature review and scoping study that examined women's and youth participation in Uganda's clean energy value chains, focusing on solar and clean cooking sectors.

He explained that the study developed a framework centered on clean energy entrepreneurship, especially in the solar energy and clean cooking sectors.

Disclosed that using a systematic literature review guided by a six-step approach, the study analyzed existing research to understand the involvement of women and youth in these sectors.

Research Questions Addressed:

1. What roles do women and youth play across the clean energy sector value chain?
2. What specific technologies (solar, LPG, biogas, improved cookstoves) are being deployed?
3. What systemic barriers affect scalability of women and youth-led clean energy enterprises in Uganda?
4. What infrastructural and existing policy initiatives support women and youth-led clean energy enterprises in Uganda?

Key Findings

Participation Patterns:

- Women and youth are active participants but rarely own or manage enterprises
- Women predominantly engaged in distribution and retail rather than production or manufacturing
- Youth more visible in sales and technical roles but with limited decision-making authority

Technology Focus:

- Clean cooking technologies dominate due to lower entry costs
- Solar systems present higher barriers due to capital requirements and technical complexity

Systemic Barriers:

- Limited technical expertise and capacity
- Low public awareness of clean energy benefits
- Restricted access to affordable finance
- High credit costs and collateral requirements
- Few incentives exist for innovation

Support Infrastructure:

- Emerging support through organizations like Uganda Green Enterprise Finance Accelerator (UGEFA)
- Limited coordination among support actors
- Geographic disparities with rural areas particularly underserved

Conclusions

Although women and youth make meaningful contributions to the sector, their involvement remains uneven and focused on the lower parts of value chains. More effective policies, funding strategies, and capacity-building initiatives are necessary to encourage inclusive participation.

Question and Discussion Session

Emerging concerns during the discussion of the findings and respective responses are summarised in the table below:

Comment/ Question	Response
Pay-as-you-cook financing model: How does it work, and has it been proven to be effective?	The model allows customers to pay in small instalments tied to usage, reducing upfront costs. Early pilots show promise but require strong monitoring systems.
Carbon credit engagement: Are youth and women-led enterprises benefiting?	There is very limited participation due to technical complexity and certification requirements.
Uganda's unique characteristics: What makes Uganda's ecosystem distinct?	High biomass dependence, strong informal sector presence, and emerging policy frameworks differentiate Uganda's context.
Marketing roles: What specific functions do women and youth perform?	Primarily door-to-door sales, community demonstrations, and peer-to-peer marketing.

Refugee communities: Were they included in the study?	The current study focused on Eastern and Central regions but did not specifically target refugee settlements, which constitute an important gap for future research.
Climate awareness: Are entrepreneurs aware of climate linkages with the enterprises they run?	Awareness varies significantly; many focus primarily on economic benefits rather than environmental impacts.

Survey Report Findings

Presented by: Dr. Sylvia M. Aarakit, MUBS

Presented below are the key findings from the survey report, as articulated by Dr. Aarakit.

Research Questions Addressed

Overarching Research Question: *"What are the systemic factors affecting women and youth entrepreneurs from accessing business opportunities in the clean energy/climate innovation ecosystem (CIE), and how can promising best practices be scaled up for impact in Uganda?"*

Specific Research Questions Addressed:

RQ1: *What clean energy technologies and their deployment value chains provide opportunities for women and youth entrepreneurs in Uganda?*

RQ2: *What are the best practices in clean energy technologies, financing, and business models that promote investment opportunities for women and youth entrepreneurs in Uganda?*

RQ3: *What are the economic and social impact indicators on women and youth entrepreneurs associated with identified best practices in clean energy technologies?*

RQ4: *What are the systemic factors influencing access to business opportunities by women and youth in the clean energy technology value chains?*

RQ5: *What is the appropriate framework for optimising and upscaling women and youth-led clean energy enterprises?*

Methodology

Research design: The baseline survey employed a cross-sectional quantitative research design, guided by a gender-transformative lens to understand the systemic factors shaping women and youth participation in Uganda's clean energy sector. The study was theoretically anchored in two complementary frameworks including Inclusive Innovation and Innovation Hubs which together informed the analysis of how entrepreneurs access opportunities, what constrains them, and how best practices can be scaled.

Survey Coverage: The survey covered 1,318 clean energy enterprises across 19 districts in the Central and Eastern regions of Uganda, focusing on enterprises operating within the solar and clean cooking value chains and owned or managed by women and/or youth.

Sampling Design: A multi-stage stratified sampling design was applied. Regions were selected using Probability Proportional to Size (PPS), followed by district selection, and finally enterprise-level sampling. Stratified, purposive, and snowball sampling techniques were combined to ensure representation by gender, age, sector, and geography, including hard-to-reach informal enterprises.

Data Collection: Data was gathered through two primary methods. Structured interviews were conducted with women and youth owners or managers of clean energy enterprises to capture business characteristics, technologies, financing mechanisms, and challenges. Five mobile field teams comprising 20 trained research assistants recruited by MUBS were deployed across the study districts. Data was captured both manually and electronically using Computer Assisted Personal Interviews (CAPI) devices. Fieldwork was conducted from late March to June 2025, with instruments pre-tested in Luwero district prior to the main data collection phase.

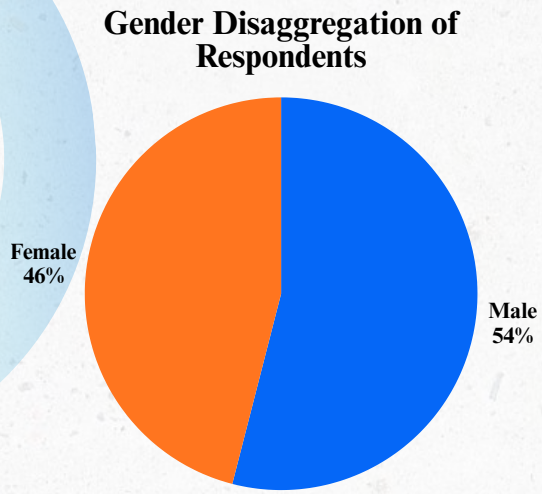
Data Analysis: Quantitative data was analysed using Stata and Excel. Systems thinking theory and Vensim software were applied to map causal loops and design the conceptual framework for scaling women and youth-led clean energy enterprises.

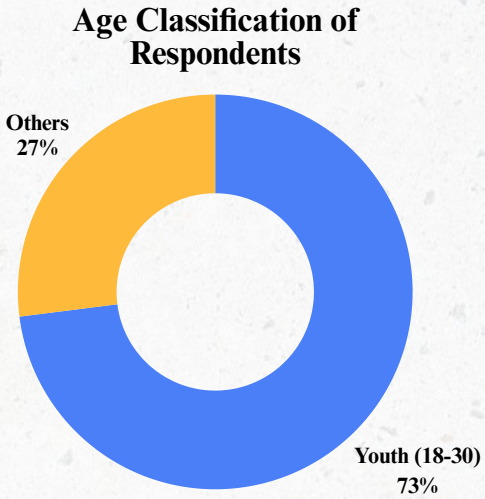
Ethical Considerations: The study was conducted in full compliance with the research ethical framework, including obtaining ethical clearance from the University research ethical committee and Uganda National Council for Science and Technology (UNCST). All enumerators were formally contracted and took an Oath of Secrecy, while voluntary informed consent was obtained from all participants.

Key Findings

Demographic Profile:

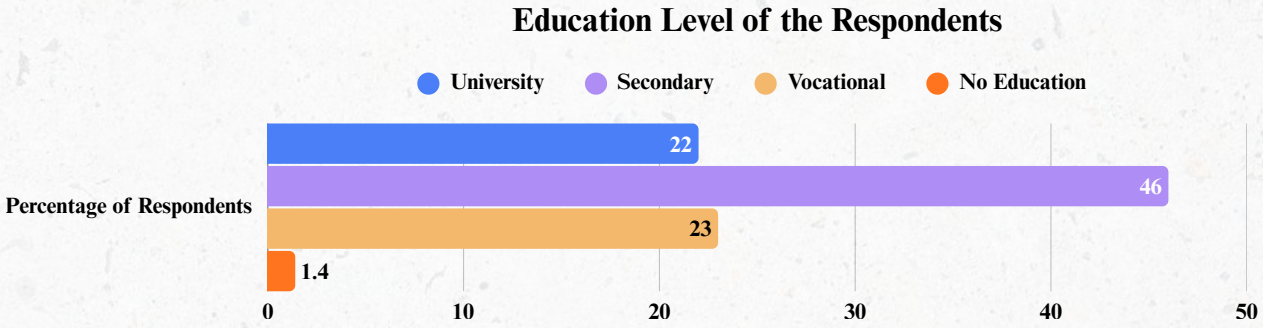
Data was collected from 1,318 clean energy enterprises across 19 districts in Central and Eastern Uganda. Below is a summary of respondents' characteristics;

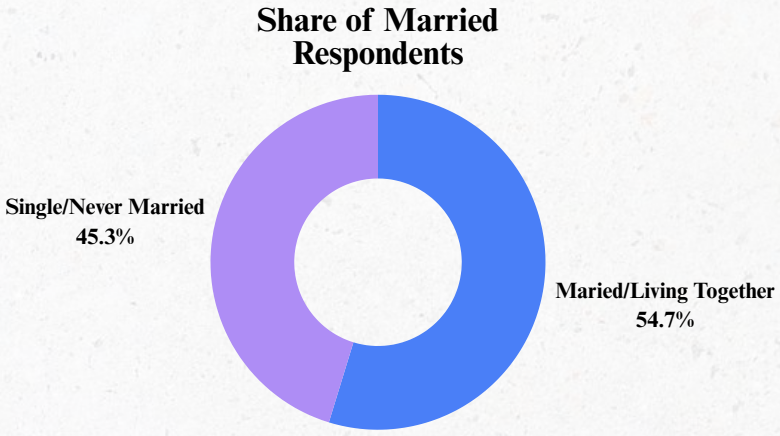




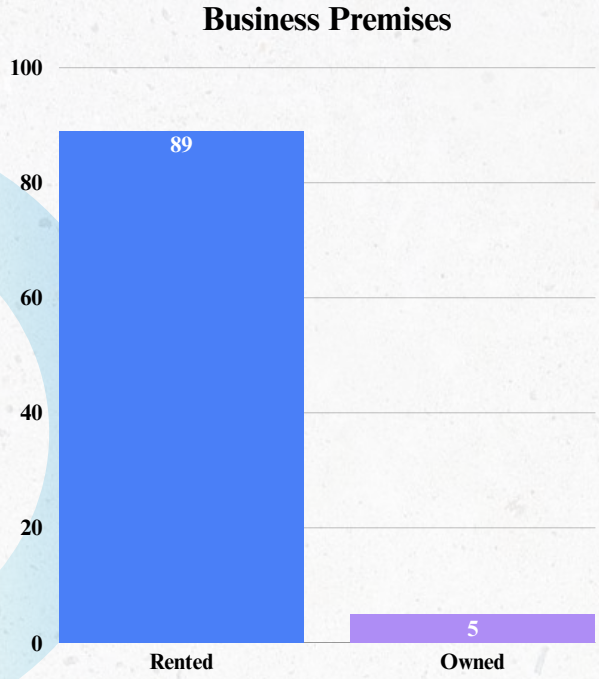
Total Number of Enterprises Surveyed: 1,318

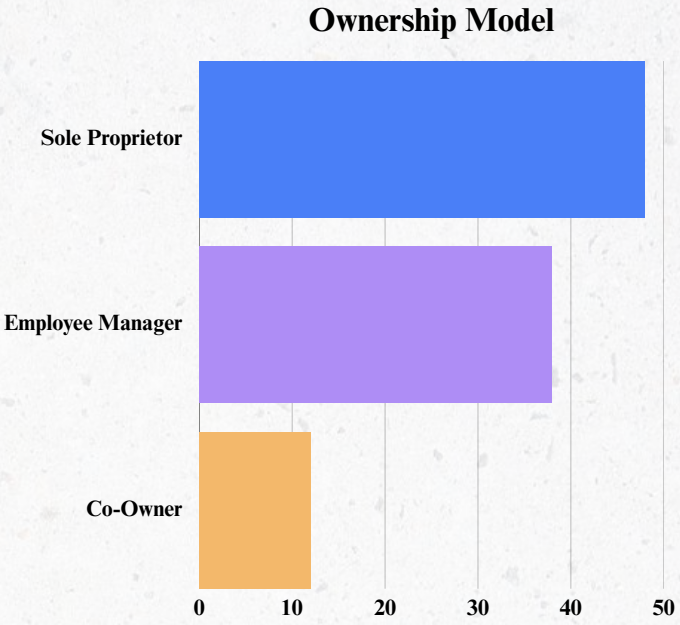
Education and Marital Status:





Business Profile:

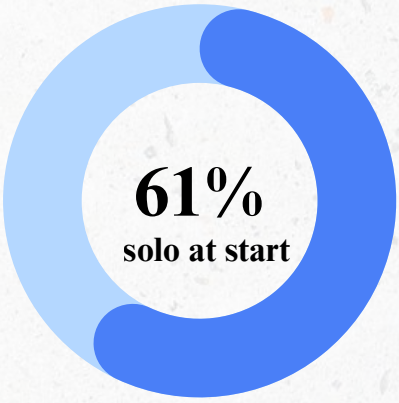




Female Co-Ownership:

66%

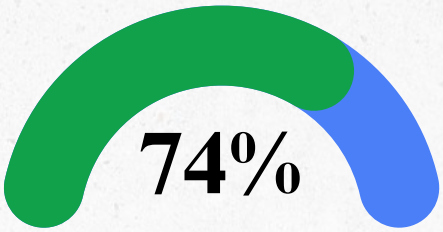
Business Size at Start



Overwhelmingly Micro-Enterprises

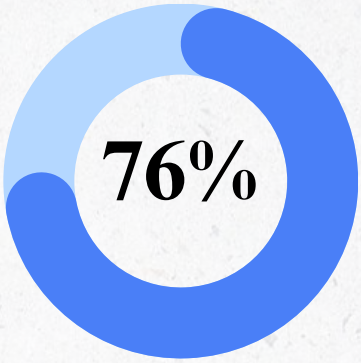
86% employ 1-5 people

Long Working Hours daily, driven by customer demand patterns



Registered with at least a valid operating license

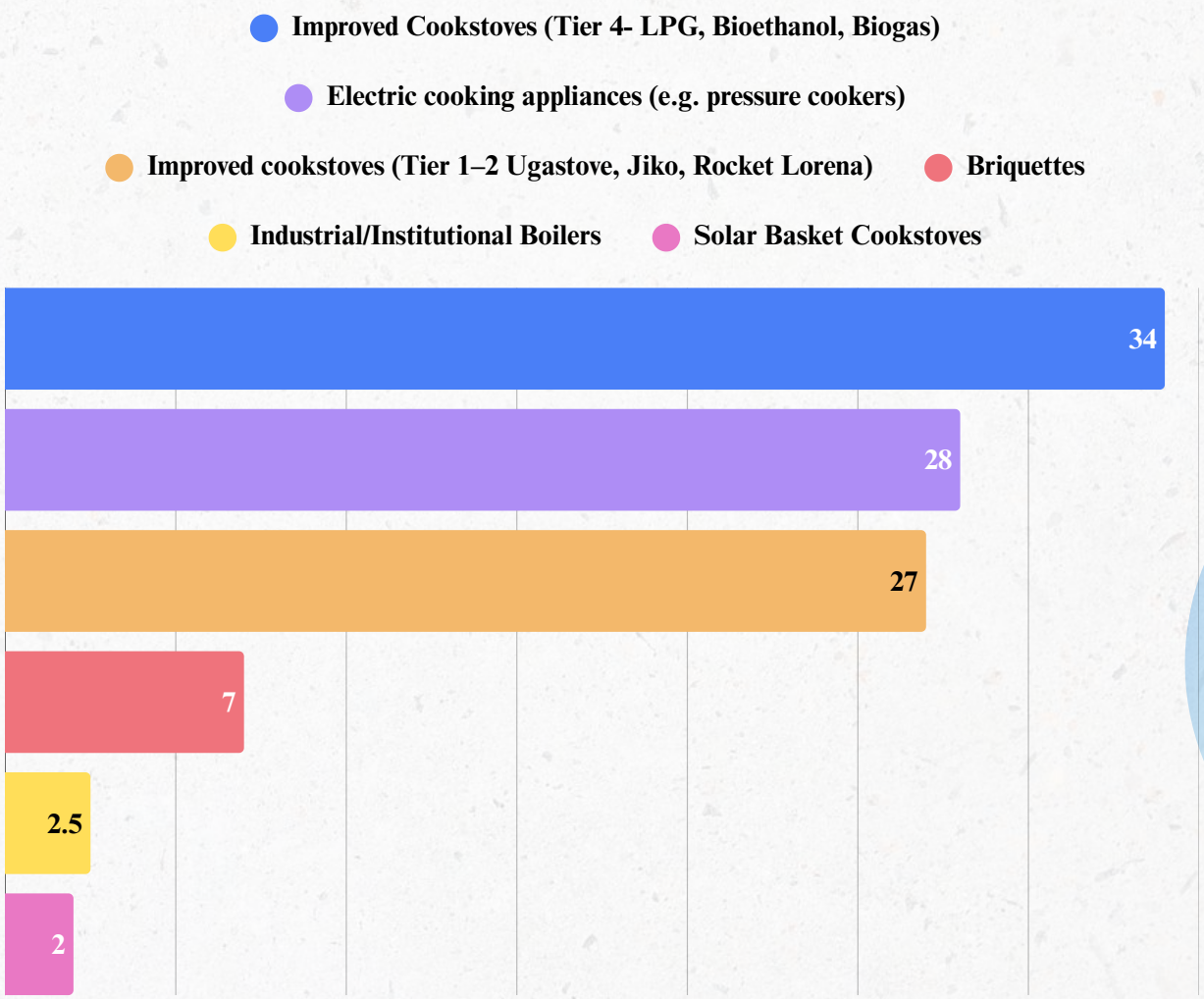
Are not members of any clean energy association or cooperative



RQ1: Clean Energy Technologies & Value Chain Opportunities for Women and Youth

Clean cooking technologies (especially Tier 4 improved cookstoves and electric pressure cookers) dominate the landscape. They are the primary focus of most women- and youth-led enterprises because they require lower capital to enter and have high household demand. Solar technologies follow, but constrained by capital and technical barriers. A smaller but growing group operates across both sectors.

Share of Clean Cooking Technologies Distributed by the Enterprises



Solar Technologies

Only 522 enterprises (40%) engage in solar. The most common products are solar panels, solar appliances (lanterns, lighting kits), Solar Home Systems (SHS), and PICO solar. Solar mini-grids remain out of reach for many due to high capital and regulatory complexity.

Value Chain Activities: Where are women and youth positioned?

Most entrepreneurs focus on the lower parts of the chain. Selling (42%) and supply/distribution (18%) dominate; followed by installation (13%), maintenance (9%), and manufacturing (8%). Upstream roles such as fabrication, recycling, and waste management remain largely untapped.

Opportunities include growing market demand for clean energy solutions, support from social and business networks, digital platforms that enable broader reach, emerging last-mile distribution models, and community-driven initiatives gaining traction.

Key Insight on RQ1: *Women and youth-led clean energy enterprises are heavily weighted toward sales and distribution. There is need for capacity-building in areas of technology design, installation, maintenance, and manufacturing to unlock higher-value participation.*

RQ2: Best Practices in Financing & Business Models

The financing landscape is largely informal and self-reliant. Most entrepreneurs rely on personal savings and social networks. However, promising models are emerging.

Top Financing Approaches	
Table banking & ROSCAs (most widely used)	Community-based, no collateral needed, socially trusted
Personal savings	Primary startup source for most CEEs.
Family and friends	Second most common source of financing that is informal and based on trust and networks
Bank loans (Equity, Centenary, Stanbic)	Growing but limited; most banks are not yet serving CEEs

Grants from NGOs/donors	Present but in small-scale and fragmented
PAYG / Pay-As-You-Go systems	Emerging; tied to mobile money; reduces upfront burden
Crowdfunding & venture capital	Early-stage adoption; growing with digital connectivity

Solar Technologies

Only 522 enterprises (40%) engage in solar. The most common products are solar panels, solar appliances (lanterns, lighting kits), Solar Home Systems (SHS), and PICO solar. Solar mini-grids remain out of reach for many due to high capital and regulatory complexity.

Payment Models

- Cash payment is most dominant payment model. It is preferred for immediate liquidity and operational simplicity
- Deferred payment (layaway model) is the second most common and it improves affordability
- PAYG and Pay-As-You-Cook (PAYC) are emerging models that align payments with energy use
- Lease models remain least adopted due to legal and asset-management complexity

Monthly Revenue

Revenue levels are low. The majority of enterprises report monthly turnovers below UGX 1 million, reflecting limited market reach, low consumer awareness, and predominantly informal micro-enterprise status. Only a small minority exceed UGX 10 million per month.

Key Insight on RQ2: *Community savings groups (ROSCAs, table banking) are the top financing mechanisms. Personal savings dominate startup capital. Social media and referrals are the primary marketing tools. Cash payments is predominant, with PAYG growing. Over half of enterprises earn below UGX 1 million monthly. Thus, the most scalable and inclusive financing practices are PAYG models, ROSCAs, and digital payment platforms which lower barriers for both entrepreneurs and end customers.*

RQ3: Economic & Social Impact on Women and Youth

Respondents identified six key benefits from participating in clean energy enterprises. Women and youth value these benefits differently, reflecting distinct priorities and lived experiences.

Perceived Benefit	Women vs Youth Perspective
Job creation (for self or others)	Top benefit for women (41%) with direct livelihood impact
Entrepreneurship & business opportunities	Strongly valued by both (Women 23%, Youth 20%)
Skills development & training	Top benefit for youth (38%) and considered a pathway for career advancement
Leadership roles	Recognized but not yet widely realized (Women 9%, Youth 9%)
Access to financial resources	Higher priority for youth (8%) than women (7%)
Access to technology resources	It was a least recognized benefit for both groups

Decision-Making & Inclusion

▸ 698 youth reported being involved in key business decisions (e.g. hiring, training)

▸ However, only 188 women reported the same level of involvement, suggesting a persistent gender gap

▸ Youth are perceived as more flexible and available, leading to stronger inclusion in leadership

▸ Domestic responsibilities among women often limit their mobility and engagement in external roles

Key Insight on RQ3: *Clean energy enterprises are creating tangible economic and social value. Women prioritize employment; youth prioritize skills. Tailored support for each group may maximize impact.*

RQ4: Systemic Barriers to Access for Women and Youth

Both groups face a common set of structural barriers. Notably, women face more systemic exclusion from formal finance, while youth encounter informational gaps and procedural complexity.

Top Barriers as Ranked by Women and Youth Respondents

Barrier	Youth Rank / Women Rank
Limited access to financing & funding information	1st / 1st — the single biggest barrier for both groups
Lack of awareness of sustainable business models	2nd / 2nd — fragmented, inaccessible training
Low support from government and funding agencies	3rd / 3rd — perception of exclusion
High startup costs	4th / 4th — collateral constraints hit women hardest
Limited opportunities for business expansion	5th / 5th — saturated local markets
Weak community engagement	6th (Youth) / 9th (Women) — youth struggle to gain trust
Limited product diversification	7th / 7th
Uncertainty about profitability	8th (Youth) / 6th (Women) — women are more risk-averse

Gender-specific Barriers	
Gender-Related Challenge	**Rank (Combined)**
Lack of collateral to secure loans	1st — affects both, more severe for women
Lack of capital to start or grow	2nd — prevalent across groups
Limited access to market information	3rd — women ranked this higher than youth
Employment bias favoring men	4th — mild but present, especially in technical roles
Perception of discrimination in the sector	5th — moderate; the sector is reported as relatively inclusive
Time availability to engage	7th —It was not a major issue for either group

Skills Gaps

▸ Technical skills for manufacturing and servicing had a mean score of 3.53 for women and 3.42 for youth. This indicates a high deficiency

▸ Business skills for marketing, branding, and negotiations had a mean score of ~3.17. This limits growth potential of women and youth-led CEEs

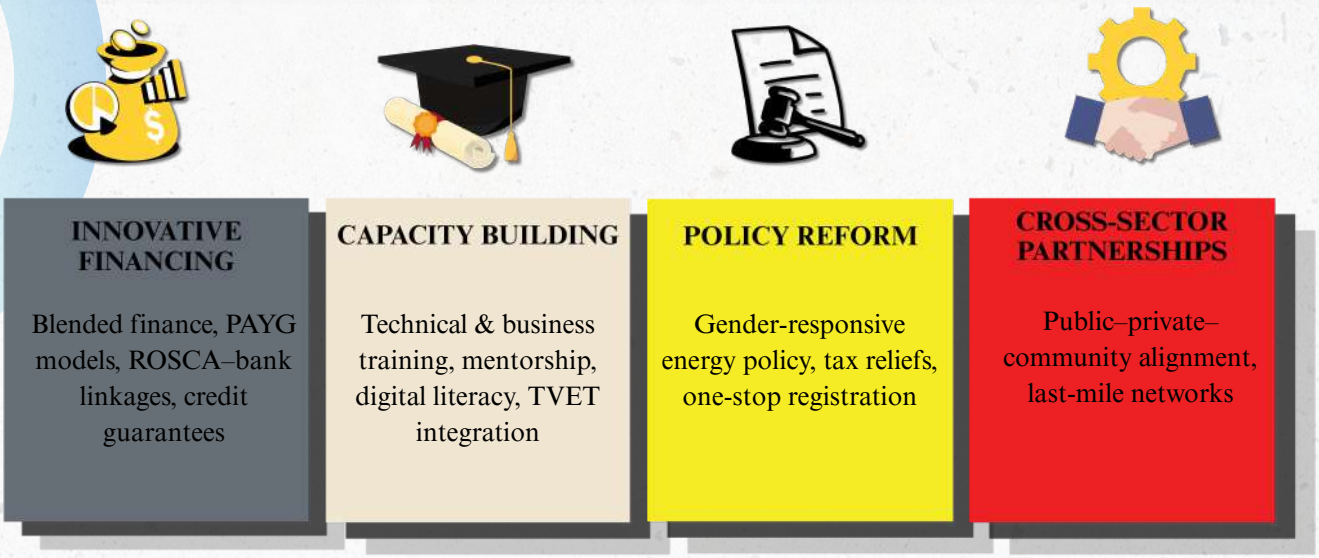
▸ Only 9% of businesses have ever received any business support from government or NGOs

▸ Majority of respondents expressed need for training and skills development support followed by mentorship

Key Insight on RQ4: *Finance and information barriers are predominant (Access to finance, business model awareness, and limited government support are the top three barriers for both groups). Addressing these through community savings, inclusive lending products, and accessible mentorship — would unlock the most significant gains. Women face lower decision-making inclusion. Skills gaps in technical and business functions are significant.*

RQ5: Optimization & Upscaling Framework

The study proposes an evidence-based, systems-thinking framework grounded in four mutually reinforcing pillars including innovative financing, capacity building, policy reform, and cross-sector partnerships. These emerged from causal loop analysis identifying vicious cycles between limited finance, weak policy, low capacity, and stagnant markets.



How the Framework Works

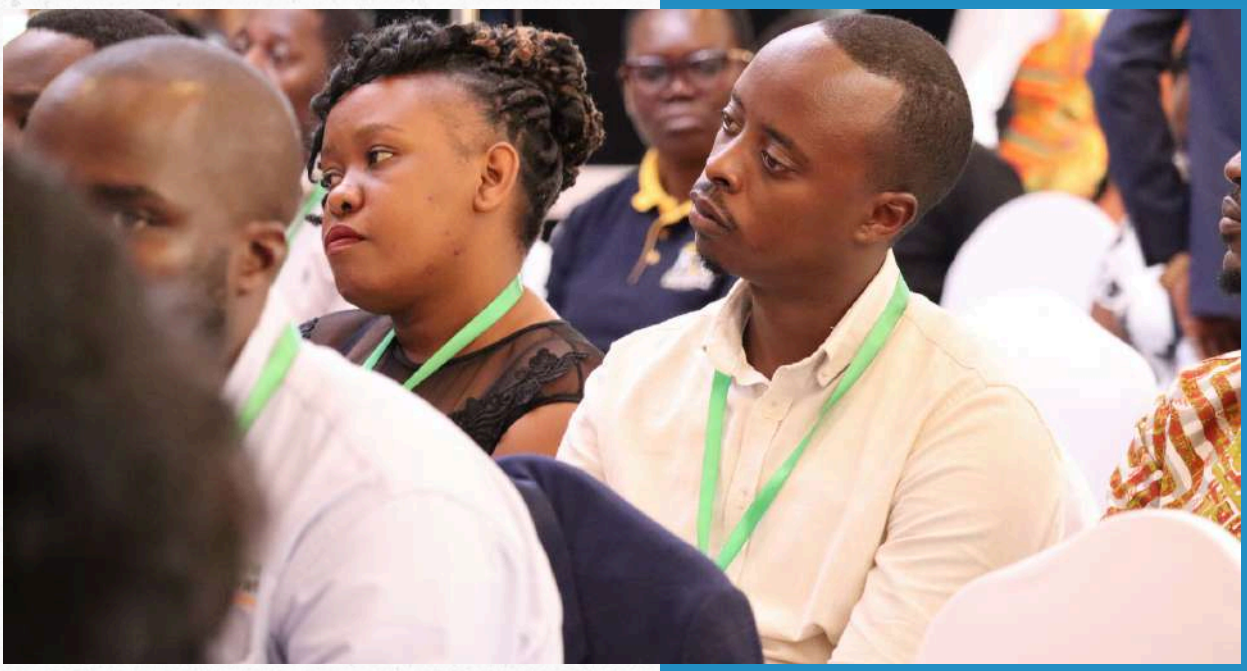
The framework follows a logical sequence: financial access enables entrepreneurs to enter the market → capacity building strengthens their skills and confidence → enabling policies and institutional support reduce structural barriers → cross-sector partnerships unlock market reach and sustainability. A gender lens and youth-specific considerations are applied at every level.

Key Recommendations	
Priority Area	**Recommended Action**
Finance	Introduce blended finance instruments; scale PAYG models; link ROSCAs to formal banks
Skills & Capacity	Embed clean energy entrepreneurship in TVET/university curricula; build mentorship networks

Business Models	Replicate last-mile distribution networks; encourage inclusive co-ownership and partnership
Digital Tools	Expand mobile money, e-commerce, and real-time monitoring for CEEs
Policy	Strengthen gender and youth targets in NDP IV; create a one-stop CEE registration platform
Data & Evidence	Establish sex- and age-disaggregated monitoring systems for clean energy enterprises

Closing Reflection:

The clean energy transition in Uganda cannot be fully realized without deliberately positioning women and youth as central actors in the ecosystem. Their enterprises are not only engines of innovation and employment, but also conduits for equitable access to energy. By implementing these recommendations, Uganda can accelerate progress toward universal clean energy access, inclusive growth, and its commitments under Vision 2040 and the Sustainable Development Goals.



Key Informant Interview Findings

Presented by: Dr. Brendah Akankunda & Ms. Sarah Kyejjusa, MUBS

The presentation summarised the research questions, methods and key findings from a qualitative study. The study explored the experiences of different stakeholders in Uganda's clean energy sector, looking at what helps women and youth to succeed, what holds them back, and what business and financing practices are showing the most promise. The key highlights from the qualitative presentation is as follows:

Main Research Question:

MRQ: What are the systemic factors that enhance or constrain women and youth's access to business opportunities in clean energy innovation, and how can the most promising best practices be scaled up for greater impact?

Specific Research Questions Addressed:

SRQ 1: What systemic factors enhance women and youth's access to business opportunities in the clean energy sector?

SRQ 2: What constraints limit women and youth's access to business opportunities in the clean energy sector?

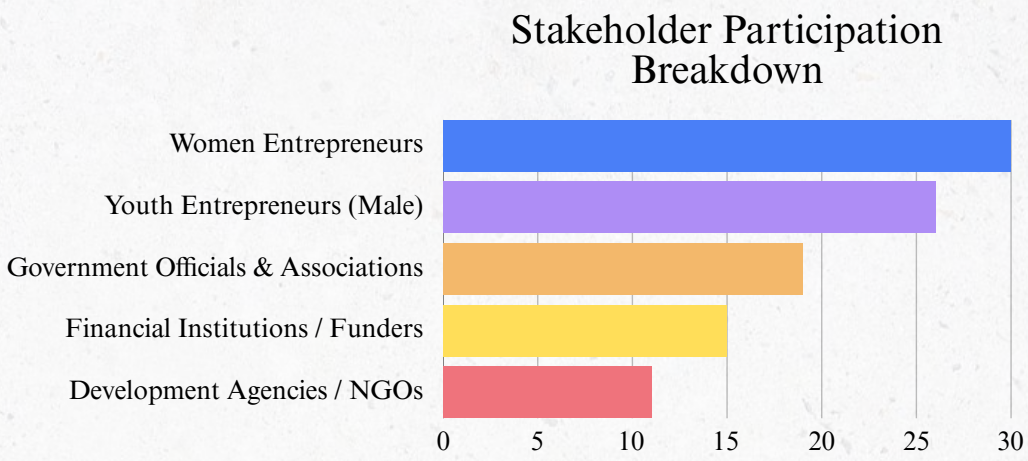
SRQ 3: What financing and business models (best practices) promote investment opportunities for women and youth in the Climate Innovation/Entrepreneurship Ecosystem (CIE)?

Methodology

The study used a qualitative approach, collecting data from 27 key informants across five stakeholder groups between April and July 2025. The table below shows who participated and their roles in the clean energy value chain.

Data Collection and Analysis

Participants were selected using purposive and snowball sampling. Semi-structured interviews lasting 30–40 minutes were held in person or via video call. Interviews were recorded (with consent), transcribed verbatim, and analyzed using Gioia's thematic analysis approach which builds findings from the ground up, letting themes emerge directly from what participants said, before grouping them into broader patterns and insights.



Key Findings

SRQ 1: Systemic Factors that Enhance Access to Business Opportunities

The study identified six key enablers that help women and youth access and grow their clean energy businesses:

Enabler	What It Means in Practice
Advisory Support	Access to business development services and mentorship helps entrepreneurs become investor-ready, refine business models, and secure funding. Advisory services are offered by NGOs, associations, and fellow women entrepreneurs.
Collaborations & Partnerships	Most entrepreneurs actively partner with organizations such as GIZ, SNV, UNACC, USEA, and PSFU to access finance, training, and market linkages. Peer-to-peer support among women entrepreneurs is especially valuable for smaller firms.
Community Outreach & Awareness	Entrepreneurs use savings groups, farmer groups, live cooking demos, storytelling, and radio to reach and educate communities. These community-rooted approaches build trust and drive adoption of clean energy products.

Capacity Building & Training	Training in business skills, financial literacy, pitching, and technical areas (e.g., solar installation, biogas) equips entrepreneurs to grow their businesses and access investment. Association-linked certifications (e.g., through DIT) improve market credibility.
Standardization & Certification	Quality marks such as the UNBS Q-Mark and ISO-aligned testing open doors to institutional buyers and public programs, while filtering out counterfeit products. This protects compliant women and youth producers.
Self-Empowerment & Innovation	Women and youth who embrace continuous learning and innovation despite resource constraints are better positioned to adapt, grow, and influence their communities.

SRQ 2: Constraints Limiting Women and Youth's Access to Business Opportunities

Despite progress, women and youth face significant barriers. These are grouped into financial, social, structural, and operational challenges:

Challenge	What Participants Said	Possible Solution
Access to Finance	Strict lending requirements, lenders unfamiliar with clean energy tech, and lack of working capital limit growth.	Blended finance, group-based lending, financial literacy training, and SACCO linkages.
High Taxation	Some products are taxed at over 25–30%, pushing prices out of reach for low-income consumers. Only some components are tax-exempt.	Advocate for whole-system tax exemptions for certified products.

Gender Stereotypes	Women in leadership face resistance from male counterparts. Communities underestimate women's technical capabilities.	Community sensitization, women-led demonstrations, and mentorship.
Misconceptions & Cultural Barriers	Some communities perceive clean energy products (e.g., solar cooking) as unsuitable or taboo, especially for women.	Hands-on demonstrations, storytelling, and role-model showcasing.
Short-Term Expectations	Development support is a long-term process, but many stakeholders abandon it when results are not immediate.	Reframe expectations; design for long-term impact monitoring.
Climate Change & Weather	Floods and unpredictable rains disrupt supply chains, farming (a key value chain), and product delivery.	Climate-resilient logistics; diversified supply routes.
Financial Illiteracy	Youth especially struggle with financial management, falling into debt cycles with predatory lenders.	Village-level financial literacy programs; youth-specific training.
High Costs of Standardization	National testing facilities lack equipment, pushing enterprises to costly private labs. This inflates product prices.	Government investment in UNBS testing capacity; subsidized testing vouchers.
Loan Repayment Challenges	PAYGo users tied to agriculture struggle to repay during dry seasons when incomes fall.	Flexible repayment schedules; bank-led collections.

SRQ 3: Best Practices in Financing and Business Models

A. Financing Models

The following financing models are being used by women and youth-led clean energy enterprises in Uganda:

Financing Model	How It Works
Results-Based Financing (RBF) & Subsidies	Government and development agencies reimburse suppliers per verified sale (typically 30–60% price reduction). UECCC's Energy Access Scale-Up Project (EASP) is a leading example. Additional discounts are offered to women owned enterprises.
Carbon (Green) Blended Finance	Carbon credits and donor grants are combined to reduce the cost of delivering solar, cookstoves, and biogas technologies. Under SNV's Africa Biogas Component, a 60/40 blend of grants and carbon revenue covers costs. Banks (Stanbic, UDB) are also offering green bonds and ESG-aligned lending.
Asset Financing, Leasing & Energy-as-a-Service	Customers pay monthly fees to use products (e.g., solar dehydrators) without paying the full price upfront. The enterprise retains ownership. Options include buy-to-own, rent-by-use, and revenue-sharing models for last-mile delivery riders.
Cost-Sharing & Co-Financing	Repair and maintenance costs are shared between the enterprise and the customer (e.g., a 70/30 split), encouraging both parties to care for the equipment. Development finance institutions also provide guarantees that cover 50–75% of loans for small enterprises.
PAYGo with Bank-Led Recovery	Customers pay for products in installments via mobile money. PAYGo works best when banks handle repayment collection — reducing default rates from ~40% to significantly lower levels (e.g., Tulima Solar and Standard Bank partnership).

Direct Price Subsidies	Targeted price reductions for specific technologies (e.g., ethanol stoves, solar systems). Subsidized products must meet UNBS quality standards before receiving support. Government pays 50% of the appliance price after verification.
Inventory Finance & Trust Funds	A trust fund approach (under development by MEMD/MECS) allows suppliers to import at scale with bank-supported inventory credit — avoiding market distortion from poorly designed grant programs.
Group-Based Lending (SACCO/VSLA)	Community savings groups (VSLAs, SACCOs) are used to pool risk and link members to banks such as FINCA and Stanbic. Group guarantees improve repayment discipline and enable rural women and youth to access clean energy finance.
Commission-Based Sales Models	Local enterprises sell products on behalf of larger solar companies and earn commission per verified sale — without needing to purchase or import stock themselves. This reduces financial risk for small enterprises.
Customer Credit & Trade Credit	Established customers receive products on credit, paying over 2–3 months. Wholesale distributors also receive short-term credit from stove producers to stock and distribute products.

B. Business Models

Clean energy enterprises use a range of business models to reach markets and sustain their operations. The most effective ones share a common thread: they are community-rooted, partnership-driven, and inclusive by design.

Business Model	Description
Community-Based Sales Funnels	Live demonstrations, drama groups, peer outreach (including men-to-men demos), and market-day activations convert community awareness into sales leads. Savings groups and farmer associations serve as built-in distribution networks.

Hybrid Distribution	Enterprises combine direct sales teams, regional agents/distributors, and B2B institutional orders (e.g., schools, hospitals). Membership to UNACC and PSFU enables access to bulk contracts.
PAYGo & MFI-Linked Consumer Finance	Manufacturers partner with MFIs (Vision Fund, UGAFODE, FINCA) to enable instalment purchases via mobile money. This shifts credit risk off the enterprise and widens access for customers.
Advisory-Led Models	Revenue is generated from training fees, subcontracting, and project management services. These models prioritize investor readiness for enterprises before pushing them towards loans.
Carbon Finance + Donor Cost-Share	This approach blends project grants with carbon revenue to cover operations and technical assistance, while biogas enterprises monetize bio-slurry as an additional women-friendly income stream.
Standards-as-a-Gateway	Quality certification (UNBS Q-Mark, ISO testing) is used as a market access tool, unlocking institutional buyers, development programs, and public procurement contracts.
Platform & Coalition Models	Enterprises join multi-stakeholder platforms (e.g., SOLCO) to co-create demand and aggregate household targets. USEA, UNACC, and NREP serve as enabling coalitions for small enterprises.
Revenue-Sharing / Last-Mile Delivery	Youth receive bikes and earn per delivery, sharing revenue with the enterprise. This provides income without upfront capital and is scalable for last-mile distribution.
Purpose-Led Entrepreneurship	Founders anchor their ventures in solving real community problems. This model builds community trust and long-term customer loyalty.

Conclusions and Recommendations

The research confirms that women and youth have a crucial role to play in Uganda's clean energy transition but they need more targeted, sustained support to realize their potential.

The findings point to four priority areas for action:

Expand accessible financing: Scale up gender-responsive RBF schemes, portfolio guarantees, and PAYGo models. Establish inventory-finance trust funds. Reduce collateral barriers for first-time borrowers. Ensure all finance is linked to quality-certified products.

Grow markets through community engagement: Invest in community-based sales models, peer outreach, and SACCO/VSLA-linked purchasing. Position women and youth as lead agents in commission-based structures. Extend tax exemptions to complete clean energy systems.

Build capacities and investor readiness: Deliver practical business development services (bookkeeping, governance, pitching) alongside technical skills. Subsidize DIT certification. Establish mentorship programs led by experienced women in energy.

Strengthen standards: Make public financing conditional on UNBS/ISO certification. Introduce test-cost vouchers for small producers.

Closing Reflection:

The study shows that blended, inclusive, and partnership-driven models anchored in green financing, gender responsiveness, guarantees, cost-sharing, and digital systems are the most effective pathways for scaling women and youth-led clean energy enterprises in Uganda.

Question and Discussion Session

Emerging concerns during the discussion of the findings and respective responses are summarised in the table below:

Comment / Question	Response
What makes clean energy entrepreneurship unique?	Technical complexity, long capital return periods, and strong regulatory requirements distinguish it from general entrepreneurship.
How many women-led companies were studied?	1,318 enterprises were studied. Out of these, women owned or co-owned enterprises were approximately 45%, though many operate at micro-scale.
How can bottlenecks across the value chain be addressed?	Requires coordinated action—financing for upstream manufacturing, training for midstream distribution, and awareness for downstream adoption.
Why do women feature more prominently in findings?	The study deliberately focused on women and youth to address historical underrepresentation in energy research.
Are women participating in green bond initiatives?	Very limited participation; green bonds remain accessible primarily to large-scale, formal enterprises.
Are products aligned with market demand and quality expectations?	Significant gaps exist—many products fail to meet user needs, particularly around durability, efficiency, and multi-pot cooking capacity.

Panel Discussions

Panel 1: From Innovation to Impact - Insights from Clean Energy Entrepreneurs

Ms. Ruth Komuntale — CEO, Ecoca East Africa

Ms. Mariah Kizza — CEO, SWEDO

Mr. Alfred Kusima — CEO, SunCool Uganda

Ms. Loy Kyozaire — CEO, Sendea

Moderator: Mr. Joseph Murabula, Kenya Climate Innovation Center (KCIC)

Questions Addressed

1. What lessons stand out from your experience in the clean energy sector?
2. What challenges do manufacturers face, and how do you handle them?
3. What financing shifts are needed to help women move from micro to medium-scale enterprises?
4. What partnerships are most impactful for business growth?

Panel Discussion Highlights

The key insights based on the questions addressed during the panel discussion have been presented in a tabular format to enhance accessibility and comparison of key emerging themes from the discussion

Question One: *What lessons stand out from your experience in the clean energy sector?*

Theme	Panel Response
Mindset change & consumer education	A significant portion of the population still perceives traditional cooking methods as superior to clean energy alternatives. Changing this mindset requires consistent, targeted consumer education and not just product promotion. Entrepreneurs must invest in explaining the benefits of clean cooking before expecting adoption.
Peer learning among entrepreneurs	Entrepreneur-to-entrepreneur learning exchanges are one of the fastest ways to accelerate problem-solving and business improvement. Sharing real experiences including failures helps others avoid costly mistakes and find workable solutions more quickly than formal training alone.
Customer management & after-sales support	Understanding user needs in depth and providing reliable after-sales support are central to building customer loyalty. In a sector where products are often new to users, trust is built over time through responsive service, not just at the point of sale.
Collective procurement	Manufacturers can meaningfully reduce input costs by collaborating on the joint procurement of raw materials. This is particularly relevant for smaller enterprises that lack the volume to negotiate favourable terms individually.
Impact-driven innovation	The most sustainable path to growth is to focus first on creating genuine value for users rather than rushing to scale. Deeply understanding your target audience in terms of their lives, constraints, and aspirations must precede product development and market expansion.
Training as a market entry strategy	Providing technical training to women, particularly around product use and maintenance, creates not just customers but advocates. Trained users become community ambassadors who drive organic adoption of clean energy products in their networks.

Product demonstrations	Hands-on exhibitions and live demonstrations are highly effective in building confidence and driving product adoption. When people can see and experience a technology in action, hesitation gives way to interest.
Quality as a growth driver	In sectors like dairy cooling, where the quality of output (milk) directly determines income, demonstrating consistent product quality builds trust and generates repeat business. Quality is not just a standard — it is a sales argument.

Question Two: *What challenges do manufacturers face, and how do you handle them?*

Theme	Panel Response
Import duties on equipment	High taxes on imported clean energy equipment force manufacturers to raise prices, making products unaffordable for the very communities they aim to serve. This is a structural barrier that individual enterprises cannot resolve on their own. It requires policy intervention, specifically targeted tax relief for certified clean energy equipment.
Building local technical capacity	Importing products in unassembled form rather than as finished goods presents a strategic opportunity. Local assembly not only creates employment but builds technical skills within the workforce. As one panelist put it: "You can't treat what you don't know." Hands-on involvement in assembly deepens understanding and improves after-sales capability.
Local raw material sourcing	Developing local supply chains for raw materials reduces dependency on imports, lowers costs, and builds resilience against supply disruptions. Where viable, sourcing locally also supports broader economic linkages within communities.
Limited government support	Government engagement in the clean energy sector remains insufficient. Tax exemptions and subsidies for clean energy equipment would go a long way in making products more affordable and competitive against conventional alternatives.
Rural electrification gaps	Only 1 in 25 partner dairy companies has access to the national grid. This means the vast majority of rural customers are entirely dependent on off-grid solar solutions — making reliable, quality solar products not a luxury but an operational necessity.

Question Three: *What financing shifts are needed to help women move from micro to medium-scale enterprises?*

Theme	Panel Response
Collaboration with Established Organisations	Partnering with organisations such as the Clean Cooking Alliance has enabled enterprises to access innovation support and co-develop higher-quality products — for example, a Tier 4 solar cooking stove. Such collaborations also improve credibility and open doors to impact financing.
Patient Capital & Long-Term Support	Women-led enterprises often operate in sectors with longer return cycles. Financing instruments need to reflect this reality — through longer repayment tenors, grace periods, and a shift away from short-term, high-collateral loan structures that disadvantage smaller firms.
Investor Readiness Before Finance	A common gap is that enterprises seek financing before they are operationally ready. Business development support — including governance, bookkeeping, and financial management — must precede access to growth capital. Finance without readiness leads to poor outcomes for both lender and borrower.
Collective & Group-Based Finance	Collective purchasing and group-based financing structures help women enterprises overcome the individual collateral constraints that typically prevent access to formal credit. These models have proven effective at both reducing costs and improving loan repayment rates.
Collaboration with Established Organisations	Partnering with organisations such as the Clean Cooking Alliance has enabled enterprises to access innovation support and co-develop higher-quality products — for example, a Tier 4 solar cooking stove. Such collaborations also improve credibility and open doors to impact financing.

Question Four: *What partnerships are most impactful for business growth?*

Theme	Panel Response
Local Government Structures	Working through existing local government frameworks accelerates adoption by lending institutional credibility and enabling coordination across communities. Local governments also facilitate access to community land, resources, and endorsement.
Development Partners	Development partners provide not only funding but also technical assistance, market access support, and validation. Partnerships with international and regional development agencies have been instrumental in helping enterprises develop more sophisticated products and scale their reach.
Membership Associations & Sector Networks	Membership to sector associations such as UNACC and USEA provides access to contracts, training, advocacy platforms, and peer networks. These connections often generate business opportunities that would otherwise be inaccessible to smaller enterprises.
Financial Institution Partnerships	Formal linkages with banks and microfinance institutions help enterprises offer customers payment options that improve affordability and widen the customer base. These partnerships also build the enterprise's credit history and credibility for future financing.
Local Government Structures	Working through existing local government frameworks accelerates adoption by lending institutional credibility and enabling coordination across communities. Local governments also facilitate access to community land, resources, and endorsement.

Q&A Session Involving Participants

Comment / Question	Response
How do you navigate high taxes?	We advocate continuously with government and industry associations. Meanwhile, we emphasize value over price and offer flexible payment options to customers.
How do you handle beliefs that traditional cooking is better?	Through persistent demonstration, taste tests, and highlighting time/cost savings. We also train "champion users" who become community advocates.
Can Uganda achieve local manufacturing at scale?	Yes, but requires: tax incentives, technical training infrastructure, consistent policy support, and patient capital willing to invest long-term.
What are emerging innovation areas in clean energy?	Hybrid systems combining solar, biogas, and battery storage; productive use applications (cooling, processing); smart monitoring systems; and local manufacturing of components.

Panel 2: From What Will It Take to Scale Clean Energy Enterprises in Uganda?

Prof. Rasmus Lema, University of Johannesburg

Mr. Richard Ebong — Uganda National Bureau of Standards

Mr. Desmond Tutu — Uganda Energy Credit Capitalisation Company

Hon. Prof. Robinah Nanyunja — Trans Africa Investment Summit

Dr. Nicholas Mukisa — National Renewable Energy Platform

Ms. Justine Akumu — Ministry of Energy and Mineral Development

Questions Addressed

1. What strategies can help enterprises move into higher value segments?
2. How can ministries coordinate better to streamline policy objectives?
3. How can micro-enterprises access finance more easily?
4. How can standardization costs be reduced?
5. What actions address gender inequalities in the value chain?

Panel Discussion Highlights

The key insights based on the questions addressed during the panel discussion have been presented in a tabular format to enhance accessibility and comparison of key emerging themes from the discussion

Question One: *What strategies can help enterprises move into higher value segments?*

Theme	Panel Response
Needs mapping at each stage of enterprise growth	Before any intervention can be effective, it is important to understand the specific requirements of enterprises at different stages of growth from micro to small to medium. A one-size-fits-all approach overlooks the distinct bottlenecks that emerge as enterprises develop, and targeted support that matches the enterprise's current stage is far more impactful.
Business Development services & technical training	Access to structured business development services including financial management, governance, and strategic planning combined with relevant technical training, equips entrepreneurs with the skills to operate at a higher level. These services are most effective when paired with market linkage support that connects enterprises to larger buyers and institutional customers.
Innovation support & access to testing facilities	Moving into higher value segments often requires product improvement and validation. Facilitating access to testing facilities and certification pathways allows enterprises to meet the standards expected in premium or institutional markets, while also opening doors to development financing tied to quality compliance.
Clear scaling pathways	Enterprises need a visible and realistic route from micro to small to medium scale. Creating structured progression pathways with defined milestones, appropriate support at each level, and graduated access to finance helps entrepreneurs plan for growth rather than stagnate at the same level indefinitely.
Private sector leverage	Partnering with commercial banks and private sector actors to de-risk clean energy lending creates a more enabling environment for enterprise growth. When financial institutions are brought in as active participants rather than passive observers, capital flows more readily to enterprises that are ready to scale.

Question Two: *How can ministries coordinate better to streamline policy objectives?*

Theme	Panel Response
Gender mainstreaming across all energy programmes	Rather than treating gender as a separate add-on, ministries need to integrate youth and women's participation across all energy programmes by design. This means embedding gender considerations into programme planning from the outset, not as an afterthought.
Data-driven policy design	Effective inter-ministry coordination must be grounded in evidence. Using gender-disaggregated data allows policy makers to identify where gaps exist, who is being left behind, and which interventions are producing results. Without this data, policy decisions risk being based on assumptions rather than reality.
Gender audits of major energy programmes	Conducting systematic gender audits of all major energy programmes provides an accountability mechanism that ensures stated commitments to inclusion translate into measurable outcomes. These audits also surface structural barriers within programmes that may be inadvertently excluding women and youth.
Policy integration through Result-Based Financing	Linking grants and public financing to verified results including installation rates, user satisfaction, and gender targets creates a performance incentive that aligns ministry objectives across different mandates. This approach reduces duplication and encourages coordinated action around shared outcomes.

Question Three: *How can micro-enterprises access finance more easily?*

Theme	Panel Response
De-risking through commercial bank partnerships	One of the most effective ways to improve micro-enterprise access to finance is to reduce the perceived risk for lenders. UECCC has been working with commercial banks to provide credit guarantees and de-risk clean energy lending, which lowers the barrier for enterprises that would otherwise be considered too small or too uncertain to finance.
Result-based financing linked to verified outcomes	Financing tied to verified installations and user satisfaction shifts the incentive towards actual impact rather than mere disbursement. This approach also provides a structured pathway for micro-enterprises to demonstrate performance and build a track record that makes them more attractive to future funders.
Gender targets within financing programmes	Setting a minimum threshold such as at least 30% of beneficiaries being women — ensures that financing programmes are not inadvertently bypassing the enterprises that need support most. Without explicit targets, market dynamics tend to favour enterprises that already have some advantage.
Incentive Top-Ups for Women Entrepreneurs	Providing additional financial incentives, for example, an extra UGX 50,000 for women entrepreneurs participating in Results-Based Financing (RBF) programmes which directly addresses the affordability gap and encourages greater participation from those who face higher barriers to entry.
Financial Interventions in Partnership with Development Finance	Collaborating with institutions such as the World Bank on gender-responsive financing instruments enables the development of products specifically designed to meet the needs of women-led micro-enterprises including longer tenors, lower collateral requirements, and bundled technical assistance.

Question Four: *How can standardization costs be reduced?*

Theme	Panel Response
Dedicated SME Division within UNBS	Creating a dedicated division within the Uganda National Bureau of Standards (UNBS) focused specifically on SMEs would allow for more accessible, appropriately scaled support. This division could offer streamlined processes, reduced fees, and tailored guidance that removes the intimidating complexity many small enterprises currently face when attempting to get certified.
Group certification through industry Associations	Working through industry associations to facilitate group certification allows enterprises to share the cost and administrative burden of the process. This is particularly effective for clusters of small producers making similar products, where a collective approach to standards compliance is both efficient and affordable.
Pre-Certification capacity building	Training SMEs on quality management systems before they enter formal certification processes reduces the likelihood of failure and the associated costs of repeat testing. Enterprises that understand what is required from the outset are far better positioned to meet standards on the first attempt.
Simplified standards for Micro-enterprises	Developing simplified, tiered standards for micro-enterprises while maintaining non-negotiable safety requirements, makes compliance more achievable for the smallest businesses. This approach recognizes that not every enterprise is at the same level and that standards should enable growth rather than obstruct it.
Subsidized testing & certification for women and youth	Subsidizing the initial costs of testing and certification for women and youth-led enterprises directly lowers the financial barrier that currently prevents many from pursuing formal standards compliance. This targeted support also signals institutional commitment to inclusive growth within the clean energy sector.

Question Five: *What actions address gender inequalities in the value chain?*

Theme	Panel Response
Women's leadership center for excellence in energy	Establishing a dedicated Women's Leadership Center for Excellence in Energy would create an institutional home for developing and supporting women leaders across the clean energy value chain. Such a center could offer training, mentorship, research, and advocacy providing a focal point for the broader agenda of women's empowerment in the sector.
Youth engagement & university collaborations	Designing targeted career interventions for young people and building structured collaborations with universities creates a pipeline of skilled youth entering the clean energy sector. Partnerships with institutions such as MUBS help connect academic training with real sector needs, reducing the skills mismatch that currently limits youth participation.
Gender-responsive financing instruments	Financial products need to be designed with an understanding of the specific barriers women face including limited collateral, interrupted income patterns, and disproportionate care responsibilities. Working with development finance institutions to design gender-responsive instruments is a practical step toward levelling the field.
Partnerships across the clean energy ecosystem	Addressing gender inequality in the value chain requires coordinated action from multiple actors. Collaborating with clean cooking and solar companies alongside government, associations, and development partners ensures that gender targets are embedded throughout the ecosystem rather than confined to individual programmes.
Cost sharing & certification support for women producers	Targeted cost-sharing mechanisms for standards compliance combined with direct support for women and youth producers to navigate the certification process reduce one of the most practical barriers to women's participation in formal, higher-value market segments.

Q&A Session Involving Participants

Comment / Question	Response
How do you reach women in remote villages?	We work through village savings groups, women's cooperatives, and local government structures. Radio programs in local languages are also effective.
Does the left hand know what the right hand is doing?	Coordination is improving through platforms like the National Clean Cooking Coordination Committee, but gaps remain. We're working to strengthen inter-ministerial collaboration.
How do young people learn about clean energy opportunities?	Through university partnerships, vocational training integration, youth expos, and digital platforms. More work needed to reach rural youth.

Closing Remarks: Prof. Rebecca Hanlin, EVI-SICEE Project Coordinator, University of Johannesburg

Prof. Hanlin thanked the participants for their enriching discussions and reemphasized several key themes that emerged during the discourse.

Noted that barriers to entry remained significant, explaining that credit access and value chain navigation continued to pose challenges even for established enterprises.

Observed that awareness gaps persisted, stressing that greater sensitization was needed around clean energy opportunities and business models.

Emphasized the innovation imperative, pointing out that research and commercialization of innovations were critical for advancing the participation of women and youth in the sector. Raised the sustainability question, asking what truly drove innovation and long-term viability among women and young entrepreneurs.

Confirmed that the insights generated from the workshop would inform project revisions, policy briefs, and future research directions.

Day Two: Gender In Clean Energy Learning Workshop

Opening Session

The workshop, held under the theme Demystifying Gender Equity and Social Inclusion in Clean Energy, took place at the MUBS FGSR Conference Hall and was convened by Prof. Bipasha Baruah, Canada Research Chair in Global Women's Issues at Western University. It brought together EVI-SICEE project teams, MUBS staff and students, advisory board members, and selected stakeholders.

The opening session began with a prayer led by Prof. Janet Kyogabirwe, after which Dr. Geoffrey Nkuutu welcomed participants and introduced Day 2 as an opportunity for deeper learning on gender frameworks, regional collaboration, and research communication.

Regional Progress Updates

Kenya Progress Report - Presented by Daniel Musyoka, African Centre for Technology Studies (ACTS)

Kenya's progress under the EVI-SICEE project covers two distinct but interconnected phases of the project: an evidence-generation phase built around study and research, and an applied incubation phase designed to translate those findings into tangible enterprise support.

Phase 1: Study and Evidence Generation

The first phase was anchored in rigorous evidence generation. A scoping study and comprehensive survey were completed in September 2024, producing research outputs that were subsequently published on the IDRC website. These studies provided initial understanding of the clean energy landscape in Kenya, mapping the profile of women and youth-led enterprises, documenting the systemic barriers they face, and identifying entry points for targeted intervention.

The qualitative research component was undertaken to complement the survey data and this was finalised during phase one, adding in-depth understanding to the quantitative findings. By capturing the lived experiences of entrepreneurs, the qualitative report offered insights that numbers alone could not convey: the day-to-day realities of navigating underfunded businesses, the informal strategies entrepreneurs use to stay afloat, and the aspirations that drive continued participation despite the odds.

Both reports marked an important milestone, providing the project team with an evidence base on which the incubation phase could be meaningfully designed.

Key Highlights

- **Scoping study completed in September 2024**
- **Reports published on the IDRC website**
- **Survey report finalised and published**
- **Qualitative report finalised**

Phase 2: Incubation Programme

Building directly on the evidence gathered in the first phase, the incubation programme was designed to provide hands-on, context-specific support to a selected cohort of women and youth-led enterprises. Thirteen enterprises were identified and brought into the programme, with selection guided by the research insights rather than arbitrary criteria.
This phase was a three-day intensive boot camp, structured to address the specific business development needs of the participating enterprises. Rather than applying a generic curriculum, the programme was tailored to the realities these entrepreneurs face, covering five interconnected areas: market accessibility, business competitiveness, gender sensitization, business planning, and business model development.

Market accessibility sessions helped entrepreneurs understand how to identify and reach customers more effectively, including strategies for moving beyond informal networks into more structured distribution channels. Competitiveness training focused on product quality, pricing, and differentiation equipping participants to hold their own in a crowded and increasingly commercial market. Gender sensitization, addressed the structural biases that shape how women and youth experience the sector, building awareness that translates into more confident advocacy and negotiation. Business planning and model development sessions gave participants practical tools to articulate their value propositions, project their financials, and communicate credibly with potential investors and partners.

The boot camp was not designed as a one-off event but as a starting point. Continuous learning and capacity building remain ongoing, with business model refinement and monitoring and evaluation built into the programme as sustained commitments rather than afterthoughts.

Participant Profile

The thirteen enterprises selected for the incubation programme reflect the broader reality of clean energy entrepreneurship in Kenya. The cohort is predominantly youth-led a profile that emerged organically from the selection process rather than as the result of imposed quotas. This reflects the current reality that young people are entering the clean energy space in significant numbers, due to both economic opportunities and their values around sustainability and impact.

The majority of participating enterprises operate at the micro level, characterised by limited formal systems, tight cash flows, and heavy reliance on the founder's personal networks and effort. Their primary focus is on clean cooking solutions.

Key Challenges

The evidence gathered during the study phase, and reinforced by what emerged during the incubation programme, points to three structural challenges that consistently limit the growth of women and youth-led clean energy enterprises in Kenya. These are not new challenges but their persistence, despite years of investment and intervention, underscores the need for more targeted and sustained responses.

Challenge	Context & Implication
Limited access to finance	Most micro-enterprises lack the collateral, credit history, and financial documentation required by formal lending institutions. This forces entrepreneurs to rely on personal savings, informal credit, or small grants none of which provide the working capital needed to invest in growth. Without access to appropriately designed financial products, the ceiling for enterprise development remains low.
Regulatory & policy barriers	The policy and regulatory environment, while improving in parts, continues to present obstacles for small enterprises seeking to formalise, certify their products, or access public procurement opportunities. Compliance costs are disproportionately high for micro-enterprises, and the complexity of navigating multiple regulatory requirements places a significant burden on founders who are already stretched across every function of their business.
Early-stage capacity gaps	Many enterprises enter the market with strong technical knowledge but limited business management skills. Gaps in financial literacy, strategic planning, and market development constrain their ability to grow beyond subsistence-level operations. Without structured, contextually relevant capacity building, the risk of business failure or stagnation remains high regardless of the quality of the product or the commitment of the founder.

Ongoing Activities and the Road Ahead

Continuous learning and capacity building remain key priorities of the project in Kenya, with the project team providing ongoing support to participating enterprises as they work through the challenges of implementation. The core focus is on business model refinement because the models developed during the boot camp are starting points that need to be tested against market realities and adjusted accordingly.

Monitoring and evaluation is embedded throughout, allowing the team to track progress, identify where support is needed, and generate evidence that can inform improvement in the project. This commitment to learning-by-doing reflects a broader focus within the project that building sustainable enterprises requires sustained accompaniment, not one-off interventions.

The most important finding from Kenya's progress to date is not simply that women and youth face barriers that much was already known. It is that these barriers are concentrated at a specific point in the enterprise journey: the transition from survival to growth. Most women and youth in Kenya's clean energy sector are already in the market. They have identified an opportunity, built a product, and found some customers. What they lack is the support needed to move from that fragile early stage to something more durable. The incubation programme is designed precisely to address the early signs are that, with the right support, these enterprises are capable of much more than the system has so far allowed them to achieve.

South Africa Progress Report – Presented by Ann Numi and Prof. Rebecca Hanlin from University of Johannesburg

The South African team shared progress on their study focusing on small and medium-sized enterprises (SMEs) in the clean energy sector. The scoping study has been completed and is currently under review,with plans to upload it to the IDRC website.

Unlike Kenya and Uganda, where clean cooking enterprises are a prominent feature of the clean energy landscape, South Africa's market is characterised by a more limited presence of clean cooking SMEs. The research focus is on solar and biogas enterprises, which South African entrepreneurs are more actively engaged in Johannesburg.

Study Focus and Methodology

The research adopted a qualitative case study approach, drawing on key informant interviews with enterprise founders, managers, and associated stakeholders. Four enterprises were profiled two operating in the biogas space and two in the solar sector.

Thematic analysis was applied to the data gathered across the four cases, allowing the research team to identify both the unique circumstances of each enterprise and the common patterns that cut across them. This dual lens enriches the findings and makes them more actionable for policy and programme design.

Four enterprises were profiled two biogas, two solar, representing a mix of women-led and youth-led organisations in the Johannesburg area. Thematic analysis was used to surface both enterprise-specific insights and cross-cutting patterns.

Case Study Profiles

Each of the four enterprises profiled offers a distinct window into the realities of building and sustaining a clean energy business in South Africa's current operating environment.

Case 1: Amahlathi Eco-Tech: Solar Home Systems

Amahlathi Eco-Tech is a solar enterprise distinguished by its development of innovative hotspot device technology a solution designed to expand affordable energy access in underserved communities. The enterprise demonstrates clear technical creativity and a genuine commitment to last-mile service delivery. However, its journey illustrates a challenge that is all too familiar in the clean energy sector: the gap between a promising innovation and the conditions needed to bring it to sustainable scale. The organisation has experienced a significant contraction in its workforce from 15 employees to 6 a reduction that reflects not a failure of vision but the compounding pressures of an environment that has not yet been designed to support enterprises like this one.

Key Challenges

- Certification requirements that are costly and complex to navigate
- High operational costs eroding margins
- Scaling difficulties leading to workforce reduction

Enabling Factors

- Innovative product offering with clear market relevance
- Demonstrated ability to operate in last-mile contexts
- Strong technical foundation as a base for future growth

Case 2: Kaeane Renewable Energy Developers: Biogas

Kaeane Renewable Energy Developers operates across a range of institutional and household contexts, installing biogas systems for homes, hotels, schools, farms, and lodges. This breadth of customer reach is a genuine strength, reducing dependence on any single market segment and demonstrating the versatility of biogas as a solution across different scales of need. Nevertheless, the enterprise faces a cluster of challenges that are structural rather than operational: financing constraints limit its ability to take on projects at the pace the market would otherwise support; technical expertise remains in short supply; and a lingering mistrust of biogas technology among potential customers combined with cash flow delays in the payment cycle creates a persistent drag on financial sustainability.

Key Challenges

- Limited access to financing for project delivery
- Shortage of trained technical personnel
- Market mistrust of biogas technology among new customers
- Cash flow delays creating financial pressure

Enabling Factors

- Diversified customer base across sectors
- Demonstrated capacity to operate at different scales
- Strong operational track record as evidence base for financing

Case 3: Tshilidzi Tshawe Cooperative / His Grace: Youth-Led Biogas Enterprise

Tshilidzi Tshawe Cooperative operates under the name His Grace and represents one of the more distinctive cases in the South African portfolio: a youth-led biogas enterprise that has made competence-based hiring a deliberate organisational principle. Rather than relying solely on personal networks or informal recruitment, the cooperative selects staff on the basis of demonstrated skills and capability. This approach, while admirable, has not shielded the enterprise from the broader market conditions that constrain youth-led ventures. Limited capital, low public awareness of biogas as a viable energy option, and a consequently restricted market demand all weigh on the enterprise's ability to grow — challenges that are as much about the ecosystem around the enterprise as they are about the enterprise itself.

Key Challenges

- Limited capital constraining operations and growth
- Low public awareness of biogas technology
- Restricted market demand in the immediate operating area

Enabling Factors

- Competence-based hiring building a capable internal team
- Youth leadership bringing energy and adaptability
- Community roots supporting trust and local legitimacy

Case 4: Kusini Water: Solar-Powered Water Kiosks

Kusini Water takes a community-centred approach to solar energy deployment, operating mobile water kiosks powered by solar panels and managed by local individuals referred to as 'water champions.' This model is innovative on multiple levels: it combines clean energy with water access, creates local employment, and embeds service delivery within community structures rather than imposing it from outside. The 'water champion' model is particularly noteworthy — it generates local ownership, accountability, and income simultaneously. However, the enterprise faces two challenges that its community-based model alone cannot resolve: the physical theft of solar panels, which undermines the technical integrity of the system, and limited entrepreneurial skills among kiosk operators, which constrains their ability to manage the business dimensions of their role effectively.

Key Challenges

- Theft of solar panels disrupting operations
- Limited entrepreneurial and business management skills among operators

Enabling Factors

- Innovative community-based model generating local ownership
- Dual impact: clean energy and water access combined
- Water champion' approach creating local employment and accountability

Cross-cutting Challenges

While each enterprise faces distinct pressures, the four case studies reveal a set of challenges that are shared across the portfolio.

Challenge Area	Explanation
Access to Finance	Across all four cases, the inability to access appropriately designed financing emerges as a primary constraint on growth. Clean energy enterprises in South Africa particularly those that are women- or youth-led frequently lack the collateral, credit history, and formal documentation required by conventional lenders. Without access to working capital and investment finance, enterprises cannot take on larger projects, hire additional staff, or invest in the quality improvements needed to expand their market reach.
Technical Expertise	A shortage of trained technical personnel is a recurring constraint, particularly in the biogas segment. South Africa's technical education and vocational training systems have not yet produced a sufficient pipeline of skills for the clean energy sector. This forces enterprises to invest heavily in on-the-job training or to operate with skills gaps that limit both quality and growth capacity.
Gender & Inclusion Barriers	Women and youth face additional layers of difficulty in accessing finance, navigating regulatory systems, and being taken seriously in technical and commercial negotiations. These barriers are not merely perceptual they are reflected in the practical experiences of the enterprises profiled, where gender and age intersect with systemic constraints to produce compounded disadvantage.
Certification & Regulation	Certification and regulatory compliance represent significant cost and complexity burdens for small enterprises. The systems in place were largely designed for larger, more formally structured organisations, and the resources required to meet their requirements are disproportionate for micro and small enterprises. Until these systems are adapted, certification will remain a barrier rather than an enabler for many women- and youth-led businesses.

Enabling Factors

Despite the challenges, the cases also demonstrate that growth is possible under the right conditions. Several enabling factors emerge consistently from the case studies, factors that are not unique to any one enterprise but that appear to make a difference.

Enabling Factor	How It Makes a Difference
Institutional Ecosystem Support	Access to a strong institutional support ecosystem including research institutions, incubators, and sector associations provides enterprises with resources, networks, and legitimacy that would otherwise be beyond their reach. The involvement of the University of Johannesburg as both a research partner and a source of technical knowledge is itself a reflection of this enabling dynamic.
Research Partnerships & Mentorship	Formal research partnerships bring more than data: they bring structured mentorship, connections to wider networks, and the kind of sustained attention to an enterprise's challenges that is rarely available through market mechanisms alone. For the enterprises in this study, the research engagement has itself served as a form of capacity building.
Strategic Collaborations	Enterprises that have developed strategic relationships with complementary organisations whether private sector partners, NGOs, or community structures are better positioned to weather market volatility and access resources they cannot generate internally. These collaborations also expand market reach and build the credibility that opens doors to financing and institutional contracts.
Government Support for Women Entrepreneurs	Where government programmes have been designed specifically to support women entrepreneurs through grants, preferential procurement, or targeted capacity building they have made a tangible difference. The challenge is that such support remains uneven in its coverage and not always aligned with the specific operating realities of clean energy enterprises.

Lessons Learned

South Africa's experience offers lessons that extend beyond the country's borders and speak to the wider ambitions of the EVI-SICEE project. The four enterprises profiled are representative of a broader population of clean energy SMEs that are doing important work under difficult conditions—and whose potential remains significantly under-realised.
Three themes stand out. First, systematic support matters more than episodic intervention. The enterprises that are managing best are those that have access to sustained, structured support—not just a one-off grant or a single training programme.

Second, long-term partnerships between enterprises, research institutions, government, and the private sector are a prerequisite for sustainability. The clean energy transition in South

Africa will not be achieved through individual enterprise success; it will require the patient construction of relationships that distribute risk, pool resources, and create shared accountability for outcomes. Third, community-based models, as demonstrated by Kusini Water's "water champion" approach, hold promise for combining energy access with economic inclusion. These models deserve more deliberate investment and documentation.

The most important lesson from South African case studies is that the barriers these enterprises face are structural, not personal. The entrepreneurs profiled are skilled, motivated, and innovative. What constrains them is not a lack of ambition but the absence of an operating environment designed to support businesses of their size, ownership profile, and sector focus. Addressing that gap through finance, regulation, skills development, and institutional support is the central task ahead.

Malawi Progress Report - Presented by Dickson Bota, Mzuzu University

The Malawi progress report focused on a research study on financing and business models in the clean energy sector, with particular attention to the experiences of youth and women entrepreneurs. The study was currently in its final analytical stages, with quantitative data processing ongoing and qualitative work continuing in parallel.

The country's clean energy landscape has its own particular characteristics: a sector that skews strongly towards youth, a relatively low level of female entrepreneurial participation, and a skills and education profile that differs meaningfully from some of its regional counterparts.

Study approach and scope

The research draws on a comprehensive scoping exercise focused specifically on financing and business models. This thematic focus on understanding what enterprises exist, how they sustain themselves financially and how they are organized to deliver value is essential for designing interventions that will actually work.

The quantitative phase of the study surveyed 905 entrepreneurs. This study provides a level of statistical depth that allows the research team to draw more confident conclusions about sector-wide patterns.

The qualitative component adds interpretive richness providing the motivations, constraints, and strategies of entrepreneurs in their own words and framing the numbers within the lived reality of running a clean energy business in Malawi. Both streams of analysis are currently in progress, and the final integrated findings will inform the design of capacity building programmes and financing approaches tailored to the context of Malawi.

Study Snapshot

Research Focus: Financing and business models in the clean energy sector

Survey Scale: 905 entrepreneurs surveyed across multiple regions

Methods: Quantitative survey combined with ongoing qualitative research

Policy Component: Review of clean energy policy frameworks to identify gaps

Current Status: Final quantitative and qualitative analyses in progress

Intended Output: Evidence to inform capacity building and financing approaches

Key Findings

While the full analytical results are still being finalised, the data gathered to date indicates several insights that are significant both for Malawi and for the wider regional picture. These early insights are summarised below:

Finding	Explanation
Youth dominance in the sector	The clean energy sector in Malawi is largely youth-dominated, a pattern that reflects both the demographic realities of the country and the energy and enterprise spirit that young people are bringing to the sector.
Low female participation	The participation of women entrepreneurs in the sector remains low, although the study notes that a number of women who have engaged are doing so successfully. The low overall participation but strong performance among those who are present is an important signal. It suggests that while the barriers facing women are significant, they can be overcome with the right support. Understanding what has enabled the women who are participating to succeed is as important as understanding what is keeping others out.
Education profile	The education levels of entrepreneurs surveyed in Malawi are comparatively lower than those observed in Kenya. This finding has direct implications for how support programmes are designed and delivered.

Common Challenges

Across the 905 entrepreneurs surveyed, three challenges emerge and they are not unique to Malawi.

Challenge	Explanation
Limited sales capacity	Many entrepreneurs struggle to convert their products and services into consistent revenue. This reflects a gap in sales skills, market knowledge, and customer relationship management that is common among early-stage enterprises operating without formal business training.
Low market visibility	A significant proportion of enterprises operate within their immediate circle (family, neighbors, a few loyal customers) but are invisible to the broader market especially the bigger buyers, distributors, investors, and development partners who could accelerate their growth. Low visibility is partly a function of limited marketing resources.

Inadequate technical & financial support	Entrepreneurs report that the technical and financial support available to them is either insufficient in quantity, poorly matched to their needs, or both. Technical assistance that does not account for the educational profile and practical realities of the entrepreneurs. Similarly, financing instruments designed for more formally structured enterprises will not reach the micro and small businesses that make up the majority of the sector.

Policy Review

The study includes a systematic review of the policy and regulatory frameworks governing clean energy in Malawi. The purpose of this review is to map the existing landscape of policy commitments and instruments, and to identify the gaps. In many cases, the challenges that entrepreneurs face are the consequence of a policy environment that has not yet been adequately aligned to support inclusive clean energy entrepreneurship. Identifying those gaps is a prerequisite for recommending the interventions that will make a practical difference, and for engaging government and other policy actors.

Status and the road ahead

The final stages of quantitative analysis are currently underway, and qualitative data collection and interpretation is going on in parallel. Once both streams are complete, the integrated findings will be combined into a comprehensive country report that reflects the full depth and breadth of the evidence gathered. The insights from Malawi will directly inform the design of capacity building programmes and financing approaches.

Q&A Insights

Emerging questions from the presentations and respective responses are summarised in the table below:

Comment / Question	Response
How were the four case studies identified in SA?	Purposive selection based on innovation, gender representation, and willingness to participate in research.
Most South African businesses are formal yet face capacity challenges—how does this align?	Formal registration doesn't guarantee entrepreneurial capacity; many need business development support.

What are next steps for linking insights across countries?	Comparative analysis planned to identify common barriers, unique solutions, and policy lessons
I note different framings across countries—how will this be harmonized?	Entrepreneurship as a unifying lens; acknowledging context-specific variations.
What role does South Africa's economy play compared to Malawi/Uganda?	Economic disparities significant; lessons must be adapted to local contexts.
Do you have plans to publish the findings?	Teams are invited to collaborate on joint publications

Student Presentations by Project Research Fellows

The student presentations segment, chaired by Professor Christine Simiyu of KCA University, provided a platform for four project research fellows three at Master's level and one PhD student to share progress updates on their ongoing studies. Each presentation was followed by a question and answer session, during which supervisors, senior researchers, and fellow participants offered feedback and guidance.

Prisca Mulinge: Master's Student from Kenya

Topic: Gender Dynamics in the Bioethanol and Clean Cooking Value Chain

Mulinge's research falls at the intersection of gender studies and clean energy, focusing specifically on the bioethanol and clean cooking value chain in Kenya. Her study examines how gender shapes participation, decision-making, and access to opportunities at different points along the value chain from production and distribution through to the end user. By placing gender at the centre of the analysis, the research aims to move beyond simply counting women's presence in the sector and towards understanding the structural dynamics that determine whether that presence is meaningful and equitable.

The study also had a particular focus on identifying both the barriers that limit women's participation in biomass energy and the enablers that have allowed some women to engage actively and successfully. Understanding what works, and under what conditions, is as important as understanding what constrains.
The study employs a qualitative methodology, combining key informant interviews, semi-structured interviews, and focus group discussions. This combination of methods allows the research to capture institutional perspectives alongside individual experiences, and to triangulate insights across different types of participants. At the time of the meeting, data collection was actively underway.

Hafswa Nakibuuka: Master's Student — Makerere University Business School, Uganda
Topic: Technology Attributes and User Awareness among Women and Youth-led Clean Cooking Enterprises in Uganda

Nakibuuka's research addresses a question that is practically significant: what is the relationship between the technical characteristics of clean cooking products, how well users understand those characteristics, and whether those products are ultimately accepted and adopted in the market? Her study focuses on women and youth-led enterprises in Uganda, a context in which clean cooking technologies are increasingly available but adoption remains uneven and often below expectations.

Her findings indicate that user awareness is important because when users have a clear and accurate understanding of what a technology does, how it works, and what benefits it offers, adoption rates improve. But awareness alone is not sufficient. Financing options and policy support emerge as critical enabling factors particularly for the women and youth entrepreneurs who expressed interest to use these technologies but lack affordable finance to do so sustainably. The research also highlights the importance of user-centric design, products that are developed with an understanding of how they will actually be used, by whom, and in what contexts are more likely to succeed than those designed primarily around technical specifications.

Key Findings

Finding	Description
Awareness drives adoption:	Users who understand how clean cooking technologies work and what they offer are significantly more likely to adopt them. Communication and education strategies must therefore be treated as core components of market development.
Financing and policy support are critical for scale:	Financing and policy support are critical for scale: Without access to appropriate financing and a supportive policy environment, even well-designed and well-understood products struggle to reach the scale needed to make a meaningful difference.
User-centric design matters:	Products and solutions designed with a deep understanding of the specific needs, constraints, and usage patterns of women and youth are more likely to achieve sustained adoption.

Hafswa expressed her gratitude for the support she has received from IDRC and ACTS throughout her research journey. She also shared that she intends to pursue doctoral studies in clean energy, reflecting her commitment to the field.

Lucy Nabangala: Master's Student from KCA University, Kenya

Topic: Women's Participation in Solar Energy Enterprises in Kenya

Lucy's study examines women's participation in Kenya's solar energy enterprise sector, using a mixed methods approach that combines quantitative and qualitative data to provide a clear picture of how women engage with this segment of the clean energy market. Her research draws attention to patterns that are easy to overlook when the analysis focuses only on whether women are present, rather than on the quality and conditions of that presence.

One of the most striking findings is the concentration of women in sales roles rather than in manufacturing or technical functions. This finding mirrors what is observed more broadly across the clean energy sector and indeed across many sectors in the formal economy where women are visible at the customer-facing end of the value chain but largely absent from the technical and production end. Understanding why this concentration exists, and what it means for women's income, mobility, and long-term career development, is a question the research engages with directly.

Key Findings

Finding	Description
Role concentration in sales	Women are predominantly engaged in sales and customer-facing roles, with limited representation in manufacturing, installation, or technical positions. This shapes their income potential and their opportunities for skill development.
Demanding working hours	Extended working days of ten to twelve hours are common among women in these enterprises and this has significant implications for wellbeing, work-life balance, and the sustainability of participation over time.
Ownership and age dynamics	Most business owners are adult women, while youth both male and female tend to occupy operational and frontline roles. This distinction between ownership and operation is an important fact that aggregate statistics tend to ignore.
Pay-as-you-go dominates	The pay-as-you-go model is the most widely used payment mechanism in the sector, reflecting both the income patterns of customers and the need for accessible financing structures that match how households actually manage money.

Local sourcing is emerging	There are early signs of a shift towards local product sourcing among enterprises in the sector, a trend that could have positive implications for supply chain resilience and local economic development.

Dickson Bota: Second-Year PhD Student from Mzuzu University, Malawi
Topic: Critical Analysis of Solar and Clean Cooking Businesses Led by Women and Youth: Toward Innovative Business Models

Dickson's doctoral research focuses on one of the most important and underexplored questions in Malawi's clean energy sector: what business models are actually being used by women and youth-led solar and clean cooking enterprises, and how can those models be made more innovative, resilient, and effective? His study begins from the recognition that clean energy access remains a major challenge in Malawi, and that the enterprises trying to address that challenge are doing so in an environment characterised by limited capital, constrained markets, and a policy context that has not always been designed with them in mind.

The research employs a mixed methods approach, deliberately targeting four cities including Mzuzu, Lilongwe, Zomba, and Blantyre. This will ensure geographic representation and captures the variation in enterprise contexts that exists across urban Malawi. Snowball sampling was used to build the sample of the study, a method well-suited to a population that is not formally registered and therefore difficult to reach through conventional lists or databases. Data collection had been completed at the time of the meeting, with analysis actively underway.

Dickson acknowledged immense financial support from IDRC and ACTS, and indicated his intention to pursue publication and dissemination of his findings. This commitment will ensure the insights from his work contribute to the broader evidence base available to researchers, practitioners, and policymakers working in this space.

In addition to the four core student presentations, Florence Nakajubi a PhD student from Makerere University shared pilot results from her experimental research on the communication of low carbon solutions as part of the transition to cleaner energy systems. Her work examines how information about low carbon technologies is framed and conveyed, and what communication approaches are most effective in shifting awareness, attitudes, and behaviour among different target audiences. The pilot results offered a preliminary but promising indication of the directions her research is taking, and her presentation was well received as a complement to the enterprise-focused studies presented by project research fellows.

Collective Feedback to Research Fellows

1 Theoretical framing

Participants were encouraged to ground their research in appropriate theoretical frameworks, particularly when examining the root causes of women's marginalization in the clean energy sector. Feminist theories including those that address structural power, intersectionality, and gendered access to resources offer conceptual tools that can deepen the analysis and situate individual findings within a broader understanding of why inequality persists. Theory is not an academic formality; it is what allows a researcher to explain not just what is happening but why, and to make arguments that are both convincing and generalizable beyond the immediate study context.

2 Typologies of entrepreneurship

Researchers were advised to engage with emerging typologies in the entrepreneurship literature, particularly the distinction between direct entrepreneurship (where individuals actively choose to start a business), indirect entrepreneurship (where enterprise activity emerges as a by-product of other roles or activities), and induced entrepreneurship (where external pressures such as unemployment or necessity drive business formation). Benchmarking the study findings against these categories helps to contextualize the kind of entrepreneurship being observed and to make more precise claims about what is driving women's and youth's entry into the clean energy enterprise space.

3 Conceptual clarity

Students were asked to provide clear and consistent definitions of core terms, particularly the distinction between a 'business' and an 'enterprise.' These words are often used interchangeably in everyday language, but in research contexts they can carry different implications relating, for instance, to scale, formality, ownership structure, or the presence of paid employees. Establishing working definitions early and applying them consistently throughout the research helps readers follow the argument and enhances the credibility of the findings.

4 Communicating research clearly to a diverse audience

A recurring theme in the feedback was the importance of communicating research in a way that brings the audience along regardless of whether that audience is composed of academic peers, development practitioners, or policymakers. Researchers were encouraged to avoid assuming shared knowledge and to invest in clear, accessible writing and presentation that explains not only what was found but why it matters. The ability to communicate complex ideas simply and compellingly is one of the most valuable skills a researcher can develop.

5 Applying the most relevant theories

Students were advised to be explicit about the theoretical frameworks that underpin their work not simply referencing them in passing, but articulating how those theories inform the design, analysis, and interpretation of findings. Writing out the theoretical logic clearly, early in the research process, helps to ensure consistency throughout the study and makes it easier for readers to understand and evaluate the reasoning behind the findings.

6 Integrating practice into research

Students were also encouraged to ensure that their research maintains a strong connection to practice in terms of real decisions, challenges, and contexts of the entrepreneurs, communities, and institutions they are studying. Research that is richly theoretical but disconnected from practical reality risks producing insights that are interesting to read but difficult to act on.

Training Session: Gender Equality In Clean Energy

Session One: Status of Gender Equality in the Global Clean Energy Sector

Prof. Bipasha Baruah, Western University

Topic: Gender Equality in Low Carbon Economies

Professor Bipasha Baruah of Western University began her presentation by tracing the intellectual journey that brought her to the intersection of gender equality and low carbon economies.

Her engagement with this topic began after attending a conference in 2013, where she found herself comparing the established culture and workforce composition of the oil and gas industry with what was then an emerging landscape of clean energy sectors including wind, solar, hydro, and biomass. The contrast she observed sparked a research interest that has shaped her work ever since.

Professor Baruah anchored her presentation in the Sustainable Development Goals, drawing particular attention to the relationship between SDG 5 (Gender Equality) and SDG 7 (Affordable and Clean Energy). Her central argument was that these two goals are not merely parallel ambitions but they are closely connected and progress in one can drive improvement in the other. Progress on gender equality creates the conditions for more inclusive and effective clean energy delivery, while the clean energy transition, if designed thoughtfully, can serve as a powerful vehicle for advancing women's economic participation and leadership.

Prof. Baruah highlighted findings from an International Renewable Energy Agency (IRENA) global survey that examined gender participation in renewable energy. The survey revealed that the renewable energy sector is performing better than the fossil fuel industry in terms of gender inclusion. However, most of the positions held by women are in administrative or support roles, with relatively few women in technical or leadership positions. Among the renewableenergy sub-sectors, solar energy stands out for generating the highest employment for women. The survey was conducted onlineand largely coveredthe formal sector, which means it did not fully represent the realities of developing countries. For instance, the data showed that about 93.9% of respondents were men.

Insights from the IRENA Global Survey

A significant portion of Professor Baruah's presentation drew on findings from a global survey conducted by the International Renewable Energy Agency (IRENA) on gender participation across the renewable energy sector. The survey offers a valuable snapshot of where the sector stands on inclusion, and its findings are both encouraging and sobering in equal measure.
On the positive side, renewable energy outperforms the fossil fuel industry when it comes to gender inclusion, and solar energy in particular stands out as the sub-sector generating the most employment for women. These are meaningful differences, and they suggest that the clean energy sector has, at least created more space for women than the fossil industry.

However, Professor Baruah was careful not to let these positives cover a more uncomfortable reality. The majority of women in the renewable energy workforce are concentrated in administrative and support functions, with a much smaller proportion in technical, operational, or leadership roles. This pattern reflects structural features of how organisations are designed and how opportunity is allocated, and it will not correct itself without deliberate intervention.

The methodological limitations of the survey are also significant and were raised explicitly. Because it was conducted online and drew primarily from the formal sector, it systematically underrepresented the experiences of workers in developing countries, where informality is the norm rather than the exception. The demographic profile of respondents was striking: 93.9 percent were men, with the most common first names in the dataset being John, David, and Robert. This is not merely a statistical footnote it is a reminder that surveys designed and distributed in ways that mirror existing power structures will inevitably reproduce those structures in their data.

Positive Findings	Limitations & Gaps
• Renewable energy outperforms the fossil fuel sector on gender inclusion • Solar energy generates the highest female employment of all sub-sectors • Growing recognition of the need for gender-disaggregated workforce data	• Most women remain in administrative or support roles, not technical or leadership positions • Survey was conducted online and skewed heavily towards the formal sector • Realities of developing country particularly the informal sector are underrepresented • 93.9% of respondents were men, with common names including John, David, and Robert

Leadership, STEM, and the Promotion Paradox

Professor Baruah turned her attention to the question of career advancement, identifying a structural bias that shapes who gets promoted and on what basis. In many organisations and particularly in technically oriented sectors like energy, opportunities for promotion are disproportionately channeled towards individuals with STEM backgrounds. This reflects an entrenched assumption that technical qualifications are superior to other forms of knowledge and expertise, and that those who hold them are more deserving of leadership roles.

The consequences of this bias for women are significant. Women remain underrepresented in STEM education globally, and in many countries the gap is particularly pronounced in engineering and the physical sciences. She cited Canada's national target to have at least 30 percent female engineering graduates by 2030 as one example of a government-level effort to address this imbalance. But noted that setting targets, while important, does not by itself change the underlying assumptions about which skills are valued and which careers are considered credible paths to leadership. This creates additional barriers for women seeking advancement in the energy workforce.

Professor Baruah argued that the clean energy sector needs to challenge the hierarchy that places technical knowledge above other forms of expertise. Community engagement, financial management, organisational leadership, and social mobilisation are all essential capabilities for a successful energy enterprise and they are capabilities in which women are often exceptionally well represented. A sector that fails to recognise and reward this breadth of contribution will continue to leave talent on the table.

Women in Renewable Energy: Sub-Saharan Africa

Professor Baruah shared findings from a subsequent study conducted in partnership with IRENA, focusing on women's participation in the renewable energy workforce across sub-Saharan Africa. The findings from this study were described as counterintuitive in places, and they challenge some of the assumptions that commonly underpin gender and energy programming.

The findings from this study revealed that gender equality in the sector can sometimes be counterintuitive. One of the first findings was the persistence of misperceptions that men are better suited for technical energy roles than women. These misperceptions are not simply matters of individual bias; they are reinforced by hiring practices, workplace cultures, and educational pathways that consistently signal to women that certain roles are not for them.

A second counterintuitive finding concerned the preference for employment over entrepreneurship. It showed that many people, especially women, prefer wage employment over entrepreneurship due to the security it offers, even though self-employment presents valuable opportunities. This is a significant insight for programmes that assume entrepreneurship is the obvious or natural pathway for women's economic empowerment in the energy sector. Where social protection systems are weak and financial safety nets are thin, the risk profile of entrepreneurship becomes too high for many women to accept, regardless of the opportunity it might represent. Prof. Baruah emphasized the need for stronger social protection systems and gender-responsive labor policies to support women's participation, especially as the nature of work continues to change.

The Future of Work and the Clean Energy Transition

Professor Baruah further situated her analysis within a broader discussion of how the nature of work is changing. She explained that work in the clean energy sector is becoming more flexible, with increasing opportunities for part-time, remote, and gig-based employment. This transformation, she argued, holds genuine potential for gender equity, particularly for women who carry disproportionate domestic and caregiving responsibilities.

At the same time, Professor Baruah was clear about the risks that accompany this flexibility. Gig and contract work often comes without benefits, social protection, or pathways to advancement, conditions that can trap workers in precarity rather than opening doors to opportunity. Ensuring that flexibility works for women, rather than simply increasing their vulnerability, requires deliberate policy design and employer accountability.

She also raised the frequently overlooked dimension of the just transition. She noted that as countries transition to renewable energy, attention must be given to workers affected by the decommissioning of fossil fuel projects to ensure that both men and women benefit from retraining and new job opportunities. Retraining programmes and new employment pathways must be designed with gender equity explicitly in mind to ensure that the transition does not entrench existing inequalities under new conditions.

Conclusion

Professor Baruah concluded by reframing what gender equality in the clean energy transition actually means. It is not simply a numbers game. She argued that increasing the proportion of women in the energy workforce is a necessary but insufficient measure of progress. True gender equality requires women's presence in decision-making and leadership roles at the table where strategies are set, investments are directed, and policies are shaped.

Achieving this requires a combination of interventions: inclusive and gender-responsive policies, equitable access to STEM education, recognition of the full range of skills and career paths that contribute to a functioning energy sector, and social protection systems strong enough to make participation genuinely viable for women. Professor Baruah recommended the book Pitfall as a companion resource for participants seeking to deepen their understanding of the complexities of equitable transitions. A text she described as a useful and honest engagement with the difficult trade-offs involved.

Gender equality in the clean energy transition is not achieved by counting women in the workforce. It is achieved when women occupy the positions where decisions are made, resources are allocated, and futures are shaped.

Q&A Session Involving Participants

The presentation generated a rich discussion. Participants raised observations and questions that pushed the analysis beyond the formal sector and into the practical realities of communities, enterprises, and individuals navigating the clean energy transition on the ground. The following captures the key contributions from participants.

1 The role of infrastructure in communities

A participant emphasized the importance of physical infrastructure as a precondition for clean energy adoption and enterprise development at the community level. Without reliable roads, stable electricity supply, and accessible markets, even the most promising clean energy solutions struggle to reach the people who need them most. The observation was an important reminder that gender-responsive energy programming cannot focus solely on the enterprise or the individual, it must also engage with the infrastructure environment within which they operate. In many rural and peri-urban communities, infrastructure deficits compound the barriers that women and youth already face, making the distance between a viable idea and a sustainable business even harder to bridge.

2 Gendered gaps in protective equipment and occupational inclusion

A participant raised a point about protective gear specifically the observation that equipment designed for “mums” is available in Kenya but not in Uganda. This example may seem minor in isolation, but it points to something significant that workplaces in the energy sector are still largely designed around male bodies and life patterns. When the physical infrastructure of a workplace — including the equipment required to do the job safely does not accommodate women's realities, it sends a message about who belongs and who does not. Addressing gender inequality in the energy workforce therefore requires attention not only to hiring policies and promotion pathways, but to the basic material conditions of the workplace itself.

3 Access to available data

A participant requested access to the underlying data from the research projects referenced in the presentation, including the IRENA surveys and the sub-Saharan Africa study. Making primary data available to researchers, practitioners, and policymakers allows findings to be interrogated more deeply, adapted to local contexts, and built upon in ways that strengthen the overall evidence base.

4 Addressing both formal and informal settings in project design

A question was raised about how the project intends to engage with both formal and informal settings in sub-Saharan African economies, where the majority of women and youth in the energy sector operate outside formal employment. This is because research and programming that focuses predominantly on the formal sector will systematically miss the experiences of informal enterprises who often face the steepest barriers to financing, to certification and to market access. Any serious effort to advance gender equality in the clean energy sector must develop methods and interventions that are explicitly designed to reach and serve the informal economy.

5 The need for clarity and completeness in project responses

A participant expressed need for clarity and completeness in how the project responds to the questions it has set out to answer. That research should not only ask good questions but should also be transparent and thorough in how it reports its findings including findings that are ambiguous, contested, or incomplete. In a field as politically and practically complex as gender and clean energy, partial or hedged answers can miss out on a number of valuable insights. Participants expect that the project will communicate its conclusions with sufficient depth and precision to be genuinely useful for decision-making.

6 What changes when the focus shifts to the informal sector

Building on the earlier discussion about formality and informality, a participant probed more specifically at what actually changes methodologically, analytically, and in terms of policy recommendations when the informal sector becomes the primary lens rather than an afterthought.

7 Who takes responsibility for entrepreneurship education?

A participant asked a question on who is responsible for educating people and particularly young people and women about the value and viability of entrepreneurship as a career path? This is a question about which institutions carry the mandate for building entrepreneurial culture and confidence, and whether those institutions are currently fulfilling that mandate in ways that are accessible and relevant to the people who would benefit most.

8	The importance of intersectionality alongside gender

Another important observation was raised about intersectionality, the recognition that gender does not operate in isolation from other dimensions of identity and experience, including race, ethnicity, disability, age, geographic location, and socioeconomic status. Focusing on gender alone risks producing analysis and interventions that are accurate for some women but irrelevant or even counterproductive for others. A woman who is young, rural, and from a marginalised ethnic community faces a substantially different set of barriers from a woman who is urban, educated, and professionally networked even within the same country and the same sector. The analysis will be more robust, more equitable, and more impactful if intersectionality is treated not as an optional add-on but as a core analytical lens.

Session 2: Demystifying Gender Equality and Social Inclusion

Prof. Bipasha Baruah began by noting that addressing poverty alone does not automatically lead to gender equality. Poverty reduction initiatives must be complemented by deliberate efforts that recognize gendered power relations, access to resources, and structural inequalities. She emphasized that gender equality requires intentional policy design, informed by evidence and context-specific understanding rather than general assumptions.

She underscored the importance of using empirical evidence and clear indicators to measure progress in gender and social inclusion. Indicators, she argued, help determine whether interventions truly promote equality or merely reproduce existing disparities. She cautioned that without robust data, many well-intentioned projects risk masking inequality instead of transforming it.

To guide participants in communicating their ideas effectively, she introduced the **"SUCCESS"** framework for writing concise and impactful pieces under 700 words. The acronym stands for:

S – Simple: Focus on the core idea and avoid unnecessary complexity.
U – Unexpected: Present surprising or thought-provoking facts to capture attention.
C – Concrete: Use specific examples and real-world cases to make abstract ideas tangible.
C – Credible: Support arguments with reliable, verifiable sources to build trust.
E – Emotional: Connect with readers on a human level rather than relying solely on academic tone.
S – Stories: Use storytelling to make messages relatable and memorable.

Prof. Baruah encouraged participants to think critically about why their audience should read their work, what makes it valuable, unique, or inspiring. She explained that communicating research and advocacy in the clean energy space is not just about presenting facts but about persuading people to care and act. And tasked each individual to write a short article of about 700 words.

Closing Session

Remarks by Dr. Geoffrey Nkuutu, Deputy Dean, Faculty of Graduate Studies & Research, MUBS

The Dean expressed gratitude to all participants for their active involvement and welcomed them to Makerere University Business School. He emphasized the importance of partnerships as a key driver for progress and encouraged continued collaboration beyond the training. He urged participants to maintain follow-ups and share their validation comments to support ongoing improvement and learning. In conclusion, he thanked everyone for their contributions and officially declared the training closed, commending the teamwork and commitment shown throughout the program.

Vote of thanks by Daniel Musyoka; African Centre for Technology Studies (ACTS)

Daniel expressed heartfelt gratitude to everyone who made the training a success, beginning with thanks to the Almighty God for enabling all participants to attend and complete the program. He extended appreciation to representatives from all participating countries for their valuable contributions and active engagement. Special thanks were given to Prof. Bipasha Baruah for her insightful and inspiring sessions, which enriched the discussions on gender equality and clean energy. He also commendedHarriet and the coordination team for their excellent organization and support throughout the event. He concluded by noting that he was leaving the program with greater knowledge and perspective than when he arrived.

Review of participants assignments

Participants presented progress on the assigned task of crafting a blog and conversational articles.

Key Points from the Session on Reviewing Participants' Assignments

During the session on reviewing participants' assignments, facilitators emphasized the importance of clarity in writing, urging participants to make their arguments and perspectives explicit and to clearly indicate who was speaking. They highlighted that titles played a critical role in shaping the accessibility of research, noting that titles should be short, clear, and reflective of the main idea, since longer titles made it harder for readers to locate or understand the focus of the work. The discussion also underscored the value of writing and sharing research with the wider world as a means of contributing to knowledge and professional growth. Participants were reminded that publishing opportunities were limited and therefore should be seized whenever possible. They were encouraged to make use of library resources to learn how to access and publish articles, and to explore open access platforms as a way of increasing the visibility and accessibility of their research.

Remarks from Ms. Sarah Kyejjusa and Ms. Grace Migisha Adella

Ms. Sarah extended warm greetings to all participants and facilitators. She serves as the deputy director at the entrepreneurship and incubation Centre and works with the faculty of Commerce, where she teaches Accounting and Finance.

She expressed her sincere appreciation to Dr. Ann for her effort in bringing the project to Uganda, noting the value it adds to academic and professional collaboration. She also thanked all participants for sparing their time and travelling to be part of the workshop, commending their commitment and active participation throughout the sessions.

The session also included an interactive moment when Ms. Adella Migisha taught participants a chicken dance, which added an element of fun and energized the group.

A word of appreciation from Dr. Ann

Dr. Ann expressed her heartfelt appreciation to all who contributed to the success of the workshop. She extended special thanks to the Principal and Dr. Nkuutu for their leadership and support, and commended Harriet for her excellent coordination and dedication throughout the program. She also conveyed gratitude to Mr. Joseph Elasu and Prof. Bipasha Baruah for their valuable input and collaboration, acknowledging their roles in making the sessions impactful and productive.