



ENERGICA

REPORT

ENERGICA online webinar

11th December 2025

Online webinar:

Implementing localized and scalable energy solutions in Africa. Lessons learnt from local initiatives driving the energy transition.



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Online webinar

Date of the event:	11/12/2021 9 :30 CET time
Organizers:	ENERGICA programme in collaboration with the Green Deal Support Office
Title of the webinar:	Implementing localized and scalable energy solutions in Africa. Lessons learnt from local initiatives driving the energy transition.
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1. Webinar Overview

Title: ENERGICA: Implementing localized and scalable energy solutions in Africa. Lessons learnt from local initiatives driving the energy transition.

Project: ENERGICA

Date: 11 December 2025

Format: Online webinar (panel discussions and presentations)

Organisers: ENERGICA Consortium with support from the Green Deal Project Support Office (ECHORyS)

1.1. Background

The webinar was held during the final implementation phase of **ENERGICA**, an EU-funded programme supporting three Africa-based energy companies to deliver innovative solutions that advance energy access across the continent.

ENERGICA's innovations were implemented in three distinct African contexts:

- In **Kenya**, ROAM deployed an electric mobility solution serving city riders in Nairobi.
- In **Madagascar**, Nanoé implemented modular nano-grids in rural communities in the Diana region to support domestic and productive energy uses.
- In **Sierra Leone**, Freetown Waste Transformers (FWT) developed an integrated biogas digester and water purification system in peri-urban Freetown.

Delivering energy solutions in Africa presents both significant challenges and opportunities. While the continent is a source of strong innovation, small and medium-sized energy enterprises (SMEs) often operate in complex environments that make it difficult to deliver affordable, inclusive, and impact-oriented solutions that are also viable and replicable.

As ENERGICA approaches its conclusion, the webinar aimed to reflect on lessons learned and explore how collaborative initiatives like ENERGICA can better support Africa-based energy SMEs. Based on project experience, two key areas emerged as requiring particularly strong collaboration:

- How to adapt technologies to diverse contexts and customer needs, and how to embed community-centric approaches throughout the project lifecycle
- How to develop viable replication and scaling models, and address the barriers companies face when expanding across the continent

The webinar brought together project partners, energy companies, NGOs, associations, financiers, and policy-oriented organisations to share field experience and discuss practical and strategic approaches to designing, implementing, and replicating community-centric energy solutions across Africa.

1.2. Objectives of the webinar

The main objectives of the webinar were to:

- Share lessons learned from the ENERGICA project's demonstrators in rural, peri-urban, and urban settings

- Explore how energy technologies can be adapted to local contexts and customer needs and discuss methodologies on how include participatory processes throughout the project cycle of energy projects
- What are the gaps SMEs face in embedding participatory approaches in their work and which collaborations models can work
- Discuss pathways for scaling energy innovations in the continent and how to address some of the main barriers when working on energy access in Africa
- Examine the role of partnerships, data, and financing in improving affordability and bankability
- Foster dialogue among practitioners, policymakers, NGOs, and private-sector actors

1.3. Agenda

9:30	<p><u>Opening Remarks</u></p> <p>Eng. Godfrey Marambe representing EACREEE</p> <p>Prof. Boris Heinz TU Berlin ENERGICA Programme coordination</p>
9:45	<p><u>Community-Centric ENERGY Models</u></p> <p><u>Panel discussion - “Food for thought”</u></p> <ul style="list-style-type: none"> • Francis Reffell, Founder & Executive Director at Centre of Dialogue on Human Settlements and Poverty Alleviation CODOHSAPA • Vera Bukachi, Executive Director and Managing Principal at KDI • Puck van Basten Project Manager at GOGLA • Hary Andriantavy, Executive Secretary for the African Association for Rural Electrification (CLUB-ER) • Flavien Martine, Energy Programme Manager at GRET <p><u>Panel discussion - “Perspectives from implementation”</u></p> <ul style="list-style-type: none"> • Mathias Charles Yabe, Founder AKOFRESH • Nicolas Saincy, co-founder NANOE • Aminata Dumbuya, founder FWT • Habib Lukuya, Country Manager ROAM • Nicole Poindexter, CEO and founder ENERGICITY
11:15	<p><u>Break</u></p>
11:30	<p><u>Towards building frameworks for scalability in the continent</u></p> <p><u>Project presentations</u></p> <ul style="list-style-type: none"> • Nicolas Saincy, co-founder NANOE

	<ul style="list-style-type: none"> • Aminata Dumbuya, founder FWT • Habib Lukuya, Country Manager ROAM <p><u>Panel discussion</u></p> <ul style="list-style-type: none"> • Sarah Malm, Executive Director at GOGLA • Nicolas Lefebvre, Associate at FINERGREEN • Hary Andriantavy, Executive Secretary for the African Association for Rural Electrification (CLUB-ER) • Victor Okinda, Solutions Manager, Global Energy Alliance for People and the Planet GEAPPP
12:50	<p><u>Closure</u></p> <p>Prof. Boris Heinz TU Berlin ENERGICA programme coordination</p>

1.4. Speakers

Africa-based energy companies

- Mathias Charles Yabe, Founder **AKOFRESH**. It is a Ghana-based green AgriTech enterprise that provides solar-powered cold storage solutions to help smallholder farmers reduce post-harvest losses and extend the shelf life of perishable crops, strengthening food security and rural incomes.
- Nicolas Saincy, co-founder **NANOE**. It is a French-Malagasy social enterprise that provides decentralized solar energy access in rural Madagascar through its innovative “lateral electrification” model of small solar nanogrids and local entrepreneurship to expand affordable electricity and jobs
- Aminata Dumbuya, founder **FWT**. It is a Sierra Leonean waste-to-energy company that converts organic waste into electricity, heat, and fertilizer on-site to cut energy and waste management costs while improving environmental outcomes.
- Habib Lukuya, Country Manager **ROAM** which is a Kenya-based electric mobility company that designs, manufactures, and deploys affordable electric motorcycles, buses, and charging infrastructure for emerging markets, especially across Africa, to reduce transport emissions and costs while increasing access to clean mobility.
- Nicole Poindexter, CEO and founder **ENERGICITY** which is a West Africa-focused renewable energy company that builds, owns, and operates solar-powered mini-grids to provide affordable, reliable electricity to rural, off-grid communities, helping expand clean energy access and drive local development

Business associations

- Sarah Malm, Executive Director at **GOGLA** and Puck van Basten Project Manager at **GOGLA**. **GOGLA** is an international industry association that represents companies and organizations in the off-grid solar energy sector, promoting access to affordable, reliable, and clean energy solutions in underserved regions worldwide.

- Hary Andriantavy, Executive Secretary for the African Association for Rural Electrification (**CLUB-ER**). It is a bilingual network of national rural electrification agencies and related institutions across Africa that collaborates to strengthen capacities and share expertise to accelerate rural electrification and expand access to modern, affordable electricity services.

International/regional organizations

- Eng. Godfrey Marambe representing **EACREEE**. Specialized institution that promotes sustainable energy development in Eastern Africa by supporting renewable energy and energy efficiency initiatives
- Victor Okinda, Solutions Manager, Global Energy Alliance for People and the Planet **GEAPPP**. Multi-stakeholder alliance launched at COP26 to accelerate clean energy transitions and expand access to affordable, sustainable electricity in developing and emerging economies.

Locally embedded NGOs

- Francis Reffell, Founder & Executive Director at Centre of Dialogue on Human Settlements and Poverty Alleviation **CODOHSAPA**. is a Sierra Leonean NGO that empowers low-income communities through participatory planning, savings schemes, and advocacy for pro-poor urban and rural development.
- Vera Bukachi, Executive Director and Managing Principal at **KDI**, a nonprofit design and community development organization based in Kenya that partners with under-resourced communities to co-create “Productive Public Spaces” and improve environmental, social, and economic conditions through participatory planning and design.
- Flavien Martine, Energy Programme Manager at **GRET** is an international nonprofit organization that supports sustainable development by implementing projects in agriculture, water, energy, and social inclusion to improve living conditions and resilience in vulnerable communities worldwide.

Financial advisors

- Nicolas Lefebvre, Associate at **FINERGREEN**. Financial advisor providing fundraising support and investment readiness coaching for energy transition companies.

2. Summary of Discussions

2.1. Opening remarks

The opening remarks set a clear strategic frame for the webinar, positioning ENERGICA within the broader EU Green Deal agenda and the challenge of achieving a just and inclusive energy transition in Africa. The speakers emphasized that energy access is not solely a technological challenge but one that requires deep engagement with local communities, institutions, and markets.

ENERGICA was presented as a multi-country, multi-context project operating across rural (Madagascar), peri-urban (Freetown, Sierra Leone), and urban (Nairobi, Kenya) environments. Each

demonstrator addresses different energy challenges—nano-grids, waste-to-energy systems, and e-mobility—while applying a common principle of co-creation and local capacity building.

From a regional perspective, the opening remarks also highlighted:

- The relevance of ENERGICA to nationally determined contributions (NDCs) and emissions reduction targets
- The importance of aligning regional and national energy policies
- The role of energy access in addressing informal employment, urban mobility, and economic resilience, particularly in East Africa

Key Takeaways from the Opening Remarks

- Community involvement is a strategic necessity, not an optional add-on, for energy transition projects.
- Energy access must be understood across multiple scales—local, national, and regional.
- ENERGICA’s value lies in combining technical innovation with social, institutional, and policy learning.
- Urban informality, unreliable grids, and emissions from transport and small enterprises are central challenges that energy projects must address.
- Multi-stakeholder collaboration and knowledge-sharing are essential to move from pilots to systemic impact.

2.2. Community-centric Energy models

2.2.1. First Panel: food for thought. Perspectives from actors working on local participatory models

The first panel brought together NGOs, associations, and industry representatives working at the interface between communities, energy systems, and institutions. The discussion focused on how community engagement is operationalised in practice, what tools and methodologies are used, and how community-centric approaches influence project design, governance, and outcomes.

Panelists consistently stressed that community engagement is not a single activity but a continuous process that evolves over the project lifecycle. Approaches ranged from participatory planning and co-design to community ownership, customer-centred product development, and data-driven advocacy.

Community Engagement Methodologies and Tools

Speakers described a wide range of participatory approaches, including:

- Community mapping, enumeration, and settlement profiling
- Co-design and visioning workshops
- Community learning platforms and forums
- Village electrification committees and savings groups
- Participatory construction, management, and governance structures

These tools were presented as mechanisms to ensure that projects respond to real needs, capacities, and constraints, rather than externally defined assumptions.

A key insight was that community engagement must extend beyond the design phase. Several speakers noted that traditional consultation models often weaken once infrastructure is commissioned, leading to reduced local ownership and sustainability challenges.

Moving from Participation to Ownership and Governance

One of the strongest messages from the panel was the need to move:

- From consultation → to co-design
- From co-design → to co-management
- From co-management → to co-ownership

Examples shared included:

- Transitioning from village electrification committees to community-shareholding social enterprises
- Establishing governance structures that allow communities to participate in decision-making
- Embedding energy projects within broader livelihood, health, and urban upgrading initiatives

These approaches were shown to improve not only social acceptance but also system performance, economic outcomes, and long-term viability.

Customer-Centred Approaches and the Role of Standards

From the industry perspective, the panel emphasized that customer-centred design is critical to both impact and financial sustainability.

Key points included:

- Energy products must match actual usage patterns, payment capacity, and priorities
- Poorly matched products increase default risk, customer dissatisfaction, and loss of access
- Customer insights are essential for reaching underserved markets, particularly women

Industry standards, such as consumer protection codes, were highlighted as tools that help companies operationalise community- and customer-centric principles at scale.

Gender, Inclusion, and Underserved Markets

Gender-responsive design emerged as a cross-cutting theme. Examples demonstrated how:

- Ignoring gendered energy use patterns leads to exclusion
- Engaging women as users, operators, and decision-makers unlocks new markets
- Community-led approaches help surface hidden constraints and opportunities

Projects that integrated gender considerations from the outset showed stronger adoption, higher satisfaction, and broader socio-economic benefits.

The Role of NGOs in Multi-Stakeholder Energy Projects

NGOs were consistently described as critical intermediaries in community-centric energy models. Their contributions include:

- Long-term presence and trust within communities
- Ability to translate community priorities into technical and policy language
- Capacity to bridge communities with governments, utilities, and private companies
- Support for meaningful participation, beyond tokenistic consultation

Speakers stressed that NGOs bring not only social capital but also strong technical expertise, particularly in participatory planning, infrastructure delivery, and monitoring.

2.2.2. **Second Panel: perspectives from implementations. Small Africa based energy companies and local engagement throughout projects' lifecycle.**

The second panel brought together Africa-based energy SMEs and social enterprises operating across different technologies and geographies, including electric mobility, mini-grids, waste-to-energy, cold-chain solutions, and nano-grid systems. Panellists represented both rural and urban contexts, offering grounded perspectives on how community-centric energy models can be implemented, adapted, and scaled in practice.

The discussion focused on:

- How companies identify and respond to community needs
- The challenges of replicating solutions across different contexts
- Differences between rural and urban energy markets
- Where small companies need additional support
- Effective collaboration models with NGOs, cooperatives, and other partners

Identifying Community Needs: From Assessment to Continuous Learning

Panellists agreed that understanding community needs is foundational, but approaches differ depending on scale, context, and business model.

Several speakers emphasized participatory and trust-based entry points, such as:

- Working through community leaders and trusted intermediaries
- Partnering with government extension services and local institutions
- Recruiting and training local community members as operators or entrepreneurs

A key evolution highlighted during the discussion was the shift from one-off needs assessments toward continuous learning models. Experience showed that energy demand, income generation, and usage patterns often change significantly once electricity or energy services become available.

Companies with mature operations stressed the importance of:

- Ongoing engagement with different community groups (including women)
- Continuous data collection on usage, payment behaviour, and performance
- Iterative adaptation of products and services over time

Energy access was framed not as a static intervention, but as a dynamic process that enables communities to evolve.

Community Involvement, Entrepreneurship, and Replication at Scale

A central theme was the tension between deep community participation and scalability. Panellists acknowledged that highly community-led models can deliver strong local outcomes but are often difficult to replicate across hundreds of locations.

One approach discussed was the use of local entrepreneurs embedded within communities, who:

- Operate and maintain energy systems
- Act as intermediaries between users and companies
- Collect feedback and support system improvement

This entrepreneurial-led model was presented as a pragmatic compromise that allows for scale while still grounding solutions in local realities.

However, panellists were clear that community representation in governance remains a challenge, particularly for companies operating across many dispersed rural sites. Several speakers highlighted the need for external support—particularly from NGOs—to design fair, inclusive, and credible mechanisms for community representation and oversight.

Rural vs. Urban Contexts: Different Needs, Markets, and Mindsets

The panel offered rich insights into the fundamental differences between rural and urban energy markets.

In rural contexts, speakers highlighted:

- Strong influence of traditional leadership and social structures
- Seasonal incomes, particularly linked to agriculture
- High demand for productive uses of energy (e.g. milling, refrigeration, water pumping)
- Greater reliance on pay-as-you-go or service-based pricing models

In urban and peri-urban settings, companies observed:

- More diverse customer segments, including SMEs and transport operators
- Higher expectations for reliability, performance, and maintenance
- Greater willingness to pay upfront or through subscriptions and rentals
- More competitive and fast-moving markets

Several panellists noted that successfully operating in both rural and urban environments requires different organisational capabilities, pricing structures, and risk profiles, and is often only feasible once a company reaches a certain level of scale and maturity.

Where SMEs Need Support to Scale Community-Centric Models

Panellists identified multiple areas where small and medium-sized energy companies require additional support:

- Community engagement capacity: Continuous engagement requires skills, time, and resources that are difficult for small companies to sustain alone.
- Data and impact measurement: Collecting and analysing impact data is resource-intensive but increasingly necessary for credibility and financing.
- Technical capacity: Product development, maintenance, and system reliability remain critical constraints.
- Finance and market access: Access to working capital and growth finance continues to be a major bottleneck.
- Compliance and regulation: Navigating regulatory frameworks can limit geographic expansion.

One speaker cautioned against forced or artificial partnerships, noting that collaborations are most effective when they are organic and mission-aligned, rather than imposed by funding requirements.

Collaboration Models and the Role of Local Partners

The panel strongly emphasized the importance of collaboration with:

- NGOs and specialised technical assistance providers
- Cooperatives and community-based organisations
- Industry associations and networks

Effective collaboration models discussed included:

- Co-created pilot projects
- Technical assistance and accelerator programmes
- Last-mile partnerships for community access and trust-building
- Independent third-party support for governance and impact measurement

Local partners were seen as essential for:

- Building trust and legitimacy
- Aggregating demand
- Supporting operations and maintenance
- Reaching underserved groups, including women

Industry associations were highlighted as valuable platforms for advocacy, learning, and collective engagement with policymakers.

2.3. Scaling barriers and opportunities in the continent

2.3.1. ENERGICA project presentations: replication opportunities

During the webinar, three ENERGICA demonstrator projects presented their experiences and perspectives on how their solutions could be replicated in other contexts, as well as the key barriers and enablers they encounter. The presentations covered rural electrification (Madagascar), urban e-

mobility (Kenya), and urban waste-to-energy and water systems (Sierra Leone), illustrating the diversity of replication pathways within the ENERGICA portfolio.

Cross-Cutting Insights Across the Three Demonstrators

Across all three projects, several common themes emerged:

- Replication requires adaptation, not duplication—technologies must be tailored to local regulatory, social, and economic contexts.
- Regulatory frameworks often lag behind innovation, creating uncertainty for novel models.
- Financing mechanisms are frequently misaligned with hybrid or integrated solutions.
- Local capacity building and partnerships are central to sustainability.
- Demonstrators generate critical learning that can inform policy and future programme design.

Madagascar Demonstrator: Modular Nano-Grid Electrification (Nanoé)

Replication Objectives

The Madagascar demonstrator aims to replicate a modular, bottom-up electrification model designed for small and dispersed rural settlements that are not viable for conventional AC mini-grids. The core objective is to provide a solution that sits between solar home systems and AC mini-grids, combining affordability with the ability to support productive uses of energy.

Replication is based on:

- Deploying nano-grids that initially serve small clusters of households
- Progressively interconnecting these nano-grids into village-wide DC mesh grids
- Expanding capacity incrementally as demand grows
- Maintaining an energy-as-a-service model rather than asset ownership by end users
- Relying on trained local entrepreneurs to deploy, operate, and maintain systems

The model is explicitly designed to be replicable in contexts where settlements are too small or too dispersed to attract traditional mini-grid developers.

Key Challenges to Replication

- Regulatory gaps: Nano-grids and mesh-grid systems are not fully recognised within existing national electrification frameworks, creating uncertainty and limited protection for operators and investors.
- Financing barriers: The solution falls between established funding categories (solar home systems vs. AC mini-grids), making it ineligible for many grant and subsidy schemes.
- Investor perception: Regulatory ambiguity increases perceived risk and constrains access to growth capital.

Key Opportunities for Replication

- Large untapped market: In Madagascar, over 80% of rural settlements are below the size threshold for AC mini-grids, making modular solutions highly relevant.
- Lower capital intensity: Incremental investment reduces upfront costs and financial risk.
- Strong local demand: Affordable, flexible subscriptions align well with household income patterns.
- Local capacity building: Training local entrepreneurs enables rapid deployment and local ownership.
- Growing recognition: Increasing interest from donors and DFIs as the model demonstrates results on the ground.

Kenya Demonstrator: Electric Mobility and Charging Infrastructure (Roam)

Replication Objectives

The Kenya demonstrator focuses on replicating electric mobility solutions, particularly for two-wheelers and public transport, in rapidly growing urban environments. The objective is to support a transition away from fossil-fuel-based transport by building a flexible, customer-oriented charging ecosystem.

Replication efforts focus on:

- Deploying electric two-wheelers at scale
- Developing a mix of home charging, public charging hubs, and fast-charging options
- Providing customer choice to accommodate different usage patterns
- Integrating vehicles with IoT and telemetry systems to support financing and risk management
- Expanding charging infrastructure to additional cities beyond Nairobi

Key Challenges to Replication

- High upfront capital costs: Charging infrastructure and vehicle deployment require significant CapEx.
- Affordability constraints: Electric vehicles are still perceived as more expensive than conventional alternatives, despite lower operating costs.
- Operational complexity: Managing infrastructure across multiple locations is resource intensive.
- Grid reliability: Power stability and grid modernisation remain challenges in some urban areas.

Key Opportunities for Replication

- Strong market demand: Rapid urbanisation and rising incomes are increasing demand for motorised transport.
- Policy support: Kenya has introduced EV-friendly policies, including special electricity tariffs.

- Renewable energy mix: High share of renewable electricity strengthens the climate case for e-mobility.
- Financing innovation: Growing interest from commercial banks and microfinance institutions, enabled by data and telemetry.
- Local manufacturing potential: Increasing localisation of components can reduce costs and create jobs.

Sierra Leone Demonstrator: Waste-to-Energy and Water Purification (Freetown)

Replication Objectives

The Sierra Leone demonstrator seeks to replicate a frugal, integrated waste–energy–water solution in dense urban and peri-urban environments. The objective is to turn organic waste into a resource while simultaneously addressing energy access, water purification, and urban waste management challenges.

Replication focuses on:

- Small-scale anaerobic digesters converting organic waste into biogas and electricity
- Linking waste-to-energy systems with water purification technologies
- Using digital tools to automate waste collection and track feedstock supply
- Embedding solutions within municipal waste management systems and PPP frameworks

Key Challenges to Replication

- Technology adaptation: Anaerobic digestion performance depends heavily on local organic waste composition, which differs significantly from European contexts.
- Feedstock reliability: Sustained energy production requires consistent and appropriate waste streams.
- Logistics and supply chains: Delays in shipping equipment and testing kits affected implementation.
- Operational complexity: Systems must be simple enough to be operated by non-expert users.

Key Opportunities for Replication

- Severe unmet needs: Both waste management and energy access remain highly constrained in urban Sierra Leone.
- Policy reform: New waste management regulations and PPP frameworks support private-sector participation.
- Circular economy potential: Converting waste into energy and fertiliser supports urban farming and livelihoods.
- Digitalisation: Data-driven waste collection improves efficiency and scalability.

- Local partnership value: Close collaboration with local actors improves contextual fit and long-term viability.

2.3.2. Third Panel: scaling barriers and opportunities in the continent

The third panel brought together ecosystem-level actors—including industry associations, financial advisors, philanthropic alliances, and regional networks—to discuss how small and medium-sized energy companies (SMEs) in Africa can be better supported through coordinated ecosystem interventions. The discussion focused on barriers to growth, financing readiness, technical assistance, partnerships, and the role of data and policy alignment.

Role of Ecosystem Actors in Supporting Energy SMEs

Panellists highlighted the complementary roles played by different types of organisations:

- Industry associations support advocacy, peer learning, visibility, and standards-setting for SMEs.
- Financial advisors help companies become investable by strengthening governance, financial planning, and risk mitigation.
- Philanthropic and development alliances provide risk-tolerant and catalytic capital, as well as ecosystem-level technical assistance.
- Regional networks support capacity building, coordination, and resource mobilisation, particularly for rural and off-grid energy actors.

A recurring theme was that SMEs cannot succeed in isolation; they require coordinated ecosystem support that addresses both company-level and systemic constraints.

Key Barriers Facing Small Energy Companies in Africa

Panellists identified several persistent barriers limiting SME growth and replication:

Financial Constraints

- High upfront capital expenditure combined with low customer purchasing power.
- Limited access to affordable and appropriately sized financing.
- Currency risks due to revenues collected in local currency and costs incurred in hard currency.
- Financing mechanisms that are often too slow, too large, or poorly suited to early-stage companies.

Market and Demand Challenges

- Slow growth in productive-use demand, particularly for mini-grids.
- Limited affordability among end users, especially in rural and peri-urban contexts.

Regulatory and Policy Barriers

- Fragmented and unpredictable regulatory frameworks.
- Complex licensing procedures and unclear policy support for innovative business models.

What Makes Energy SMEs “Investable”

From a financial advisory perspective, panelists outlined the key signals investors look for when assessing energy SMEs:

- Commercial viability, with a clear path to profitability beyond grant dependency.
- Strong risk mitigation strategies, including currency and regulatory risks.
- Alignment with national and local policy priorities.
- Reliable data on customers, assets, performance, and impact.
- Clear governance structures and credible environmental, social, and governance (ESG) practices.

Investment readiness was described not as a one-time milestone, but as an ongoing capability that SMEs must develop over time.

Importance of Needs-Based Technical Assistance

A major theme was the importance of needs-based, demand-driven technical assistance (TA). Panellists stressed that TA is most effective when it:

- Responds to clearly identified company needs (e.g. investor readiness, governance, data systems).
- Builds internal capacity rather than delivering one-off external inputs.
- Is coordinated across providers to avoid duplication and fragmentation.
- Includes mechanisms to measure and adapt based on TA impact over time.

Examples included shared or interim CFO support, investor diagnostics, and targeted operational capacity building.

On-the-Ground Constraints Affecting SME Operations

Panellists highlighted several practical constraints faced by SMEs during implementation:

- Fragile supply chains, leading to delays and cost increases.
- Skills shortages, requiring joint training programmes and peer-to-peer learning.
- Infrastructure gaps, including grid reliability and transport logistics.
- Low customer affordability, necessitating innovative payment and financing models.
- Regulatory bottlenecks, including licensing delays and tariff uncertainty.

These constraints reinforce the need for multi-stakeholder coordination rather than isolated interventions.

Partnerships and Coordination Across the Ecosystem

The panel strongly emphasised that no single actor can address these challenges alone. Effective support requires:

- Coalitions of investors, donors, associations, governments, and technical partners.

- Greater data sharing and transparency across programmes.
- Alignment between global initiatives, national policies, and local realities.
- Translation of high-level policy and donor agendas into actionable opportunities for SMEs.

Coalition-based approaches were viewed as more effective than siloed or single-organisation-led programmes.

Financing Models and the Role of Data

Panellists discussed several financing approaches that are proving effective:

- Blended finance, combining grants, concessional capital, and commercial funding.
- Results-based financing to reduce end-user prices.
- Revenue-based financing, particularly suited to early-stage companies.
- Working capital facilities to support inventory, operations, and growth.

Across all models, **robust data** was identified as a critical enabler. Data on customer behaviour, asset performance, demand, and impact:

- Reduces investor risk
- Improves financing terms
- Supports affordability-focused design
- Enables the transition from pilots to scale

Ensuring Affordability and Inclusion While Growing

Panellists stressed that scaling must not come at the expense of affordability, inclusion, or consumer protection. Key principles include:

- Combining multiple tools (bulk procurement, subsidies, RBF, end-user finance) rather than deploying them in isolation.
- Ensuring product quality and long-term system performance.
- Designing financing models that do not overburden vulnerable customers.
- Recognising that subsidies remain necessary in hard-to-reach and low-income contexts.

2.4. Conclusion

In the closing remarks, the speaker emphasised the richness and depth of the discussions held throughout the webinar, noting that the breadth of insights and lessons shared made it difficult to add further commentary without repeating what had already been covered. The webinar was described as both inspiring and highly informative, reflecting the extensive learning generated through the ENERGICA project.

The ENERGICA webinar demonstrated that community-centric energy solutions are most effective when technical innovation is combined with social, institutional, and financial innovation. Scaling

such solutions requires strong partnerships, robust data, inclusive financing models, and continuous engagement with communities.

The experiences shared through ENERGICA's demonstrators provide valuable insights for future energy access initiatives in Africa and beyond, particularly those seeking to balance affordability, inclusion, and long-term sustainability.

ENERGICA demonstrates that advancing energy access in Africa requires integrated approaches that combine technology, community engagement, data, financing, and ecosystem collaboration. Supporting Africa-based energy SMEs through flexible, context-aware, and coordinated partnerships is essential to delivering inclusive, affordable, and sustainable energy solutions at scale.

The speaker highlighted that ENERGICA has accumulated significant experience and knowledge over the course of its implementation, and that the final phase of the project focuses on documenting and consolidating these lessons. These learnings are being captured through reports and written outputs to ensure they can be shared beyond the project's lifetime.

Appreciation was expressed to the organisers, moderators, partners, and speakers for their contributions, preparation, and commitment throughout the project. The webinar was recognised as a valuable opportunity to bring partners together and reflect collectively on the work carried out under ENERGICA.

Finally, the speaker noted that the project has entered its final month of implementation. A dedicated webinar summary report is being prepared and will be made publicly available through the European Commission portal and the ENERGICA website, alongside additional final project reports. Participants were encouraged to consult these resources to learn more about the project's outcomes and insights.

3. Key Takeaways

Community-centric approaches are essential, not optional

Speakers consistently emphasized that meaningful community engagement is foundational to sustainable energy access. Successful projects involve communities throughout the project lifecycle—from needs assessment and design to operation and governance.

- Energy solutions are more sustainable and effective when communities are engaged throughout the full project lifecycle, not only at design stage.
- Engagement must evolve from consultation to co-design, feedback, and long-term participation.
- Trust, visibility, and responsiveness are critical for adoption and system sustainability.

Energy needs are highly context-specific and dynamic

The discussions underscored that energy needs vary significantly between rural, peri-urban, and urban settings. Rural contexts often prioritize productive uses of energy linked to agriculture and seasonal incomes, while urban and peri-urban areas face challenges related to density, informal settlements, waste management, and mobility.

As a result, technologies, business models, and engagement strategies must be tailored to local social, economic, and institutional conditions rather than applying uniform solutions.

- Rural, peri-urban, and urban contexts require different technologies, business models, and engagement strategies.
- Energy demand changes significantly once access is introduced; continuous learning and adaptation are required.
- One-size-fits-all solutions consistently fail.

Role of NGOs and Local Organisations

NGOs were highlighted as critical actors due to their long-term presence, trust within communities, and ability to bridge gaps between communities, governments, and private companies. Their roles include facilitating participation, translating community priorities into policy and technical language, and supporting inclusive governance structures.

Embedding community engagement into SME operations improves outcomes

- Community-centric models work best when integrated into core business operations, not treated as add-ons.
- Hiring local staff, working with local entrepreneurs, and maintaining direct feedback channels improve:
 - Technical performance
 - Customer satisfaction
 - Long-term viability

Replication requires adaptation, not duplication

- Successful replication depends on modular, flexible solutions that can be adapted to local realities.
- Regulatory frameworks and financing mechanisms often lag behind innovation, creating barriers for new models.
- Local capacity building and partnerships are essential to replication.

Financing remains the biggest constraint for energy SMEs

Key challenges include:

- High upfront capital costs
- Low customer purchasing power
- Currency risk (hard currency costs vs. local currency revenues)
- Limited access to appropriately sized and timely financing

SMEs often fall between financing categories and are underserved by existing instruments.

Financing Models and Affordability

The webinar highlighted persistent mismatches between capital-intensive energy systems and the limited payment capacity of end users. Speakers discussed a range of financing approaches that can help address this challenge:

- Blended finance combining grants, concessional capital, and commercial finance
- Results-based financing to reduce end-user prices
- Revenue-based and local-currency financing for early-stage companies
- Working capital facilities for SMEs
- Targeted subsidies for hard-to-reach and vulnerable communities

Affordability must be deliberately designed into projects without compromising quality or consumer protection.

Investment readiness is a capability, not a one-off milestone

Investors look for:

- Clear commercial viability beyond grants
- Robust data on customers, assets, and performance
- Risk mitigation strategies (currency, regulation, governance)
- Alignment with national and local priorities

Many SMEs need targeted, needs-based technical assistance to reach this stage.

Data is a core enabler of scale and affordability

- High-quality data reduces risk, improves financing terms, and supports better decision-making.
- Critical data includes:
 - Customer behaviour and ability to pay
 - Demand forecasts
 - Asset performance and lifespan
 - Social and economic impact
- Data should be treated as core infrastructure, not a by-product.

Strong ecosystems and coalitions matter more than isolated programmes

- No single actor can address energy access challenges alone.
- Effective support requires coalitions of SMEs, NGOs, financiers, associations, governments, and donors.
- Coordination, data sharing, and alignment across global, national, and local levels are critical.

- Needs-based, well-coordinated technical assistance delivers stronger results than fragmented support.