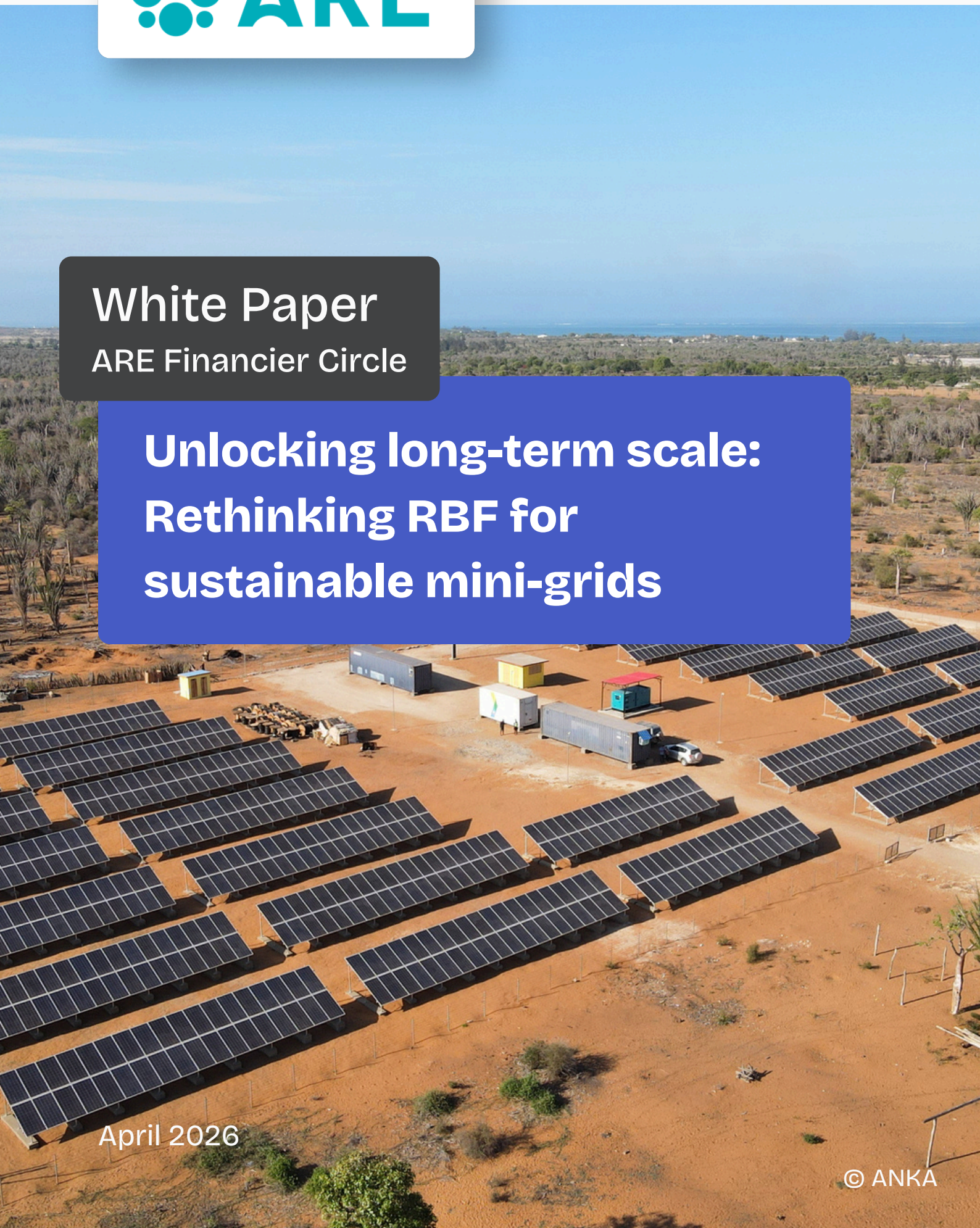
White Paper

ARE Financier Circle

Unlocking long-term scale: Rethinking RBF for sustainable mini-grids



April 2026

© ANKA

Published: April 2026

Contact: hello@renewelec.org

Reference: ARE-X-2026-01

Publication coordinator: Inès van Oldeneel (ARE), Eleni Nikolantou (ARE)

Editor: Ling Ng (ARE)

Layout and design: Okan Özkan (ARE)

Photo credit: ANKA

The **Alliance for Renewable Electrification** (ARE) is the global industry platform that federates and supports renewable energy companies to win business, shape policy and scale deployment across emerging markets. ARE operates across Africa, Asia-Pacific, and Latin America & the Caribbean.

The **ARE Financier Circle** features renewable energy investors collaborating to explore and catalyse investments in renewable electrification, with a focus on DRE in sub-Saharan Africa. The Circle is open to private and public investors and financiers.

Sincere thanks to the co-chairs of the ARE Financier Circle, **Maud Watelet** and **Ieva Indrinuaite**, for their valuable engagement and contributions to this publication.

This paper reflects the discussions and viewpoints expressed by members of the ARE Financier Circle. It does not necessarily represent the views of all members, and not every participant agrees with every point made herein.

Alliance for Renewable Electrification
Rue d'Arlon 63-67
1040 Brussels, Belgium
www.renewelec.org
+32 2 400 10 00

1. Introduction

Achieving Sustainable Development Goal 7 (SDG7) - universal access to affordable, reliable, sustainable, and modern energy - remains a significant challenge. The recent M300 initiative has outlined a strategic framework to accelerate the deployment of energy access connections across the African continent. Achieving this ambition will require strong private sector participation, both in financing and implementation. It is anticipated that up to USD 50 billion[1] needs to be mobilised through private finance mechanisms to support this effort, among others through significant investments in mini-grids.

Results-Based Financing (RBF) programmes have played a pivotal role in advancing mini-grid deployment in Sub-Saharan Africa over the past decade, supporting the delivery of energy connections across the region. Yet, accelerating mini-grid deployment through private capital mobilisation, in line with the ambition of M300, will require a holistic approach to supporting project long-term viability.

This white paper summarises the feedback, experiences, and recommendations of leading mini-grid investors and members of the ARE Financier Circle to support the optimisation of existing Result-Based Financing (RBF) mechanisms. It reflects a shared vision on how RBF programmes can be enhanced to more effectively mobilise capital and scale up investment in mini-grids. Specifically, it outlines:

- The critical role of RBF programmes in enhancing the bankability of mini-grid projects;
- Key design principles necessary to ensure RBF mechanisms deliver their intended outcomes; and
- Additional instruments and actions needed to enable rapid, large-scale deployment and long-term sustainability of mini-grids in sub-Saharan Africa.

Collectively, these insights demonstrate how RBF can be optimised and play a supportive role in addressing the viability gap and strengthening the investment case for DRE projects.

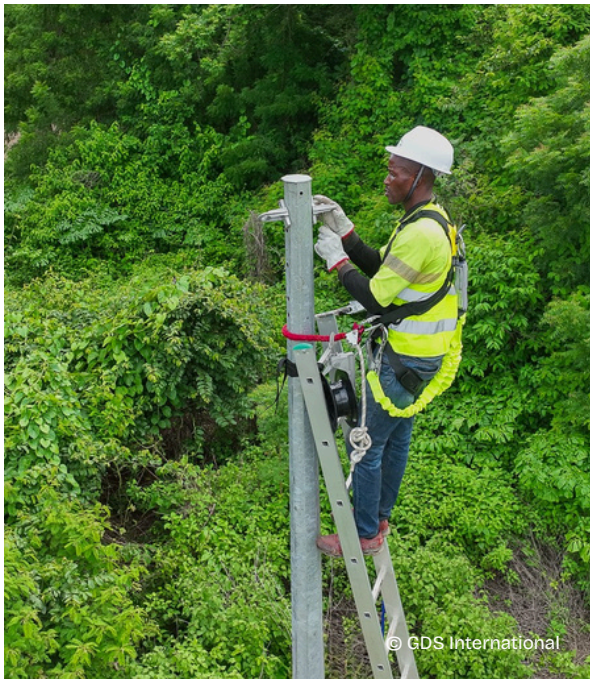

© GadgetroniX

[1] International Finance Corporation, Mission 300: Powering Progress in Africa, 2025

2. Key tenets for mobilising capital at scale

Mini-grids are capital-intensive infrastructure projects that require long-term financing structures. However, the current risk-return profile of mini-grid investments remains misaligned with the type of capital these projects need. This misalignment presents a major barrier to attracting the scale of private investment required to meet access goals.

Results-Based Financing (RBF) programmes play a crucial role in the development of commercially viable mini-grid business models. By helping developers achieve financial viability, RBFs serve as an important initial signal to investors. Their potential impact on capital mobilisation can be further enhanced by aligning programme design more closely with private investor expectations and requirements.


© GDS International

However, there is currently insufficient focus on long-term de-risking. As a result, the pool of commercial investors remains limited, often confined to concessional or development finance institutions. **To unlock truly commercial capital, a comprehensive approach to risk is needed - one that considers the entire project lifecycle and allows investors to commit the right amount of patient capital required**. This includes addressing long-term macroeconomic and operational risks that may affect project performance and returns.

A four-pillar approach is therefore essential to position the mini-grid sector for successfully attracting diverse financing at scale:

a) Creating a better alignment of the anticipated impact: RBF programmes should apply a stronger commercial lens—rewarding not only connections, speed, or technical delivery, but also long-term business viability. While many RBFs already use diverse metrics (e.g., PV-capacity-based models), future designs should continue broadening performance criteria to better support sustainable, investable mini-grid operations.

b) Adjusting RBF design to support capital raise: RBF programmes must be refined to better meet investor needs and support subsequent capital raises.

c) Ensuring long-term sustainability: Complementary instruments must be introduced to address long-term macroeconomic risks and ensure sustainable operations.

d) An ecosystem approach is required - more collaboration is needed: Coordination must be strengthened across the ecosystem to ensure RBF programmes are aligned with market realities, policy and regulatory frameworks, and investor requirements.

3. Refining RBF programmes to support investor needs and supporting capital raising

a. Creating a better alignment of the anticipated impact

Achieving success in any endeavour requires clearly defined, measurable, realistic and coherent objectives and, where multiple partners are involved, effective alignment on shared goals and metrics. Within the current RBF programme landscape, more coherence and alignment are needed among key stakeholders – governments, development partners, and the private sector – regarding the intended outcomes of these mechanisms.

Most RBF initiatives are designed with a dual objective: supporting universal energy access (SDG7), often measured through new or improved energy connections or, in some programmes, through new PV capacity, and leveraging private finance to achieve this goal. While these aims are not inherently in conflict, insufficient attention to their inter-dependencies, including the commercial viability required to attract investment can restrict capital mobilisation or weaken long-term sustainability.

When the majority of RBF schemes focus solely on the number of new connections, without adequately considering the quality, viability, or long-term value of those connections, they can inadvertently create perverse incentives. Developers may prioritise easily achieved household connections over more commercially valuable – but operationally complex – connections, such as small businesses or productive users.


© ANKA

These latter users are critical for increasing average revenue per user (ARPU) and ensuring long-term project viability. Furthermore, inadequate assessment of household creditworthiness or ability to pay increases the risk of non-performing connections, further threatening the sustainability of supported projects.

Critically, most programmes do not track whether connections remain active or deliver meaningful energy services over time. From an investor's perspective, if a project fails to meet the anticipated ARPUs necessary for the project/developer to service their financial obligations, the viability of the project is jeopardised. This not only undermines long-term sustainability but can also send a negative signal to the market, further deterring future private investment.

This risk is exacerbated by the inherent "myopia" of many existing RBF programmes, which often function as one-off interventions with short, rigid timelines. By focusing on immediate results within a narrow window, these programmes fail to account for the long-term market continuity required after the subsidy ends. For mini-grid developers, such short-termism creates cliff-edge risks, where the abrupt removal of support prevents them from planning for sustained growth or securing the long-term equity and debt capital that investors commit to companies with clear, multi-year trajectories. Without a bridge from initial subsidy to self-sufficiency, there is a high risk of market exit or sudden price hikes for customers, which erodes the very confidence and impact the RBF was designed to build.

To address these challenges, a more nuanced design approach is needed – one that moves beyond a narrow focus on connection numbers and instead prioritises the long-term sustainability of energy access. This could include:

- **Differentiated subsidies** based on customer type (e.g., higher incentives for commercial or productive-use connections, or additional support for productive use of energy activities), to better align incentives with revenue potential and the long-term economic sustainability of mini-grids.

- **Linking disbursements to energy usage** (e.g., kWh delivered), rather than purely to new connections, to encourage ongoing service delivery, customer engagement, and operational quality.

- **A hybrid incentive model—**rewarding both new connections and verified energy delivery—could offer a more balanced and effective mechanism for achieving sustainable development and financial outcomes.

- **A rolling grant system** that provides staged financing for projects as they mature, with funds released incrementally upon the successful achievement of defined milestones rather than through fixed funding windows. This supports continuity and enables longer-term planning for mini-grid developers.

b. Adjusting RBF design to support capital raise

To truly unlock private investment at scale, this objective should also be considered when designing the policies and processes of RBF programmes. Currently, several design and operational challenges limit the ability of RBF mechanisms to act as effective tools for de-risking and capital mobilisation.

A key structural barrier lies in the disbursement model of many existing RBF programmes. Disbursements are typically made only after project commissioning, creating significant cash flow constraints during the most capital-intensive phases of development. To bridge this gap and align with developer financing needs, RBFs should adopt a multi-stage disbursement structure, allowing for partial disbursement before construction. Going a step further, a smartly staged RBF approach could not only support project capital needs throughout the project cycle but also maintain accountability to development partners' impact objectives through performance-linked components. This could be achieved by structuring the RBF support across distinct disbursement phases, such as :

- **Upfront CAPEX support** (e.g., in the form of forgivable loans or recoverable grants)
- **Performance-based rewards** tied to impact metrics beyond commissioning (e.g., customer retention, service quality and reliability, environmental performance, employment etc..)
- **Post-commissioning support** to sustain operations and incentivise long-term service delivery

A major concern for investors is the predictability and long-term visibility of RBF funding. At a higher level, **more focus is required on ensuring predictability in international funding partner programming**. Shifting international funding partner priorities and changes in programme scope across countries or their duration create uncertainty, undermining investor confidence. This has never been more important than today in the uncertain development finance landscape.


© ComAp

In addition to this, there is a common timing mismatch in the RBF programme design between the time of the award of RBF funding and investment timeframes. This often results in a "chicken and egg" problem: private investors seek assurance that grant funding will be secured before committing capital, while international funding partners or governments require proof of financing commitments before awarding RBF support. Such an impasse can significantly delay project timelines or discourage investment altogether. While an award letter can provide initial assurance to investors and enable financial closure, in practice, additional clarity on conditions, disbursement timing, and alignment with investment commitments is often needed before investors feel confident to proceed, bridging the 'chicken and egg' impasse. **Addressing it would require a more nuanced alignment in the timeframes and requirements between the RBF programmes and investment processes.**

Predictability is also affected by administrative complexity, which remains a major deterrent for investors. **Lengthy and unpredictable due diligence processes**, complex contracts, and rigid programme rules – such as restrictions on consortium structures or ownership changes – can delay financing, increase transaction costs, and deter developer and investor participation.

In some cases, the due diligence process of an RBF programme can stretch up to 18 months for each investor, requiring external consultants, extensive documentation, and high compliance costs. Beyond time delays, the disproportionate cost of process over impact creates a lost opportunity where capital is tied up in administration rather than deployment. For instance, verification, consultancy, and advisory services remain essential to ensure project quality and accountability. However, there may be opportunities to further optimise these processes. For instance, improving their efficiency could help ensure that a greater share of available resources is directed towards financing new connections and supporting project deployment.

To address this, RBF programmes should:

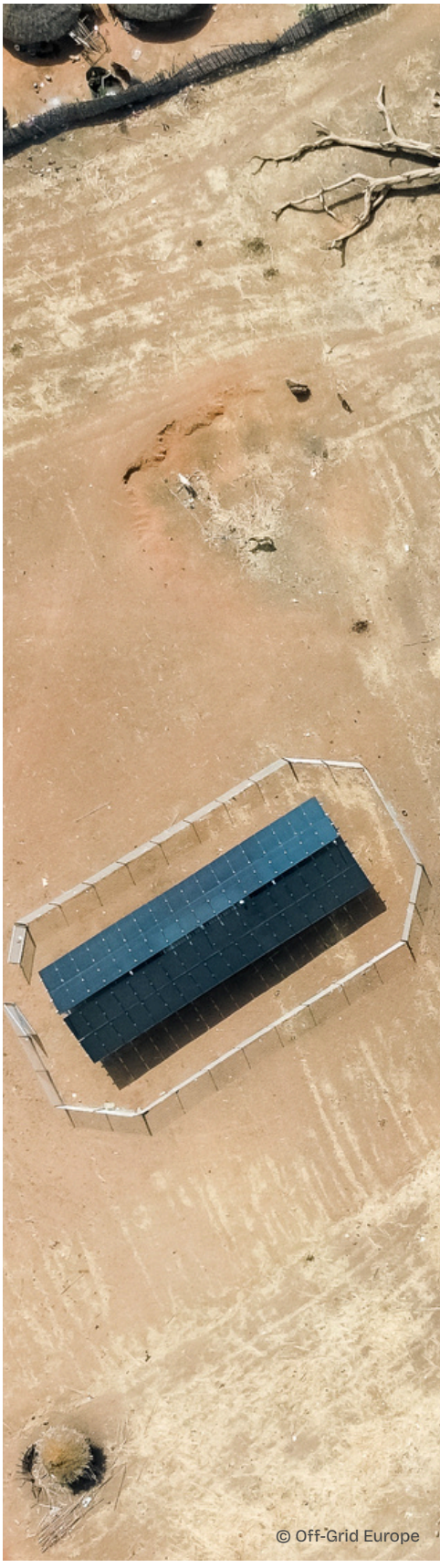
- **Standardise application, due diligence, and monitoring procedures** across international funding partners, building on successful models and streamlining compliance.
- **Harmonise technical and reporting requirements**, including consistent metering and data standards, to reduce redundancy.
- **Allow for more flexibility in contracting requirements**, accommodating changes in ownership structures or project partners without triggering delays or disqualification.

By simplifying policies and processes and aligning disbursement timelines with financing realities, RBF programmes can better support developers in raising capital and progressing projects to implementation. More predictable, transparent, and flexible frameworks will enhance investor confidence.

c. Ensuring long-term sustainability

While RBF programmes can play a critical role in catalysing capital and accelerating deployment, ensuring the long-term sustainability of mini-grid projects requires a broader set of risk mitigation measures. Once systems are built and operational, developers and investors are exposed to a range of macroeconomic and operational risks that can significantly affect long-term project performance and financial viability. **Key risks include:**

- **Macroeconomic risks**, such as currency fluctuations, inflation, and foreign exchange (FX) volatility, which can erode revenue streams or increase operating costs – particularly where revenues are in local currency, but debt or equipment costs are in hard currency.
- **Operational risks**, including lower-than-expected energy demand, difficulty growing average revenue per user (ARPU), or shifts in local economic conditions that affect customer ability to pay.


© Off-Grid Europe

Addressing these risks is essential to maintain investor confidence and ensure projects can continue delivering reliable energy over the long term.

Several **mitigation solutions** could be considered:

- **Guarantees**, including coverage for **foreign exchange exposure**, **political risk**, and **offtaker risk**, can shield projects from volatility and allow for more stable cash flow forecasting.
- **Compensation** or **reserve funds** to cover operational expenditure (OPEX) gaps – such as **minimum revenue guarantees** – can help developers maintain service during periods of low demand or delayed ARPU growth, especially during the early years of operation when demand is still building.
- **Blended finance structures** – which combine RBF grants with concessional debt, equity, and/or guarantees – provide developers with a 'one-stop-shop' for project financing needs, leveraging different capital types according to their risk tolerance and ensuring better alignment between the different funders.

In addition to operational-phase financing, more attention must be given to the **development funding gap**[2], particularly during early project phases such as site selection, feasibility studies, community engagement, and licensing. These high-risk, pre-revenue activities are often underfunded, creating bottlenecks that prevent otherwise viable projects from reaching financial close. To ensure resources are allocated efficiently across the project lifecycle, there is a need for **a clear mapping of risks, project development stages, and appropriate financial instruments**.

This approach, paired with complementary efforts from developers to strengthen project design, site selection, PUE activation, and operational performance, would help define which stakeholder – be it international funding partners, government, development finance institution, or private investor – should carry which type of risk, at what stage, and with what form of support.

[2]At a sector level, constraints in early-stage project development funding are occasionally cited by developers as a challenge. A range of programmes and facilities already provide support for these activities, and the degree to which this constitutes a critical funding gap varies across contexts.


© Asantys Systems

Ultimately, ensuring long-term sustainability requires a comprehensive, lifecycle-based approach to risk. RBF programmes can serve as important entry points but must be complemented by broader financial strategies and instruments that reflect the realities of building and operating resilient, investable mini-grid businesses.

d. An ecosystem approach is required - more collaboration is needed

Successful commercial finance mobilisation to scale-up mini-grid deployment also depends on the strength and cohesion of the broader ecosystem. A systems-level, collaborative approach is essential to ensure that RBF programmes are aligned with market needs, policy and regulatory frameworks, as well as investor requirements. This requires deliberate coordination among all relevant stakeholders, including governments, international funding partners, development finance institutions (DFIs), commercial investors, and developers. In this context, industry associations such as ARE can play an important convening role, providing neutral platforms for structured dialogue, knowledge-sharing, and coordination across stakeholder groups.

Public-private coordination is particularly critical. Government institutions must play a central role in setting clear policy frameworks, enabling regulatory environments, and coordinating electrification efforts. Throughout these processes, governments need to work hand-in-hand with the private sector to ensure that planning, subsidies, and support mechanisms – including RBF – are responsive to market dynamics. Without this alignment, even well-intentioned funding programmes risk underperforming or failing to attract investment at scale.

Greater coordination among RBF funders is also essential. In today's landscape, developers face fragmented RBF funder processes: separate applications, reporting standards, and due diligence requirements across different development partners and programmes. A more coherent and streamlined approach among RBF funders would reduce unnecessary transaction costs and delays.

The next important step isa closer alignment and meaningful consultation between the different types of funders and investors.

This should include early-stage engagement between RBF programme managers and potential investors in each market during programme design and formulation, to test assumptions and ensure that funding policies, eligibility criteria, disbursement schedules and performance metrics are compatible with private capital requirements. A more comprehensive approach of 'one-stop-shop' programmes or platforms that integrate RBF with concessional and commercial capital (mentioned in the previous section) – can bring grant funding closer to investment processes and improve the timeframe of capital mobilisation.

In addition to improved coordination, targeted technical assistance could support governments, regulators and programme managers to strengthen policy frameworks, build implementation capacity, improve data and monitoring systems, and ensure that RBF programmes are designed and managed in line with private sector and investor requirements.

Conclusion

Given the ever-narrowing window towards 2030, scaling mini-grids will depend less on creating new instruments than on improving the way existing ones are designed and coordinated. Results-Based Financing has demonstrated its value in supporting deployment, but its current structure often falls short in mobilising private capital at scale.

This paper highlights the need to refocus RBF programmes on long-term performance and revenue sustainability, improve predictability and alignment with investment timelines, and complement grants with instruments that address lifecycle risks. Achieving these changes will require closer coordination between governments, international funding partners, developers and investors from the earliest stages of programme design. ARE and its financier members stand ready to contribute market insights and support more effective, scalable RBF approaches that strengthen the long-term viability of mini-grid investments.

4. Key Challenges & Recommendations

Challenges	Recommendations
Goal 1: Creating a better alignment of the anticipated impact	
1. Limited attention to the quality and long-term viability of supported connections Many RBF programmes measure performance primarily through the number of new connections (or PV Capacity), without tracking whether these connections remain active or deliver reliable energy services over time.	**Link disbursements to energy usage** (e.g., kWh delivered), rather than purely to new connections Evaluate **long-term business viability** Apply a **hybrid incentive model** that rewards both new connections and continued service provision.
2. Incentive structures favour basic household connections rather than higher-value connections By focusing on connection numbers, RBF schemes may encourage developers to prioritise basic household connections over more commercially valuable but operationally complex customers, such as small businesses and productive users that contribute to higher ARPU. This creates weak alignment between impact metrics and commercial viability.	Introduce **differentiated subsidies by customer type**, with higher incentives for commercial and productive-use connections to better align incentives with revenue potential Reward **sustained customer activity**
3. Short-term programme design creates risks for long-term sustainability Many RBF programmes operate as one-off interventions, failing to account for the long-term market continuity required after subsidies end. This creates cliff-edge risks for developers and limits their ability to plan for sustained growth or attract long-term capital. This reduces incentive for productive-use activation.	Introduce a **rolling grant system** that provides ongoing, multi-year support that follows the project as it grows, giving developers predictability and time to transition from subsidies to commercial sustainability, rather than ending abruptly after a fixed funding window.

Challenges	Recommendations
Goal 2: Adjust RBF design to support capital raise	
4. Disbursement schedules generate capital constraints during critical development phases Many RBF programmes release funding only upon project commissioning, creating cash flow constraints during the most capital-intensive stages of development.	Introduce a **multi-phase disbursement framework** that combines **upfront CAPEX support**, performance-linked incentives tied to verified impact metrics and post-commissioning support to ensure continuity of operations and incentivise sustained service delivery.
5. Lack of predictability in international funding partners programming and misalignment with investor timelines Frequent shifts in international funding partners priorities, changes in programme scope and misaligned RBF and investment timelines create uncertainty. Investors may delay or withhold capital if funding commitments are not predictable, limiting the capacity of RBF to catalyse private investment.	Enhance the **alignment in the timeframes and requirements** between RBF programmes and investment processes, as well as provide more visibility on donor programming
6. Administrative complexity and rigid programme conditions Protracted due diligence, complex contractual requirements, diverse reporting requirements and overly rigid rules increase transaction costs and implementation delays, divert substantial resources to process rather than deployment and, in some cases, result in developer withdrawal.	**Streamline administrative and procedural requirements** by standardising application,optimising due diligence and monitoring processes; harmonising technical and reporting standards; and allowing flexibility and predictability in contracting requirements.

Challenges	Recommendations
Goal 3: Ensuring long-term sustainability	
7. Limited lifecycle risk management RBF programmes alone cannot address the full spectrum of risks during a project's lifecycle. Without a structured approach, projects remain exposed to development- and operational-phase uncertainties.	Establish a project-lifecycle risk assessment framework that maps risks, project development stages and appropriate financial instruments to clarify which stakeholders (i.e. international funding partners, governments, DFIs, private investors) assume which risks and with what type of support.
8. Exposure to macroeconomic and operational risks during the operational phase Once mini-grids are commissioned, developers face risks such as FX volatility, inflation, lower-than-expected energy demand and changes in local economic conditions that effect customers' ability to pay – risks that threaten the financial viability of these projects.	Deploy risk-mitigation instruments such as guarantees covering FX and political risks, minimum revenue guarantees or reserve funds to stabilise cash flows. Complement RBF with blended finance structures that combine grants, concessional debt and equity to allocate risk appropriately and support project resilience.
9. Funding gaps in early-stage project development High-risk pre-revenue activities (e.g. site selection, feasibility studies, licensing) are often underfunded, creating bottlenecks that prevent viable projects from reaching financial close.	RBF programmes and complementary instruments should include funding for early-stage, pre-revenue activities, such as feasibility studies and permitting, to ensure a consistent pipeline of investment-ready projects. Developpers should provide complementary efforts to strengthen project design, site selection, PUE activation, and operational performance.

Challenges	Recommendations
Goal 4: An ecosystem approach is required - more collaboration is needed	
10. Lack of coordination across the mini-grid ecosystem Mobilising commercial finance at scale is constrained by limited coordination between governments, international funding partners, DFIs, investors, and developers. Misalignment between policies, regulatory frameworks, donor programmes, and investor requirements reduces the effectiveness of RBF mechanisms and limits their ability to catalyse private capital. Fragmentation of RBF programmes reduces efficiency in capital deployment for mini-grids.	Strengthen ecosystem-wide collaboration, with industry associations such as ARE playing a convening role to facilitate dialogue and coordination. Key measures include: • **Public-private coordination** to align government policies, regulatory frameworks, and electrification planning with private-sector realities. • **Harmonisation of donor processes**, including applications, due diligence, and reporting requirements, to reduce administrative burdens. • **Consultation between funders and investors** during programme design to ensure RBF programmes reflect investor requirements. • **Integrated "one-stop-shop" platforms** that link RBF grants with concessional and commercial finance. • **Knowledge-sharing and learning** across the sector to build on proven models rather than duplicating efforts.

Alliance for Renewable Electrification
Rue d'Arlon 63-67
1040 Brussels
Belgium
hello@renewelec.org
www.renewelec.org