Busara Groundwork

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Powering healthcare: What we learned about financing healthcare electrification in Kenya

Busara

This study is a companion to:
Tompkins, M. & Singh, A. (2025). Powering Primary Healthcare: Financing Models and Enabling Conditions for Energy Access in Kenya. *Busara Groundwork No. 28.* Nairobi: Busara.

Read that document first for the full literature review, policy landscape, and financing framework (Busara Groundwork No. 28). This study reports the findings of primary research in which those assumptions were tested with healthcare facilities, energy providers, financial institutions, and donors across Kenya.

Key words:
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There are no conflicts of interest to declare for this study.

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Abbreviations and acronyms

PPHF	Private primary healthcare facilities
EaaS	Energy as a Service
LFI(s)	Local financial institution(s)
SHA	Social Health Authority
PPP	Public-private partnership(s)
RBF	Results-based financing
CAPEX	Capital expenditure
O&M	Operations & management
PAYGO	Pay as you go
PD	Probability of default

Acknowledgement and non-author contributions

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Executive summary

The core finding of this study can be stated directly: Kenya's healthcare electrification market is not failing because demand is absent, technology is unsuitable, or borrowers do not repay; it is failing because the architecture through which capital is structured and risk is allocated has not been built. The evidence points to a market with manageable underlying risk that has been systematically perceived as high, and to a set of targeted, designable interventions that can change that. The evidence below shows, in precise terms, where the blockages are, who holds them, and what it would take to move them.

Reliable electricity is the infrastructure on which healthcare depends. Without it, cold chains fail, diagnostics go dark, maternity services are compromised, and emergency care becomes guesswork. Yet across Kenya's private primary healthcare sector, this infrastructure gap is not closing at the rate the problem demands. As of 2021, 26% of Kenya's health facilities had no access to electricity at all, and of those connected to the grid, only 15% received an uninterrupted supply (Apergi et al., 2024; World Health Organization [WHO], 2023).

Busara Groundwork No. 28 (GW 28) Powering primary healthcare: financing models and enabling conditions for energy access in Kenya synthesized the published evidence on financing models and enabling conditions for healthcare electrification. It identified four categories of barriers: high upfront costs, limited local financial institution (LFI) engagement, donor funding constraints, and fragmentation between small-scale demand and large instruments. It then mapped these across the four key actor groups in the ecosystem. It was, by design, a literature review: rigorous, comparative, and grounded in evidence.

Between November 2024 and November 2025, we conducted primary research across four stakeholder groups: private primary healthcare facilities (PPHFs), Energy-as-a-service (EaaS) providers, Local Financial Institutions (LFIs), and donors, multilateral funding agencies, and development funds, all categorized as Donors, using 46 qualitative interviews and 37 quantitative surveys across three counties in Kenya. For each major assumption carried forward from Groundwork No. 28, we asked: Is this true here, now, for the specific actors in this market?

Several findings support this diagnosis, each addressed in detail in the sections that follow. The deposit gap, LFI risk perception, EaaS capital structure, and donor misalignment are each specific, measurable, and designable problems. The evidence is already in place to act on them.

LFIs remain largely absent from the sector, but not because actual credit performance is poor. Healthcare lending default probabilities mirror their broader portfolios. What keeps them out is a powerful, self-reinforcing narrative centered on Social Health Authority (SHA) reimbursement unpredictability that shapes individual loan officer decisions in the absence of standardized frameworks. This is a behavioral risk perception problem as much as a credit problem.

An overwhelming 86% of EaaS providers rely on CAPEX-driven sales models rather than recurring service contracts, not because they prefer this model, but because the enabling conditions for service-based delivery, affordable debt, monitoring infrastructure, and portfolio-level data have not yet been assembled. Donor capital is present but structurally misaligned. Preferred project sizes exceed USD 2 million, systematically excluding the facility-level demand this market is built on.

These constraints are self-reinforcing, and the cycle will not break on its own. The findings that follow show how each actor experiences their part of it, and together, why the cycle holds.

The gender dimension of this market is structural, not incidental. All surveyed PPHFs and EaaS providers in this sample were male-owned; faith-based facilities were governed by all-male boards. Women are not absent from the consequences of energy unreliability as health workers, patients, and caregivers; they bear its costs acutely, but are excluded from the ownership and governance layer as well as the transactions and financing relationships that this study examines.

The implications clearly outline the necessary course of action. This includes changing EaaS provider capital structures to close the deposit gap, building SHA revenue frameworks and shared performance data to unlock LFI engagement, sequencing data infrastructure before results-based financing, and designing gender inclusion from the outset.

The most important correction this study makes: Busara Groundwork No. 28. Powering primary healthcare: financing models and enabling conditions for energy access in Kenya treated this as a market with genuine underlying risk that required de-risking. Primary research suggests it is a market with manageable risk that has been systematically perceived as high in the absence of information, standardized tools, and coordinated capital. The intervention required is partly financial and largely structural.

How this study connects to Busara's Groundwork No. 28 – Powering primary healthcare: financing models and enabling conditions for energy access in Kenya

Across Kenya's private primary healthcare sector, the absence of reliable electricity is not a background condition; it is a daily operational crisis. Cold chains fail, diagnostics go offline, maternity services are compromised by darkness or emergency care becomes guesswork. The facilities most affected are also the ones least able to absorb the cost of the alternatives. Busara Groundwork No. 28 served as the initial phase of research into why this gap persists. Through a structured review of published evidence, case studies, and development finance institution (DFI) reports, it mapped the financing landscape for healthcare electrification in Kenya and identified four categories of barriers:

- high upfront capital costs,
- limited engagement from local financial institutions,
- structural constraints in donor funding,
- the fragmentation of small-scale facility demand from large financing instruments.

It established a framework for analyzing the problem and the actors at its center. To validate this framework, we conducted 46 qualitative interviews and 37 quantitative surveys across four stakeholder groups in three counties. In each session, we asked two core questions: Is this framework accurate, and is it applicable today?

The findings broadly confirm the literature but add important precision. The evidence strongly indicates that the main constraint is not demand,

technology, or repayment behavior. Healthcare electrification in Kenya is constrained by how capital is structured and how risk is allocated across actors. It is a coordination and financing design challenge rather than a fundamental market viability issue.

The central problem in this market is not any single barrier; it is that the barriers reinforce each other. Because healthcare facilities cannot meet deposit requirements, energy providers do not scale healthcare portfolios. Because portfolios remain small, financial institutions do not engage. Because both are constrained, donor capital cannot find viable deployment channels. The result is a market that is fragmented, underleveraged, and self-reinforcing in its own stagnation, and one that will not move without deliberate intervention at the level of the system, not just the individual actor. The findings below show how each constraint plays out across the four stakeholder groups, and together, why the cycle holds.

Together, the two Groundwork studies form a complete picture, one describing what the published evidence suggested the problem was, the other describing what primary research shows it actually is. Together, they form the evidence base for the blended finance product design work in Phase 3.

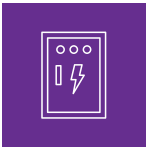
Market context: healthcare electrification in Kenya

The section below sets out the market context that framed both phases of this study. The electricity access gap, what facilities depend on power for, why decentralized solar has not scaled, and how the financing landscape currently sits.

Electricity access and reliability

26%

of Kenya's healthcare facilities had no access to electricity as of 2021



15%

of grid-connected facilities received reliable, uninterrupted supply

Being connected to the grid does not mean having power consistent enough to support healthcare services. Connection and reliability are not the same thing (Apergi et al., 2024; WHO, 2023).

Energy use in healthcare facilities

Essential services requiring electricity:

- Lighting for procedures and wards
- Vaccine refrigeration and cold chain
- Diagnostics and laboratory equipment
- Emergency and maternity care
- Medical device charging and monitoring

When grid supply fails, facilities turn to diesel. Generators bridge outages but are expensive to run and hard to sustain, particularly for smaller facilities. Many operate with inconsistent or inadequate power, directly affecting service delivery (Olatomiwa et al., 2022; WHO, 2023).

Decentralized energy solutions

Decentralized solar systems, often combined with battery storage, are increasingly seen as a practical solution, especially for off-grid and weak-grid areas. They can provide more reliable power and reduce long-term operating costs. However, adoption remains limited (SEforALL, 2023; Thorne et al., 2021).

High upfront costs

Capital requirements exceed what most facilities can pay, with no accessible financing to bridge the gap

Limited financing access

Financial institutions largely absent; no suitable products for facility-level solar investment

Maintenance gaps

Ongoing system management requires capacity and budget that most facilities do not have

Financing landscape

Financing for healthcare electrification remains largely donor-driven. In many contexts, grant funding accounts for the majority of investment, particularly for early-stage projects (SEforALL, 2023). This pattern is consistent with findings across sub-Saharan Africa, where healthcare electrification remains heavily reliant on concessional and grant-based funding.

Private investment is limited due to small project sizes, fragmented demand, and perceived risk. As a result, many healthcare facilities, especially smaller and rural ones, remain underserved.

Study overview

Busara Groundwork No. 28 identified four categories of barriers to healthcare electrification in Kenya:

1. ***high upfront capital costs that facilities cannot meet;***
2. ***limited engagement from local financial institutions who perceive the sector as high-risk;***
3. ***structural constraints in donor funding that favor large projects over facility-level demand;***
4. ***fragmentation between the small scale at which healthcare facilities operate and the minimum sizes that financing instruments require.***

It mapped these barriers across four stakeholder groups:

1. ***Private primary healthcare facilities (PPHFs)***
2. ***Energy-as-a-Service providers (EaaS)***
3. ***Local financial institutions (LFIs)***
4. ***Donors***

It drew on evidence to describe what had worked in comparable contexts. What it could not do was confirm whether those barriers hold in precisely the same way for the specific actors operating in Kenya today. It could not tell us whether Kenyan LFIs assess risk the way the literature assumes, whether EaaS providers here operate service-based models or upfront sales, what deposit levels facilities can mobilize, or what guarantee structures would be sufficient to unlock LFI lending. These are questions that only primary research can answer. This study was designed to answer them.

The primary research proceeded in three phases: secondary research, qualitative research, and quantitative research, each building on the last.

1 Secondary research

Secondary research reviewed and updated the literature landscape established in Busara Groundwork No. 28, with a focus on Kenya-specific data on electricity access, financing flows, and policy developments. This ensured that the qualitative and quantitative work was grounded in the most current available context, rather than assumptions carried forward from earlier evidence.

2 Qualitative research

With that updated baseline in place, the first phase of primary research used semi-structured interviews to understand how the barriers identified in Busara Groundwork No. 28 are experienced on the ground.

46

participants were interviewed across all four stakeholder groups

24 PPHFs across levels 2-4 in three counties
6 EaaS (Energy as a Service) providers
9 LFIs
7 Donor/funder/guarantor organizations

The interviews focused on decision-making, what factors shape whether a facility adopts solar, whether a lender enters the sector, and whether a provider structures deals as sales or services. This phase produced the texture and reasoning that numbers alone cannot provide.

3 Quantitative research

The qualitative findings identified where the critical thresholds and gaps lay.

37

respondents to structured micro-surveys were deployed across the same four groups

18 PPHFs
7 EaaS providers
9 LFIs
5 Donors

This quantitative phase put specific numbers on the patterns the interviews had surfaced – including adoption rates, affordability thresholds, deposit requirements, cost of capital, guarantee preferences, portfolio performance, and funding instrument priorities. Where the qualitative phase asked why, the quantitative phase asked how much and how many.

46	37	3	4
Qualitative interview participants	**Quantitative survey respondents**	**Counties covered**	**Stakeholder groups studied**

4 Gender considerations

One pattern was consistent across both phases: participation in the healthcare and energy sectors was overwhelmingly male. All surveyed healthcare facilities and EaaS providers were male-owned; faith-based facilities were governed by all-male boards. This is not a sampling artefact; it reflects the ownership and governance structure of the sector as it currently exists and has direct implications for how financing is designed and who it reaches.

Findings

The sections above described how the study was designed and what it set out to test. What follows are the results, presented in three layers: six cross-cutting patterns that hold across all four stakeholder groups; four findings that go beyond what the literature could have told us; and a stakeholder-by-stakeholder account of how each actor experiences the market. The System Diagnosis that follows draws these together into a single analytical frame.

Cross-cutting findings

In our primary research, we conducted 46 qualitative interviews and 37 quantitative surveys across PPHFs, EaaS providers, LFIs, and donors; we recorded our findings at two levels. The first level is presented here: six patterns that cut consistently across all four stakeholder groups. These are not findings from the literature review. They are patterns that emerged directly from the primary data, identified through cross-analysis of interview themes and survey responses, and validated by their consistency across different actors who have no direct relationship with one another.

Together, these six patterns, detailed below, tell a more coherent story than any single stakeholder's experience suggests. The healthcare electrification market in Kenya is not failing because demand is absent, technology is unsuitable, or borrowers do not repay. It is failing because the conditions required for scalable, sustained solutions, the right capital structures, risk-sharing mechanisms, and data infrastructure, have not been assembled. Each pattern below is one part of that explanation.

1 Demand is strong; reliability is not

Healthcare facilities report chronic and operationally disruptive power supply problems. A majority of 67% experience outages at least three times per week, while 44% report have no backup power at all. Where backup exists, it is almost universally diesel-based: expensive to run, difficult to sustain, and poorly suited to facilities whose power needs are continuous rather than occasional.

The picture that emerges from interviews is not one of passive tolerance but of active frustration: cold chains disrupted, diagnostic equipment offline, maternity services compromised by darkness. The demand for reliable energy is immediate, grounded in clinical necessity, and consistent across facility types and levels.

> The constraint is not willingness. Most PPHFs' facilities (94%) express readiness to adopt solar. What stops them is the gap between what they can pay upfront and what providers require.

2 Solar is viable; affordability is the binding constraint

There is strong convergence across the evidence on the technical suitability of decentralized solar for primary healthcare settings. Facility load profiles typically require 5-20 kilowatt-hours per day and align well with the 11-20 kW systems that EaaS providers most commonly deploy. Performance data from these systems is encouraging. The failure is not technical. It is financial.

Solar demand is high, with 94% of health facilities willing to adopt. However, most can only mobilize between 10% to 30% of system costs upfront. In contrast, energy service providers require deposits of 51% to 70% or more. This gap is not abstract; it is the single most cited adoption barrier across qualitative interviews at every facility level.

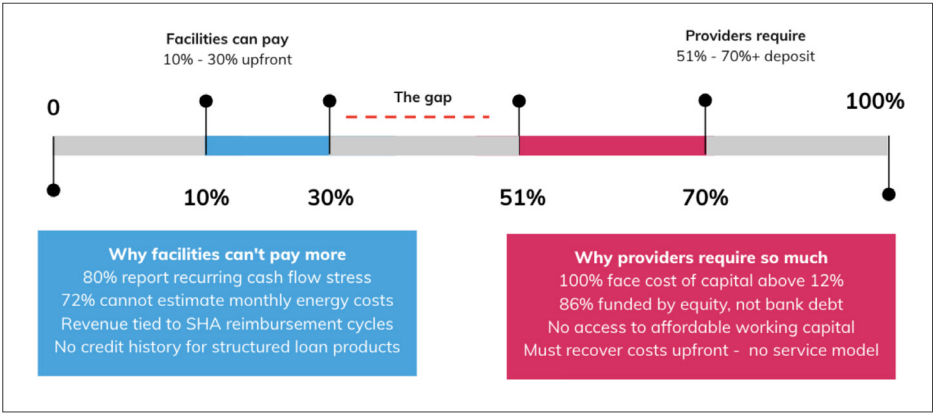


Figure 1: The deposit gap - the single point at which adoption most consistently breaks down

The financing design problem is specific and therefore solvable. It is not a generalized affordability issue requiring broad subsidies, but a deposit-gap problem that calls for targeted financial instruments aligned with how healthcare facilities generate and manage cash flow.

3 Perceived risk in financial institutions exceeds actual credit performance

Local financial institutions (LFIs) consistently describe healthcare energy lending as high-risk, and their behavior reflects this. The majority (75%) require guarantee coverage exceeding 76% before expanding lending into the sector. Yet the quantitative data tells a different story. Healthcare probability of default mirrors overall bank portfolios. There is no evidence of systematically elevated credit losses in healthcare lending. The dominant risk narrative is therefore one of perception rather than performance.

Qualitative findings shed light on what drives this perception. Two concerns recur most strongly.

The first is SHA reimbursement unpredictability. The data shows that 71% of lenders strongly agree that uncertainty around SHA payment timelines threatens facility viability. At the same time, 57% apply case-by-case revenue treatment, with no standardized haircut or sector-wide framework, leaving individual loan officers to make ad hoc judgments about a risk they have limited tools to assess.

The second concern is reputational. Lenders are uncomfortable with the prospect of enforcing against healthcare providers, and this discomfort acts as a real constraint even when credit models suggest the risk is manageable. Neither of these concerns is reflected in default data, but both continue to shape lending decisions. This dynamic may be more pronounced in Kenya due to the structure and ongoing transition of the SHA, suggesting that some of these constraints are context-specific rather than universal across markets.

The constraint is not in underlying credit performance but in how risk is understood and assessed. Addressing this requires not only financial instruments but also better information, sector-specific frameworks, standardized assessment tools, and credible performance data to enable more calibrated lending decisions.

4 Fragmentation prevents scale, but it is not the primary problem

Healthcare electrification is structurally fragmented. Individual facilities are small, geographically dispersed, and, on their own, insufficient to attract institutional capital. Most EaaS providers manage healthcare portfolios of fewer than 30 facilities, donor funding instruments typically target projects

above USD 2 million, and the transaction costs of standalone facility deals are high relative to the financing amounts involved. Portfolio aggregation has been identified in the literature as a natural response to this fragmentation, and the primary research confirms that it is necessary.

However, it is not sufficient. A portfolio of 20 facilities that still require 51% to 70% of deposits, relies on ad hoc SHA revenue assessments, and lacks standardized contract structures will not attract commercial capital simply because it has been grouped. Fragmentation is a compounding issue; it amplifies existing structural barriers rather than creating a separate one.

Aggregation alone will not unlock scale. Without parallel changes to capital structure, risk allocation, and standardization, portfolio approaches will remain insufficient to make the sector investable.

5 The market operates differently from how prevailing models assume

A significant portion of the blended finance and EaaS literature assumes that service-based delivery models, such as power purchase agreements (PPAs), PAYGO, and lease-to-own, are available and increasingly deployed. The primary data corrects that assumption.

A striking 86% of EaaS projects in this study are structured as upfront CAPEX sales rather than service contracts. PAYGO and PPA models remain marginal in practice. In addition, 86% of EaaS providers rely primarily on equity rather than bank debt for their own capitalization, indicating that the cost of capital structures assumed by service-based models are not yet accessible to them. Banks are largely absent as financing partners, and remote monitoring penetration, which is foundational to results-based finance, carbon credit verification, and evidence-based lending, remains at or below 20%.

6 Operations and maintenance remain a structural weak link

Notably, 61% of PPHF facilities lack a dedicated maintenance budget, and qualitative interviews consistently highlight limited in-house technical expertise as a concern. Providers, for their part, point to the difficulty of sustaining long-term system performance across a fragmented client base without the monitoring infrastructure needed to identify problems early.

> The gap between what models describe and what the market does is not a failure of ambition. It is a sequencing problem. The enabling conditions for service-based scale must be built before service-based models can deliver.

The result is a cycle of eroding confidence. Facilities that have experienced installation without adequate aftercare become skeptical about solar reliability, and that skepticism becomes a barrier for facilities that have not yet adopted these systems. For financiers, the absence of maintenance planning is a real underwriting concern. It signals that installed systems may degrade faster than projected, weakening the revenue streams on which repayment depends. Financing structures that address installation but not lifecycle performance are, in effect, financing the first year of a ten-year investment. These challenges are shaped by procurement practices, ownership structures, and accountability mechanisms, not only by technical capacity.

> Without integrating operations, maintenance, and performance monitoring into financing structures, investments will continue to underperform and struggle to build trust across the market.

What primary research adds beyond the literature

Beyond testing the assumptions carried forward from the literature review, the primary study surfaced a set of findings with no clear precedent in the published evidence. These are things the literature could not have told us, because they required direct engagement with the specific actors, institutions, and narratives of the Kenyan market as it exists today.

1 The deposit gap is specific, measurable, and closeable

The literature review noted, broadly, that high upfront costs were a barrier. The evidence puts a precise number on the mismatch. Facilities can contribute 10% to 30% of system cost upfront, while providers require 51% to 70% or more in deposits. That is not a general affordability problem requiring broad subsidy. It is a structural gap of a known magnitude, occurring at a specific transaction point, and it is the single most actionable finding this study produces.

Understanding why the gap exists is as important as knowing its size. The root cause lies not in provider preference but in provider capitalization. An incredible 100% of surveyed EaaS providers face a cost of capital above 12%, and 86% fund growth through equity rather than bank debt. Without access to affordable debt, providers have no mechanism for spreading capital recovery across a service contract; they must recover it upfront. The deposit requirement is a downstream consequence of how providers are forced to finance their own operations. Lowering it therefore requires changing the provider's capital structure, not simply introducing a grant to cover the difference at the facility level.

The gap also appears to vary depending on provider relationships with development finance. Interviews indicate that providers with established

DFI or NGO partnerships, where some capital has been pre-deployed on concessional terms, and in some cases reduced deposit requirements to the 30% to 40% range. This is not systematic, and no provider in this study's sample operated with deposits below 30%, but it establishes proof of concept: the gap can be narrowed when a third party absorbs part of the upfront exposure on the provider's side. The lease-to-own model documented in Busara Groundwork No. 28, in which a Kenyan facility made a 10% down payment and repaid over five to seven years, demonstrates the same principle from the facility side. Neither example is yet operating at portfolio scale. Both point to the same design logic: the deposit gap closes when concessional capital is positioned between the provider's capital cost and the facility's payment capacity, not when either actor is asked to stretch further than their financial position allows.

This is a design problem, not a demand problem. Deposit buy-down grants tied to verified installation, concessional equipment credit lines extended to EaaS providers to lower their cost of capital, and blended capital structures that absorb part of the upfront exposure at the portfolio level are all instruments calibrated to the specific mechanism through which adoption breaks down. They do not require new evidence to justify. The evidence is already here.

2 SHA reimbursement unpredictability is the dominant lender narrative

The literature review identified irregular cash flows and limited collateral as standard LFI concerns. The study found that, among Kenyan lenders, these concerns are subsumed within a specific and powerful narrative about SHA reimbursement unpredictability. A striking 71% of lenders strongly agree that uncertainty around SHA payment timelines threatens facility viability, and this belief shapes underwriting decisions in ways that go well beyond standard credit risk models.

Because no standardized framework exists for assessing SHA revenue, each institution manages it differently. With 57% applying purely case-by-case treatment, individual loan officers are left to reason from anecdote and reputation rather than from structured evidence.

This is not simply a financing problem but a deeper policy and governance issue rooted in how reimbursement systems are structured and funded. Standardized SHA revenue treatment frameworks, developed in consultation with lenders and SHA, could shift lending appetite more cost-effectively than large guarantee facilities.

The implication is that improving information and standardization may be as important as providing capital. Without clearer frameworks and shared data, risk perception will continue to constrain lending regardless of underlying performance.

3 Operational invisibility is a systemic data problem

Three of the quantitative findings, when read together, point to a problem more fundamental than capacity. The majority (72%) of facilities cannot estimate their monthly energy costs, 61% lack a maintenance budget, and remote monitoring penetration among EaaS providers sits at or below 20%. This gap is not only technical, but incentive-driven, as current systems do not require or reward consistent data reporting. The information required for results-based financing disbursements, carbon credit verification, evidence-based credit underwriting, and meaningful monitoring and evaluation does not currently exist at the scale these instruments assume.

Technical assistance programs that focus on energy literacy and capacity building are addressing the right general area, but the wrong specific problem. The intervention most likely to unlock downstream financing

instruments is investment in data systems: standardized monitoring tools embedded in EaaS contracts, simple energy accounting frameworks for facilities, and shared performance data infrastructure that makes the sector's actual risk profile visible to lenders and funders.

Without this, the gap between what financing models promise and what the market can deliver will persist, regardless of how much capital is directed at it.

> The data infrastructure required for results-based finance, carbon credits, and evidence-based lending does not currently exist at a meaningful scale. Technical assistance must build systems, not only skills.

4 The gender gap is structural, not incidental

All surveyed healthcare facilities and EaaS providers in this study were male-owned. All-male boards governed faith-based facilities. The literature review had limited gender-disaggregated evidence to draw on, and so this finding has no direct counterpart in the existing evidence base. What the primary research makes clear is that the absence of women-led enterprises in this market is not incidental; it is structural.

Women are not absent from the consequences of energy access constraints: as healthcare workers, as patients, and as primary users of facility services, they are among those most directly affected by unreliable power. What they are excluded from is the ownership and governance layer, the transactions, contracts, and financing relationships that this study examines. Financing design that is gender-neutral in structure will replicate that exclusion because the systems that currently govern access to capital in both the healthcare and energy sectors were not designed with women's participation in mind. Addressing this requires more than adding eligibility

criteria; it requires examining the collateral requirements, governance structures, network dependencies, and procurement processes that determine who can access these instruments in practice, and redesigning those that are exclusive by default.

> Gender inclusion must be designed into the system, not added onto it. Without addressing the structural barriers that shape access to ownership, capital, and decision-making, financing interventions will continue to reproduce the same patterns of exclusion they seek to overcome.

Findings by stakeholders

Private primary healthcare facilities

Healthcare facilities show a clear need for reliable electricity, but face both financial and operational barriers to adopting solar solutions.

Quantitative findings highlight the gap between demand and ability to pay:

94% **Willing to adopt solar systems**
67% **Experience outages 3+ times/week**
44% **Have no backup power at all**

80% **Report recurring cash flow stress**
72% **Cannot estimate monthly energy costs**
61% **Lack a maintenance budget**

Most facilities can only contribute 10% to 30% upfront, which falls well below what energy service providers require.

Interviews further highlight governance and trust issues. Decision-making is often slow, especially when board approval is needed, and past experiences with poorly installed systems have reduced confidence in solar solutions. Overall, the constraint is not willingness. Facilities want reliable energy but lack the financial capacity and internal systems to act on that demand.

Energy-as-a-Service (EaaS) providers

Energy providers have the technical capability to deliver solar solutions, but current market conditions limit their engagement in healthcare.

The data shows a clear pattern:

>50% Upfront deposit required by most providers
<30 Facilities per typical provider portfolio
100% Report cost of capital above 12%
0-5% Arrears rate across provider portfolios
0-2% Write-offs across provider portfolios

Despite this, service-based models remain limited. Most projects are structured as upfront CAPEX sales, with minimal use of leasing, PAYGO, or power purchase agreements.

Interviews also reveal that healthcare is often not a priority market. Providers prefer larger and more predictable clients, and minimum deal sizes exclude many smaller facilities.

In effect, providers are not scaling in healthcare, not because solutions do not work, but because the market does not support viable business models.

Local Financial Institutions

Local financial institutions remain largely absent from the healthcare electrification market, despite their potential role in scaling financing.

Quantitative findings show:

Comparable

Healthcare lending risk is similar to other sectors

75%

Require >76% guarantee coverage

Low

Exposure to healthcare in loan portfolios

Qualitative insights explain this gap. Lenders cite concerns around irregular cash flows, lack of collateral, and unfamiliarity with energy business models. There are also concerns about reputational risk, especially in enforcing loans against healthcare providers, and uncertainty around healthcare payment systems.

This creates a clear disconnect; the issue is not actual credit performance, but how risk is perceived and managed.

Donors, funders, and guarantors

Donors continue to play a central role in financing healthcare electrification, but their approaches do not always align with market realities.

Quantitative findings show:

>USD 2M

Preferred project size for funding

High

Focus on technical assistance and blended finance

Strong

Emphasis on partnership-based delivery models

Qualitative insights reinforce this. The sector is widely seen as high-impact but not commercially viable without support, leading to continued reliance on subsidies and de-risking tools.

This reflects a trade-off between efficiency and reach. Larger projects reduce transaction and reporting costs for donors, but systematically exclude smaller, facility-level demand. As a result, current funding structures do not just overlook smaller facilities, they actively shape the market toward larger deployments. Addressing this requires rethinking how donor capital is structured, not only increasing in volume.

Each of the four accounts above describes a market that is stuck, but for reasons that look, from each actor's position, like someone else's problem. Facilities blame deposit requirements. Providers blame the absence of affordable debt. Lenders blame SHA unpredictability. Donors blame fragmentation. All of them are right, and none of them can move alone. The section below steps back from the individual actor perspective and shows what these constraints look like as a system.

The system diagnosis: a coordination and capital-structure failure

Our primary research confirms the core diagnosis suggested by the literature review (Busara Groundwork No. 28) but with a sharper frame. This is not a market viability failure. The demand is real. The technology works. The repayment behavior is sound. What has failed is the coordination of capital, the alignment of financing instruments with the operational realities of each actor in the system. This misalignment is not only technical but institutional. Actors who determine the structure of capital and regulation are not the same actors who bear financial and operational risk. As a result, incentives across the system remain weakly aligned.

Table 1. Comparing literature assumptions with study findings by stakeholder

Actor	What the literature assumed	What the study confirmed
Healthcare Facilities	**Demand uncertain; cash flows irregular; capacity to pay unclear**	Demand strong (94%); cash flow stress real (80%); adoption fails at deposit stage, not intent
EaaS Providers	**Deploying service models; constrained by working capital**	86% are CAPEX sales, not service models; equity-funded; deposit requirements reflect capital costs, not preference
Local Financial Institutions	**Absent due to genuine credit risk; de-risking instruments could help**	Absent due to perceived risk, not actual performance; healthcare PD mirrors broader portfolio; SHA narrative unexamined
Donors	**Well-positioned to crowd in private capital through blended finance**	Capital available but structurally misaligned; ticket sizes and cycles do not match fragmented, facility-level demand

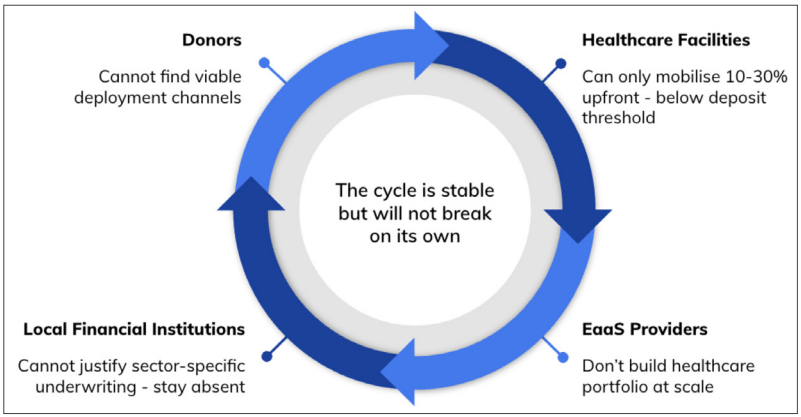


Figure 2: The self-reinforcing cycle – why no single actor can break this alone

The consequences of this misalignment are self-reinforcing. Because facilities cannot meet deposit requirements, EaaS providers do not build healthcare portfolios. Because healthcare portfolios are small and fragmented, LFIs cannot justify the transaction costs of sector-specific underwriting. Because LFIs are absent, EaaS providers cannot access affordable debt to lower deposits. Because all three are absent, donors cannot find commercially viable vehicles through which to deploy capital at scale. The cycle is stable, but it will not break on its own.

The diagnosis is not a counsel of despair. Each of the constraints described above is structural, which means it is also designable. The section below translates the diagnosis into practical directions: what needs to change, for whom, and in what sequence. The sequencing matters as much as the interventions themselves, because some instruments only work once others are in place.

Implications and recommendations

Implications for financing design

To unlock scale, financing approaches need to reflect how the market operates in actuality.

First, aggregation is essential. Individual healthcare facilities are too small to attract investment on their own. Grouping facilities into portfolios can reduce transaction costs, spread risk, and make projects more attractive to both providers and financiers. In practice, aggregation can take several forms. These include provider led portfolios where EaaS companies bundle multiple facilities, intermediary led structures such as special purpose vehicles (SPVs) that pool assets across providers, and county-level aggregation model coordinated through local governments or health systems. Each approach raises different questions about who holds portfolio risk, how revenues are pooled, and how governance is structured, and these design choices will determine whether aggregation is feasible at scale.

Second, risk needs to be shared differently. Financial institutions require high levels of protection due to perceived risk. Blended finance structures, combining guarantees, concessional capital, and first-loss layers, can help shift this balance and crowd in private capital.

Third, upfront cost barriers need to be reduced. Most facilities cannot meet current deposit requirements. Financing mechanisms that lower upfront payments, such as concessional credit lines or partial subsidies, are critical to increasing adoption.

Fourth, market infrastructure needs strengthening. Standardized contracts, clearer credit assessment tools, and better data on facility performance can improve confidence across the system.

Finally, long-term sustainability must be built in from the start. Financing should account not just for installation, but for operations, maintenance, and system performance over time.

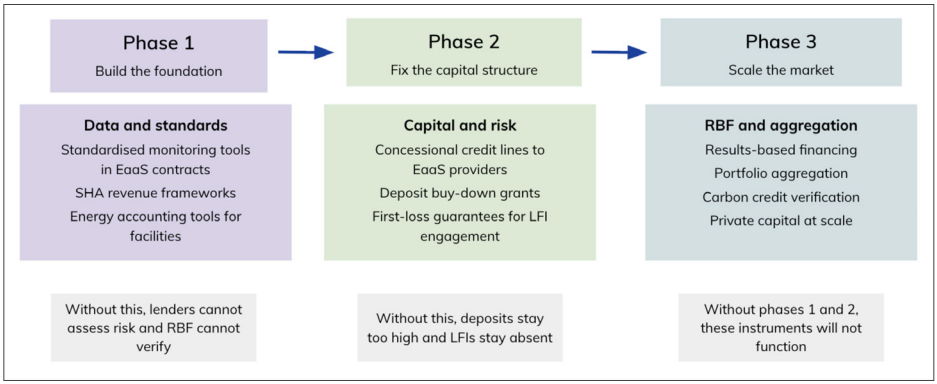


Figure 3: Sequencing matters as much as the interventions themselves - each phase unlocks the next; instruments deployed out of sequence will not work

Recommended approaches

Table 2. Key barriers and suggested approaches

Actor	Rationale	Suggested Approach
Portfolio-based financing	**Individual projects are too small and fragmented**	Aggregate facilities at county or regional level to create investable portfolios
Blended finance structures	**Risk perception limits private capital**	Combine guarantees, concessional debt, and first-loss capital to reduce lender exposure
Upfront cost reduction	**Facilities cannot meet high deposits**	Introduce deposit buy-downs and concessional financing to lower entry barriers
Technical assistance	**Weak financial and operational systems**	Support standardized contracts, credit tools, and system monitoring
Performance-linked funding	**Donors require measurable outcomes**	Link funding to outputs such as uptime, number of facilities electrified, and service improvements
Revenue stabilization	**Unpredictable cash flows increase risk**	Use service-based models with clear tariffs and performance agreements

Gender considerations

Participation in both the healthcare and energy sectors in this study was almost entirely male. All surveyed healthcare facilities and EaaS providers were male-owned, and faith-based facilities were governed by all-male boards. This is not a sampling artefact; it reflects the structural reality of who currently holds ownership, governance, and decision-making positions in both sectors across the counties studied.

The evidence suggests that gender exclusion in this market operates at a more fundamental level than access to finance. Women are among those most directly affected by unreliable power, as health workers, patients, and primary caregivers, but they are excluded from the transaction layer entirely. The ownership structures, procurement relationships, and financing conversations this study examines. Adding a gender lens to an instrument designed for the existing transaction structure will reach those already proximate to capital, not those structurally excluded from it.

The barriers operate at three levels.

1. ***Collateral requirements favor land title holders in contexts where land ownership is predominantly male.***
2. ***Governance structures in smaller facilities concentrate decision-making in owners or boards that women-led enterprises rarely occupy.***
3. ***Network-dependent procurement rewards existing relationships in markets where women have had fewer pathways to build them.***

None of these are resolved through eligibility criteria alone. What financing design can do is start from these realities rather than adding gender later. In practical terms this means:

- requiring gender-disaggregated lending data from financial institutions;
- building incentives for lending to women-led enterprises into guarantee structures;
- partnering with existing women-led networks to develop a pipeline of eligible borrowers;
- measuring outcomes beyond ownership: employment effects, service delivery improvements, and working conditions of healthcare staff.

The absence of women from this study's sample should be treated as a finding the next phase of work actively seeks to address.

Limitations

This groundwork is intended to provide directional insights rather than a comprehensive assessment of the sector.

The primary data is based on a limited sample of healthcare facilities, energy providers, financial institutions, and donors. While the sample captures a range of perspectives, it may not fully represent all regional or institutional variations across Kenya.

Some of the data, particularly from healthcare facilities, is based on self-reported information. In many cases, facilities do not have detailed records of energy use or costs, which may affect the precision of certain findings.

The study also focuses on private primary healthcare facilities and may not fully reflect the dynamics within public health systems or larger hospitals.

Gender representation within the sample is limited. Most of the surveyed healthcare facilities and energy providers were male-owned, and women-led enterprises were largely absent from both qualitative and quantitative samples. As a result, the findings may not fully capture the experiences, constraints, or opportunities specific to women-led businesses or practitioners in the sector.

Despite these limitations, the consistency of findings across qualitative and quantitative data provides confidence in the overall patterns identified. The insights should be understood as a foundation for further research, testing, and design.

Conclusion

Busara Groundwork No. 28 asked: What does the evidence say about why healthcare facilities in Kenya cannot access reliable energy financing? This study asks whether that evidence is reflected in what actors in the Kenyan market are actually experiencing.

The data confirms that local experiences largely reflect the evidence, with important refinements. The barriers are real. The assumptions around fragmentation, LFI caution, upfront cost constraints, and donor misalignment were directionally correct. What primary research adds is precision: the thresholds at which adoption breaks down, the narratives that shape LFI risk perception, the structural misalignment between donor instruments and facility-level demand, and the market conditions that have limited the scale of EaaS models in practice.

The most important correction
The literature review treated this as a market with genuine underlying risk that required de-risking. Primary research suggests it is a market with manageable risk that has been systematically perceived as high in the absence of information, standardized tools, and coordinated capital. The intervention required is partly financial and largely structural: aggregation, data infrastructure, standardized frameworks, and deliberate capital architecture.

This study has done what a literature review cannot. It has confirmed which assumptions hold on the ground, put specific numbers on the gaps, and identified the sequencing of interventions that the evidence supports.

Building the architecture, the aggregation structures, capital instruments, data infrastructure, and standardized frameworks, is the focus of the next phase of work. The evidence base to design it is now in place.

Key takeaways

1. *Reliable power remains out of reach for most healthcare facilities. A surprising 26% have no electricity; of those connected, only 15% receive a reliable supply. This directly undermines cold chains, diagnostics, emergency care, and maternity services.*

2. *Demand is not the constraint. A staggering 94% of facilities are willing to adopt solar. What stops them is the deposit gap; they can mobilize 10% to 30% upfront; providers require 51% to 70% or more.*

3. *LFIs are absent because of perception, not performance. Healthcare lending default rates mirror broader portfolios. What keeps lenders out is the SHA reimbursement narrative, a risk perception problem, not a credit problem.*

4. *EaaS providers are selling, not serving. A majority (86%) of projects are structured as upfront CAPEX sales, not service contracts, because the enabling conditions for service-based delivery have not been built.*

5. *The barriers reinforce each other. No single actor can break the cycle alone. The intervention must work at the level of the system, capital architecture, aggregation, data infrastructure, and coordinated sequencing.*

6. *Gender exclusion is structural. All surveyed facilities and EaaS providers were male-owned. Financing design that is gender-neutral in structure will reproduce this exclusion.*

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Busara Groundwork
FRAMING DOCUMENT

About Busara

Busara is a research and advisory organization, working with researchers and organizations to advance and apply behavioral science in pursuit of poverty alleviation. Busara pursues a future where global human development activities respond to people's lived experience; value knowledge generated in the context it is applied; and promote culturally appropriate and inclusive practices. To accomplish this, we practice and promote behavioral science in ways that center and value the perspectives of respondents; expand the practice of research where it is applied; and build networks, processes, and tools that increase the competence of practitioners and researchers.

About Busara Groundwork

Busara Groundwork lays the groundwork for future research and program design. As think pieces, they examine the current state of knowledge and what is needed to advance it, frame important issues with a behavioral perspective, or put forward background information on a specific context.

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