British International Investment

UK International Development
Partnership | Progress | Prosperity

How does BII drive change in standalone solar markets in Kenya and West Africa?

Insights from Sun King, M-KOPA and PEG Africa

Evaluation

Published: September 2026

Independent evaluators
Ed Day, John Ward (Greencroft Economics), and Joel Moktar (Wellspring Development)

Evidence-based insights drawn from independent evaluation

Our evaluations provide independent assessments of the development impact of our investments. They fill evidence gaps, test assumptions and inform our decision-making to strengthen our impact on people and the planet.

▸ **To find out more visit: bii.co.uk/howwelearn**

Greencroft Economics

wellspring

Evaluations at BII

BII helps solve the biggest global development challenges by investing patient, flexible capital to support private sector growth and innovation. We strive to ensure that evaluations are at the heart of how we make decisions and drive impact. Our evaluations help us learn, improve, and stay accountable.

Key principles

Relevant
Evaluations are designed to address BII's strategic priorities, and FCDO's and BII's evidence needs

Independent
Evaluations are led by independent external evaluators and overseen by FCDO

Transparent
Evaluations are published on BII's website to support accountability and wider learning

Engaged
Evaluations findings are shared with BII's teams to integrate lessons into their work

How we use evaluations

Accountability
Evaluations demonstrate our impact to FCDO and other scrutiny bodies, while providing evidence of the impact of private sector investment to the wider development community

Learning
Evaluations inform our investment strategy and impact management approach and contribute thought leadership on private sector investment to the impact investment and development finance community

To find out more about our approach, visit **bii.co.uk/howwelearn**

Disclaimer

Acknowledgements

Greencroft Economics and Wellspring Development are grateful for the guidance and review of BII throughout, particularly from Sarah Marchand, Kate Griffith, Clément Bisserbe, and Chris Dartsmith. We are also grateful to the BII Energy Access and Efficiency team, particularly Geoff Manley, Mathilde Girard, Emma Hawkins, and Hayley Fenton.

Contents

Foreword

Access to reliable and affordable electricity remains one of the greatest barriers to development across many countries in Africa. For households beyond the reach of the grid, standalone solar products play an important role in expanding access to clean, affordable energy, helping families and businesses improve their livelihoods and opportunities. Improving energy access remains a priority for governments, development finance institutions and the wider development community. At British International Investment (BII), we are proud to be part of Mission 300, which aims to connect 300 million people in Africa to electricity by 2030.

We began investing in the nascent standalone solar sector in 2015. While the potential was evident, business models were largely unproven, commercial capital was limited, local currency financing was constrained, and significant barriers remained to reaching customers at scale. Between 2015 and 2023 (the period considered for this evaluation), we invested around $130 million to the sector, supporting companies and funds working to expand energy access across Africa.[1] We focused on providing early-stage, risk-tolerant local currency debt that could enable companies to grow without taking on the risk of adverse foreign exchange movements or bearing excessive hedging costs for dollar-denominated debt. Our ambition was not only to support individual companies, but also to help shape the market and demonstrate viable approaches that could attract further investment – ultimately from local banks – and contribute to the development of a stronger and more sustainable market.

This report explores the extent to which that ambition has been realised. Through an independent evaluation of our investments in the sector,[2] it examines whether and how catalytic capital has contributed to market development, and whether its impact extends beyond individual investees to influence wider market behaviour.

The report finds that our local currency loans played an important role in supporting the growth of standalone solar companies. In particular, Sun King's growth has demonstrated a successful business model in a challenging sector. Beyond this, we have actively encouraged other impact investors to provide local currency loans – and there has been a significant increase in the volume of local currency debt available to standalone solar companies since our initial investments. Furthermore, we have been able to work with local banks, notably several that have recently participated in securitisation facilities, including two by Sun King supported by BII – offering a potentially powerful tool for providing local currency financing to companies using future customer payments as collateral.

At the same time, the report highlights the realities of market-building. Macroeconomic shocks, high costs of serving last-mile customers and execution challenges have led to mixed commercial results across the sector. We believe we have helped mobilise a significant increase in local currency financing through advocacy and co-financing with likeminded local banks and DFIs, but we recognise that local currency lending remains concentrated in a few companies – demonstrating that market transformation is rarely linear.

For BII, the lessons reinforce the importance of commercial viability in delivering sustainable development impact, the value of a diversified investment approach in a very nascent market, and the need to continue supporting innovation where it has the potential to unlock broader change.

Geoff Manley
Head of Energy Access and Efficiency
British International Investment

1 Our investments in standalone solar providers and sector-specific funds between 2015 and 2023 were made through our Catalyst portfolio, with the exception of an equity investment in M-KOPA. In this period, BII also made a wide range of investments in larger energy sector companies through our Growth portfolio, and financed SunCulture, a solar-powered water pump provider, through our Kinetic portfolio.

2 In addition to investments, BII also provided technical assistance to investees and supported wider market-shaping initiatives such as the development of a standardised set of industry metrics, customer protection principles and industry publications. The support is described in this report but was not explored in depth in the evaluation.

Executive summary

Objectives and scope

Between 2014 and 2024, BII's Catalyst Portfolio committed $1.9 billion to more than 100 businesses and funds. When making these investments, BII has often sought to improve the quantity, price, range or quality of services offered by companies, both through the direct effects of its investees, and by influencing the behaviour of other companies and investors. The second mechanism – catalysing market effects – is particularly important for investors seeking transformational change beyond the direct impact of their investments.

This paper evaluates the extent to which Catalyst's investments in the standalone solar sector – $130 million between 2015 and 2023 – have delivered direct and/or catalysing market effects. BII's Catalyst investments include direct loans to Sun King, M-KOPA and PEG Africa (PEG), and contributions to two sector-funds: the Energy Access Ventures Fund (EAVF) and the Energy Access Relief Fund (EARF). Through these investments, BII's investees have contributed to the development of markets for standalone solar for households (solar lanterns and solar home systems – in Kenya[3] and in Côte d'Ivoire, Senegal and Ghana, treated collectively as a single West African market in this evaluation.

What changes have been seen in Kenya and West Africa's standalone solar markets?

The evolution of standalone solar sales volumes differs markedly between the geographic markets examined. In Kenya, annual sales have generally increased since 2015, reached a record 2.3 million units in 2024. The Kenyan market has consistently accounted for around a quarter of global sales since (before) BII started to invest in the sector. By contrast, annual sales in West Africa have remained much lower, at or below 150,000 units each year, and have declined since 2020.

Company performance differs across regions, with greater evidence of commercial success in standalone solar for companies with a strong Kenya presence. Of the early entrants to the sector, d.light and Sun King – both significant players in the Kenyan market – have achieved scale and shown clearer progress towards commercial sustainability. Other early entrants, particularly firms focused on West Africa have struggled and several have exited the market. Later entrants in both regions show early signs of good commercial performance, although results overall remain mixed. Challenging market conditions have also driven a wave of consolidation across the sector in recent years.

Global investment volumes have plateaued at around $300 million per year since 2016, but with changes in the type of financing. Debt and off-balance sheet financing accounted for 45 per cent of investment between 2014 and 2017, rising to 61 per cent from 2018. Local currency lending and securitisation – the pooling of receivables and conversion into tradable securities to raise upfront capital – have become more prominent since 2020, while lending commitments from local banks remain limited. Investment data by region or market are not available, but overall volumes appear to have followed the same trends as product sales.

Did BII's investments contribute to these changes?

This evaluation examines three possible pathways through which BII may have supported these changes. The pathways are: (i) changes in BII's investees, referred to as direct effects, (ii) whether BII's investees demonstrate successful business models that are subsequently replicated by other companies, and (iii) whether other companies and investors have adopted financing structures supported by BII. The latter two are examples of catalysing market effects.

It finds that BII's direct investees delivered direct effects, although only Sun King has sustained them. Since BII's 2019 investment, Sun King has become Kenya's market leader, accounting for more than 40 per cent of sales between 2019 and 2024. Its volumes have more than doubled – increasing five times faster than the Kenyan market as a whole. M-KOPA sold more than one million solar home systems, mostly in Kenya, but its sales peak predates BII's investments. The company has since made a strategic shift away from standalone solar. PEG was a leader in the West African market, recording more than 90,000 sales across Senegal, Côte d'Ivoire and Ghana, but did not sustain this growth. It was acquired by Bboxx in 2022, and Bboxx has since undergone a major restructuring.

BII's investees have delivered significant impact. Using industry-standard methodologies, it is estimated that, since BII's initial investment in each company, Sun King, M-KOPA and PEG have collectively reached around 18.6 million people, avoided 7.6 million tonnes of CO_2 emissions, contributed up to $790 million of extra income for households, and supported around 20,000 jobs in the supply chain.[4]

3 BII's loans to M-KOPA supported sales in Kenya and Uganda, while its loans to Sun King supported sales in Kenya, Tanzania, and Uganda. However, for both companies, the vast majority of sales were in Kenya.

4 Based on the GOGLA (Global Off-Grid Lighting Association) standardised impact metrics. For example, for income increases estimated as the number of households using their solar home system to generate income, times the average income increase.

Sun King's success has generated important demonstration effects for other companies, but there is less evidence of such effects from BII's other investees. Sun King is seen as a market leader both commercially and in terms of hardware, with strong evidence that other companies, both in Kenya and other geographic markets, look to emulate its technologies and business strategies. BII's investment in supporting Sun King's growth and commercial success has been important in facilitating these demonstration effects. Similar effects are not seen for BII's other direct investees; either because any demonstration effects preceded BII's investment (M-KOPA) or because the company is not perceived as having achieved notable success over the medium-term (PEG and M-KOPA in standalone solar markets).

BII's roles as a lead financier of local currency debt and a securitised lending facility have been important in supporting the growth of its investees – in particular for Sun King – but have not yet had substantial catalysing markets effects for other standalone solar companies. Demand for local currency debt and securitisation facilities has grown. Demand for local currency lending has been driven mainly by sharp currency depreciations in some large standalone markets. BII is recognised as a strong advocate of local currency lending, and its willingness to offer such loans at concessional rates has made them more attractive to its investees and may have encouraged other international finance institutions (IFIs) to offer similar financing on concessional terms. However, international investors noted that they already had the tools to provide such loans if companies were prepared to pay market rates. Meanwhile, local banks remain hesitant to lend, given that many companies have yet to establish a commercial case. For securitisation, it is too early to assess demonstration effects. Only two companies have used securitisation facilities at scale since 2021: Sun King and d.light. Of these, the d.light transactions, led by Africa Frontier Capital (AFC), are seen as more important by others in the sector, especially the 2021 Brighter Life Kenya 1 (BLK1) facility. This is because it was the first of the recent wave of securitisations and its lenders have been fully repaid ahead of schedule.

Implications and lessons

The evaluation highlights the mixed success of both BII's investees and others in achieving commercial viability from the sale of standalone solar products in Kenya and West Africa. Sun King's has sustained and scaled up its sales, resulting in substantial direct effects in Kenya, while its commercial performance has strengthened its demonstration effects. By contrast, M-KOPA's pivot away from standalone solar, together with Bboxx's acquisition of PEG and subsequent restructuring, means that the companies' direct effects have not been sustained and their catalysing market effects have been limited. The evaluation also finds that BII's Catalyst financing – especially its support for Sun King – was instrumental in enabling Sun King to deliver both direct and catalysing market effects. Although valued, BII's technical assistance (TA), played a less significant role.

Drawing on these insights, four lessons emerge for development finance institutions (DFIs) and other impact investors looking to deliver catalysing market effects, either in the standalone solar market or elsewhere:

1. Commercial viability is a prerequisite for achieving catalysing market effects. To deliver such change, **DFIs need to invest in companies with strong commercial potential and support them in pursuing a path to commercialisation that aligns with their impact objectives.** This may involve investing in companies that apply clear customer segmentation, or encouraging investees to adopt this practice, to establish a credible pathway to profitability.
2. In markets where identifying commercially promising companies is difficult – as was the case when BII entered the sector in 2015 – **a portfolio approach** of investing in multiple promising companies **can increase the likelihood that a DFI will generate catalysing market effects**.
3. Catalysing market effects often unfold through **a series of interim steps that DFIs may find useful to articulate explicitly**. For example, in the standalone solar market, steps have included demonstrating technological readiness of products, establishing that certain customer segments are willing to pay, and showing sufficient growth prospects to attract commercial capital. These milestones have been achieved even though long-term commercial viability remains uncertain for many companies and markets. By setting out these steps, DFIs and impact investors can clarify the stage and timeframe targeted by each investment, and can adjust course more nimbly when necessary.
4. Achieving commercially viable growth may require companies to adapt their business models and product offerings, as M-KOPA's experience illustrates. **DFIs can support direct effects and catalysing market effects by adopting a flexible approach, recognising that impacts may emerge in markets or through business models other than those originally intended**, provided they remain consistent with the DFI's impact objectives.

Impact pathway dashboard

Impact pathway 1: Direct effects

Hypothesis: BII's investees have substantially scaled up the number of households served by standalone solar systems, enabled by BII's investment.

Substantial change in BII investee companies	Sun King substantially scaled up sales of standalone solar products in Kenya, more than doubling its sales volumes since 2019. While other investee companies (M-KOPA and PEG) have seen less significant and sustained change, the scale of Sun King's expansion is large enough to be considered a substantial change.
Substantial change in direct outcomes	Sun King accounts for more than 40 per cent of sales in Kenya since 2019, and has more than doubled its sales, while the Kenyan market as a whole has grown 20 per cent over the same period.
Substantial BII contribution to these changes	BII's investment was key to enabling Sun King's scale up, by providing substantial volume and in local currency that would otherwise not have been available at the time.

Impact pathway 2: Investee demonstration effects

Hypothesis: BII's investees have been among the early movers in their countries of operations, and they have demonstrated success, elements of which other companies have seen and replicated.

Moderate change in BII investee companies	Sun King demonstrated a successful business model (including scaling through a mix of PAYGo/cash sales and hardware product development). Other direct investees have not achieved sustained success within the markets of focus.
Moderate change in other market actors' behaviour	Other companies view Sun King as a leader in hardware development, commercial performance and scalability, and some have developed similar product lines. Some view M-KOPA's shift to other products and PEG's acquisition by Bboxx and subsequent restructuring as potential signals that standalone solar may not always have a path to commercial sustainability.
Substantial BII contribution to these changes	BII supported Sun King in demonstrating a successful business model at scale by serving as a lead contributor to the company's growth (as described in Impact Pathway 1).

Impact pathway 3a: Local currency demonstration effects

Hypothesis: The way in which BII invested – through local currency lending – has demonstrated to others the viability and importance of this as a financing mechanism that enable investees to succeed, such that others have also adopted it.

Moderate change in BII investee companies	Sun King successfully used local currency lending to support sustainably scaling up its standalone solar offering.
Moderate change in other market actors' behaviour	Prior to 2016, local currency finance was a rarity, accounting for just 9 per cent of debt and other debt-related finance recorded by GOGLA. Since a first spike in local currency finance in 2016 (rising to 52 per cent in that year), with BII's first local currency loan since a first spike in 2016, local currency finance has accounted for 32 per cent of debt and other debt-related finance, albeit with significant fluctuations from year to year. However, this local currency finance remains concentrated among a small number of large companies.
Limited BII contribution to these changes	Transactions in which BII has participated have provided a substantial share (40 per cent) of local currency financing up to 2024. However, BII's lending is not seen as the main driver of the increase in demand for and supply of local currency debt from other companies and lenders.

Impact pathway 3b: Securitisation demonstration effects

Hypothesis: BII's investment approach of supporting securitisation facilities has demonstrated to others the viability and importance of securitisation as a financing mechanism that enables investees to succeed, encouraging others to adopt it.

Moderate change in BII investee companies	Sun King used a securitised facility to scale up sustainably.
Too early to tell change in other market actors' behaviour	Only Sun King and one other company, d.light, have set up securitisation facilities at scale. It is too early to tell whether securitisation will play a major role in financing other companies.
Too early to tell BII contribution to these changes	BII's securitised facility was key to enabling Sun King's growth, but d.light's earlier facility is seen as the more important demonstration of the viability of securitised facilities.

1

Introduction

This report explores whether BII's investments in standalone solar companies in Kenya and West Africa have delivered significant direct or catalysing market effects in the standalone solar sector. The primary audience is BII teams looking to develop investment strategies that deliver substantial catalysing market effects, as well as other development finance institutions (DFIs), multilateral development banks (MDBs), and impact investors sharing this objective. It outlines BII's experience in seeking to generate direct and catalysing market effects in the standalone solar sector, focusing on markets in Kenya and West Africa. It also draws lessons for future investment in this sector and for investments aiming to generate catalysing market effects more broadly.

Between 2014 and 2024, BII's Catalyst portfolio committed $1.9 billion to more than 100 businesses and funds. The Catalyst portfolio takes a flexible approach to risk in return for impact and, as such, may experience lower returns than BII's main Growth portfolio. This enables it to provide financial support to a broader range of high-impact businesses and projects,[5] with the aim of transforming markets.[6]

Catalyst investments seek to deliver impact both through their direct effects and by catalysing changes among other companies and investors operating in the broader market. Catalyst seeks to influence the quantity, price, range and quality of services offered by companies, as well as how market actors behave in pursuit of these outcomes, including through changes to their business models or financing arrangements. As set out in BII's Impact Framework (Figure 1), these changes can be achieved in three ways, two of which are examined in this evaluation.[7] First, Catalyst investments and investees can have a direct impact. Second, they can influence the behaviour of others, generating what are referred to as 'catalysing market effects'. These effects are particularly important for DFIs and impact investors seeking to drive transformational change beyond the direct stakeholders of invested projects.[8]

5 BII (2024), Pioneering catalytic capital: a decade of learning

6 Catalyst may also make investments that deliver enhanced development impact.

7 The third way is through BII investees supplying essential inputs to companies in another market with BII's investment improving the provision of that input to the extent that it leads to market-level changes in that third market, for example, investments in power generation that lead to market-level changes in a range of markets for manufactured goods.

8 BII (2025), Driving market-level changes in impact investing

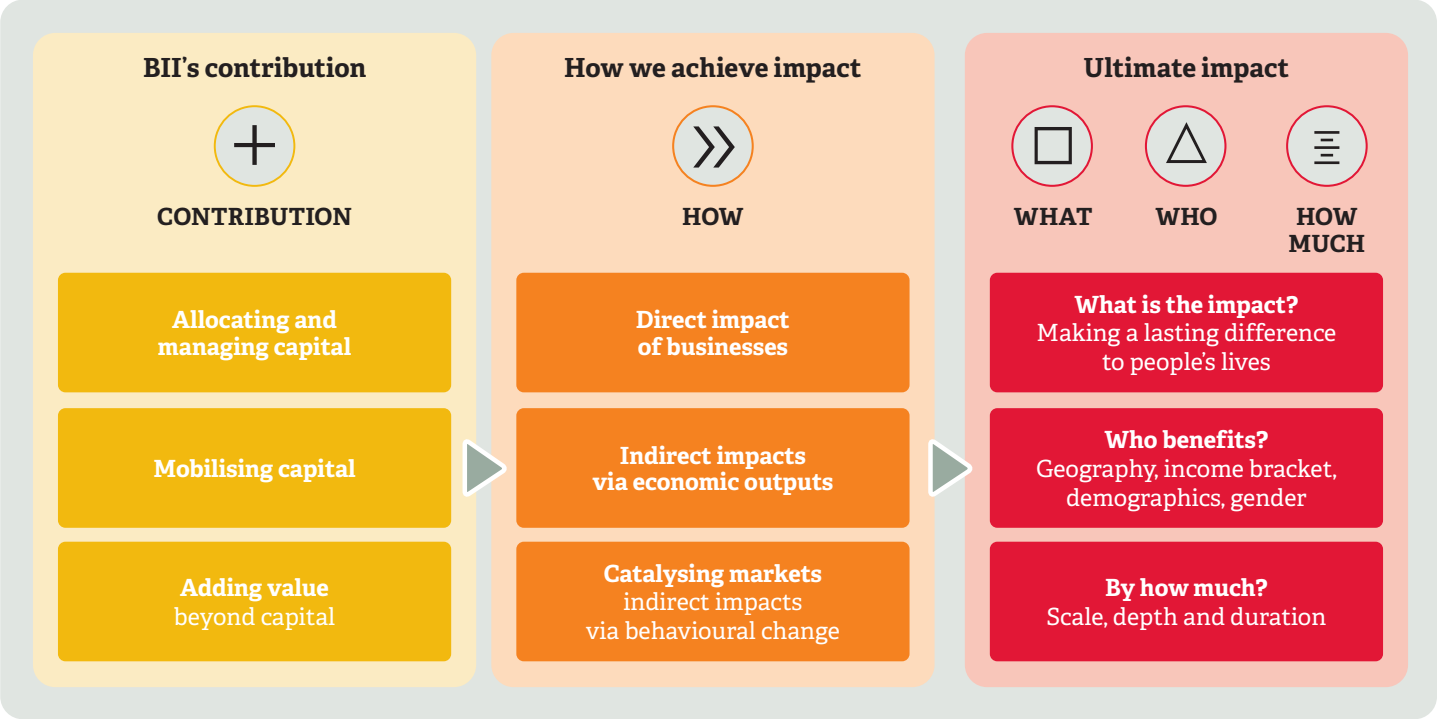


Figure 1: BII Impact Framework for the 2022-26 strategy period
Source: BII (2023) "What impact means to us: an overview of how we manage impact"

This evaluation considered four channels through which investments may catalyse markets:[9]

- **Enhancing competition:** by supporting existing companies or new entrants in ways that increase competitive pressure, resulting in product innovation, improved product quality, or price reductions.
- **Providing demonstration effects:** by pioneering a new business model or proving the viability of an immature market. One signal that demonstration effects are being successfully transmitted is the replication of the demonstrator's business model or other practices.
- **Building skills and capacity:** by developing workers or suppliers who subsequently join or start rival firms, or by helping to develop new products that enter other firms' supply chains.
- **Improving the enabling environment:** for example, by demonstrating the viability of new regulation approaches or market structures, such as investing in the first public-private partnership in a country or sector.

When BII first invested in key standalone solar markets, it was clear that addressing key barriers to the sector's growth could have a significant impact on people and the planet. In 2015, the sector was recognised as critical to achieving energy access goals but remained nascent,[10] with an uncertain future growth trajectory, and no established commercially successful operators. Key barriers to its development included: (1) uncertainty about whether businesses could become profitable and the best business models for achieving this; (2) risk perception among local banks, which limited access to local currency lending; and (3) the high structural costs of serving last-mile communities, whose ability to pay tends to be relatively low.

BII made significant commitments to the sector, investing around $130 million between 2015 and 2023, primarily through Catalyst. This capital was provided to address some of these barriers by, for example, by facilitating the growth of commercially successful businesses that would, in turn, change the risk perceptions of local banks.

9 BII (2025), Driving market-level changes in impact investing

10 For example, the International Energy Agency's 2011 World Energy Outlook identified that off-grid solutions (rather than extensions to centralised grids or mini-grids) were the preferred solution for delivering 20 per cent of the additional electricity expected to be needed to achieve energy access goals by 2030. In more recent analysis, the World Bank estimated that off-grid solar is the most cost-effective way to power 41 per cent of the people living without energy access by 2030 (with grid solutions identified as the appropriate solution for 55 per cent of the unelectrified population and mini-grids for 4 per cent).

2

Objectives and scope

2.1. BII's activities in standalone solar markets in Kenya and West Africa

The markets examined in this evaluation are defined along three dimensions:[11]

- **Product:** small-scale standalone solar systems, including solar lanterns, multi-light systems, and solar home systems.
- **Geography:** Kenya (for Sun King and M-KOPA), and Côte d'Ivoire, Ghana and Senegal (for PEG). For the purposes of this evaluation, the latter three countries are aggregated into a single 'West African' market. However, the catalysing market effects associated with BII's investments may also be observed in neighbouring markets across sub-Saharan Africa.
- **Users:** households that purchase and use standalone solar systems as electricity sources.

Between 2015 and 2023, BII invested $130 million in standalone solar investees operating in these markets, through a mix of direct and sector-specific fund investments.[12] The first investment, in 2015, capitalised the sector's first equity fund, EAVF. This was followed by direct investments in M-KOPA (six commitments between 2017 and 2023), PEG (one commitment in 2019), and Sun King (three commitments between 2019 and 2023). BII also made a sizeable commitment to EARF in 2021.

11 BII (2025), Driving market-level changes in impact investing

12 The investments in standalone solar providers and sector specific funds up to 2023 were made entirely through Catalyst, with the exception of the equity investment in M-KOPA. In the period considered for this evaluation (2015-2023), BII also made a wide range of investments in larger power and energy sector companies through its main Growth portfolio, and financed SunCulture, a solar water pump provider, through its Kinetic portfolio.

Energy Access Ventures	**2015:** $20.5m as a Limited Partner (LP) in EAVF first close (€55m), followed by $5.9m top-up in second close (€75m) – both **equity**
M-KOPA	**2017:** $18.6m **equity** (through Growth portfolio), with follow-on **equity** investments of $3m (2018) and $7.5m (2021) **2017:** **local currency loans** of $18m denominated in Kenyan shillings (KES) and $2m denominated in Ugandan shillings (UGX) **2023:** $5m **local currency (KES) loan**
PEG	**2019:** $15.5m **local currency loan** denominated in Ghanaian cedis (GHS) and West African CFA francs (XOF)
sun king.	**2020:** $15.75m **local currency loan** (US dollar-denominated loan synthetically linked with KES, Tanzanian shillings (TSh) and UGX) **2021:** The 2020 loan was refinanced and increased by $4.25m as a KES-denominated **local currency working capital loan** **2023:** $20m exposure reduced to $10m to enable $20m **local currency (KES) securitised loan** **2025:** $20m **local currency securitised loan** refinanced to $10m (total remaining exposure $20m)
SIMA	**2021**: $15m **debt** in EARF (total fund $87.6m), which provides junior debt in USD and local currencies to standalone solar companies

Table 1: BII's investments in standalone solar markets
Source: Greencroft Economics based on BII investment documentation.

BII also provided non-financial support in the form of technical assistance (TA) and support to wider market-shaping initiatives. BII supported TA projects for nine EAVF investees; provided M-KOPA with TA on credit-scoring and e-waste management; developed a geospatial planning tool to support PEG's entry into West Africa and provided it with credit scoring support; and helped Sun King develop a gender action plan. BII has also supported sector-wide initiatives, most notably:

- **PAYGo PERFORM:** A standardised set of financial and operational reporting metrics designed to improve transparency, comparability, and investment for pay-as-you-go solar.[13] The metrics were designed to help current and potential financiers understand the financial performance of PAYGo companies, and enable companies to benchmark key performance indicators against industry norms.
- **GOGLA's Customer Protection Principles:** A framework of principles that guides how standalone solar companies should treat their customers, including through responsible pricing, transparency, good customer service and high-quality products. The framework was intended to ensure that signatory companies provide good quality service for standalone solar system technology and for repayment collection processes for the PAYGo business model.
- **A series of industry publications**, including a 2018 paper co-authored with CGAP (the Consultative Group to Assist the Poor) on the future of PAYGo,[14] and the inaugural 60 Decibels *Why Off Grid Energy Matters* report, which BII funded in 2020.[15] These publications sought to improve the information base available to companies, investors, and programme managers.

2.2. Evaluation approach and defining impact pathways

2.2.1. Methodology

The first step of this evaluation was to develop a theory of change (Figure 1). This theory was based on: (1) the evolution of BII's strategy for the sector as reflected in various internal documents; (2) investment cases for the Catalyst and Growth investments into standalone solar companies; and (3) wider BII literature on how Catalyst seeks to deliver impact through both the direct effects of its investees and through catalysing market effects (summarised in Section 1).

13 Pay-as-you-go business models allow users to pay over time, typically on a lease to own, with the payment term ranging from six months to several years
14 CGAP and CDC (2018), Taming the Strange Beasts: Servicing and the Future of PAYGo
15 60 Decibels (2020), Why Off-Grid Energy Matters 2020

Four evaluation questions were then developed based on an initial analysis of key market trends and the outcomes that BII's investments were expected to influence:

1. How have the relevant standalone solar product markets changed since BII's Catalyst investments?
2. How has the capital market for standalone solar ventures operating in the relevant product markets changed since BII's Catalyst investments?
3. How have BII investments/activities contributed to the product and capital market changes observed?
4. Have the product and capital markets changed in a way that supports impact for target stakeholders and the environment?

Finally, three impact pathways were defined to trace BII's contributions to these changes. The three impact pathways are:

- **Impact Pathway 1: direct effects of the BII investees.** The hypothesis is that BII's investees have scaled up successfully, resulting in a substantial increase in the number of households reached with standalone solar technologies, and that this was enabled by BII's investments. This is explored in Section 4.
- **Impact Pathway 2: investee demonstration effects.** The hypothesis is that BII's investees were among the early movers in their countries of operations, and that they have demonstrated success, elements of which other companies have seen and replicated. This is explored in Section 5.1.
- **Impact Pathway 3: financing demonstration effects.** The hypothesis is that the way in which BII invested demonstrated to others the viability and importance of financing mechanisms that enable investees to succeed, such that they have also adopted these mechanisms. Two sub-pathways are explored: 3a looks at local currency lending (Section 5.2), while 3b focuses on securitised lending facilities (Section 5.3).

The assessment of BII's contribution to the changes in the sector through these impact pathways was based on an analysis of industry data and stakeholder interviews. The main sources were GOGLA's sales and investment data, alongside data reported by BII investees. A series of phased structured interviews were also undertaken with BII's investment deal teams (Phase 1), with BII's investees (Phase 2), and with 16 external stakeholders, including representatives of other financiers and companies, as well as sector experts (Phase 3).[16]

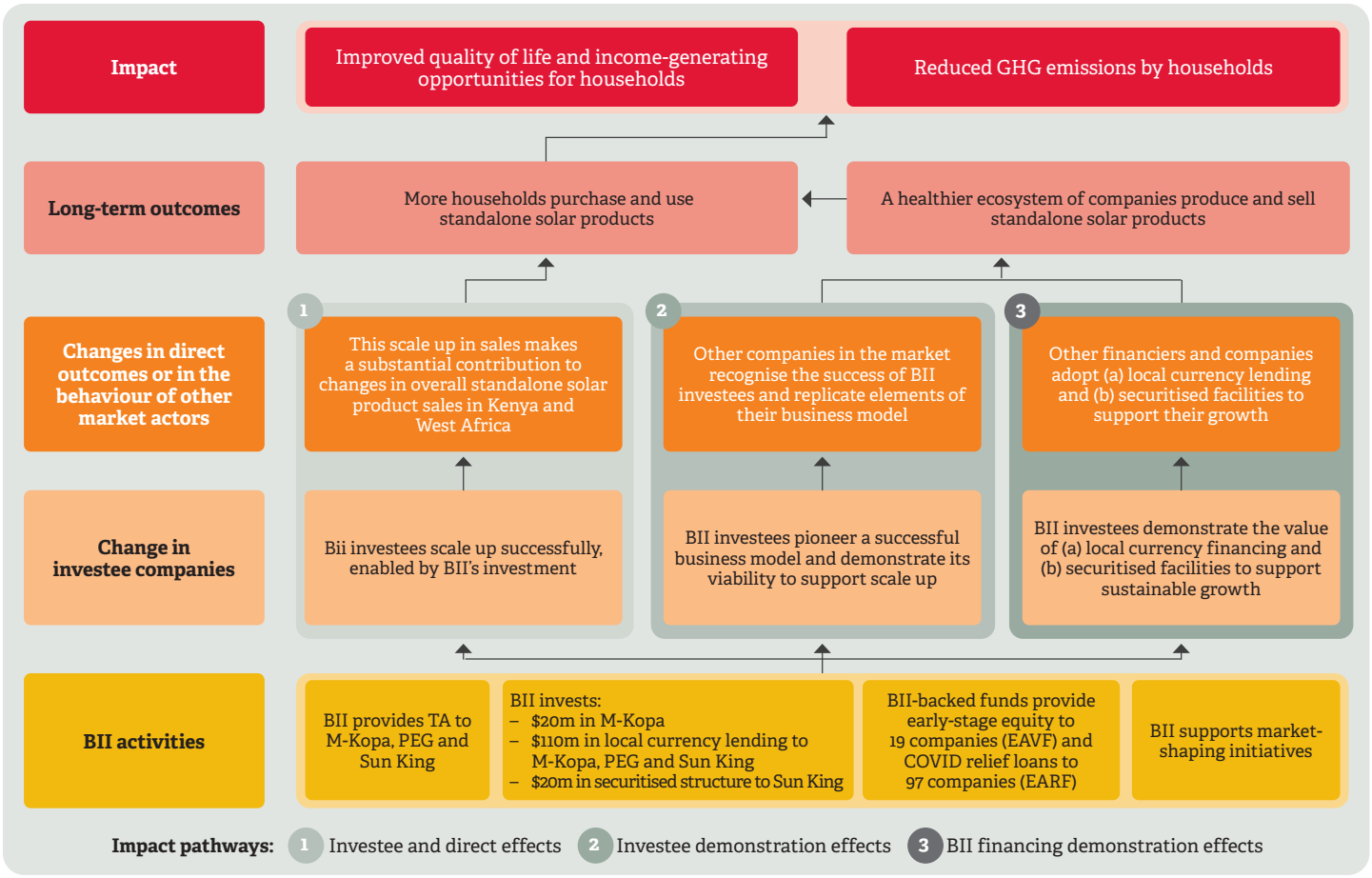


Figure 2: BII Catalyst Portfolio in standalone solar theory of change
Source: Greencroft Economics

16 Phase 3 interviewees were selected as a limited sample of industry experts and representatives of standalone solar companies and their financiers to test hypotheses within each impact pathway. They included representatives of the following organisations, although they did not speak on their organisations' behalf: GET.Invest, GOGLA, Lighting Africa, Lighting Global, FMO, IFC, AFC, TCX, SunFunder, Cygnum Capital, Acumen, Standard Bank, Solar Panda, Baobab+, Yellow, and Azuri Technologies.

2.2.2. Presentation of results

Each impact pathway is assessed in three steps:

1. **Step 1:** Changes within BII's investee companies.
2. **Step 2:** Changes in direct outcomes[17] or in the behaviour of other market actors.
3. **Step 3:** Assessment of BII's contribution to these changes.

For each step, the same four-point scale is used:

- **Substantial:** there has been substantial change within BII's investee companies (step 1); and/or substantial change in direct outcomes or the behaviour of other market actors (step 2); and/or BII and its investees have made a substantial contribution to the observed changes (step 3).
- **Moderate:** the change within the BII investees has only been modest (step 1); some changes in direct outcomes or behaviour of other actors can be observed but they are limited (step 2); BII and its investees have played an important, but not lead, role in contributing to the observed changes (step 3).
- **Limited:** there has been little or no change within BII's investees (step 1); and/or changes in direct outcomes or behaviour of other actors are very small or not evident (step 2); and/or BII and its investees have not played a significant role in contributing to the changes observed (step 3).
- **Too early to tell:** insufficient time has elapsed for sufficient evidence to be available to make an informed judgement (all steps).

The different steps place different weight on the types of evidence collected.

- Step 1 is based primarily on empirical data relating to each of BII's investees, complemented by interviews with the investees.
- Step 2 combines empirical data and qualitative evidence from key informant interviews. The relative weight given to each type of evidence depends on the impact pathway in question. For direct effects, it draws mainly on empirical data. For pathways relating to the company or investor behaviour not captured in market statistics, interview evidence plays a greater role, especially when the interviewees corroborated one another's perspectives, and provide clear examples to support their statements
- Step 3 relies primarily on interview evidence. An informed judgement is made based on both the number of interviewees who assessed BII's contribution and the weight assigned to their perspectives. For example, when considering whether BII has contributed to changes within its investees, greater weight is given to evidence from those investees. When assessing demonstration effects, greater weight is given to evidence from other companies, or from investors that can provide specific examples of demonstration effects observed in other companies.

17 Such as changes in Sun King's, PEG's and M-KOPA's customer reach, or in the pricing or quality of their services

3

Evolution of standalone solar markets in Kenya and West Africa

3.1. Product market trends

3.1.1. Global trends

Following rapid growth in sales of standalone solar home systems from the first year of recorded data in 2010 to just under 8 million units in 2016 (Figure 3), global sales recorded by GOGLA plateaued, averaging 8.2 million units per year between 2017 and 2024. Sales dipped when the COVID-19 pandemic struck in 2020, rebounded in 2022 and returned to their previous trend in 2023 and 2024.

The global share of PAYGo sales rose from 22 per cent in 2018, when the data were first disaggregated between PAYGo and cash over-the-counter sales, to 38 per cent in 2023, remaining at that level in 2024 (Figure 3). PAYGo typically enables customers to spread payments over approximately 18 months.

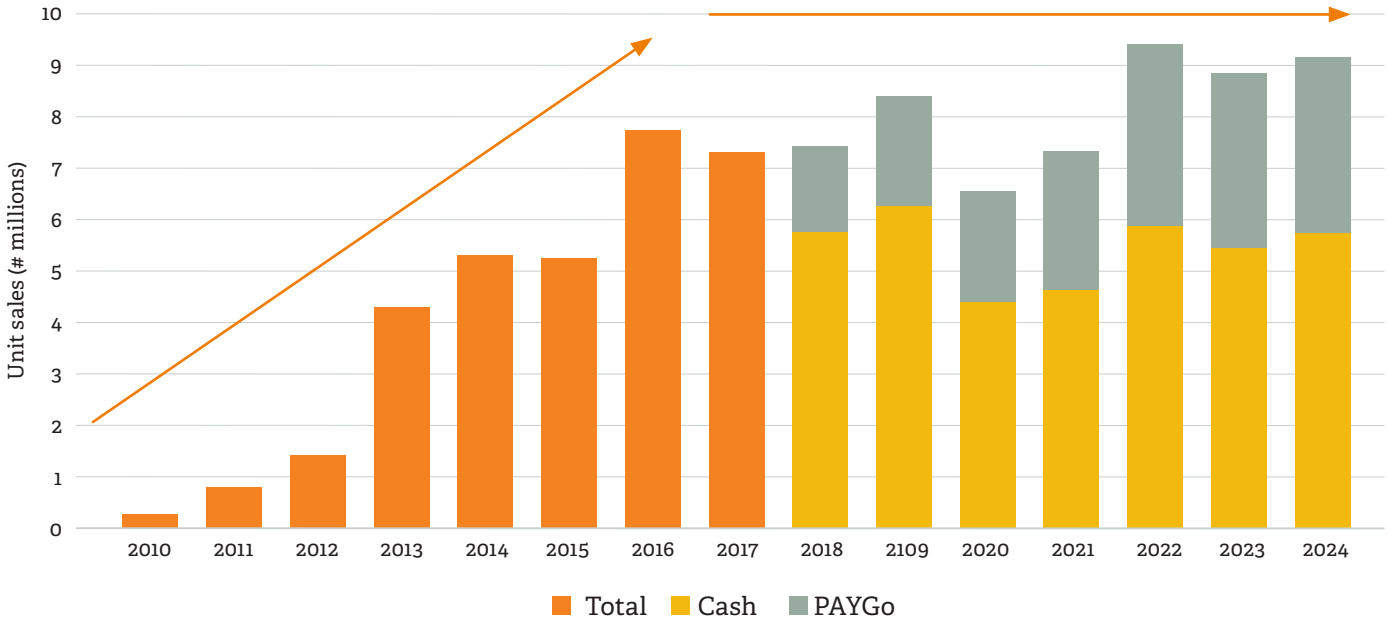


Figure 3: Global unit sales of solar energy kits (solar lanterns and solar home systems)
Source: Greencroft Economics based on GOGLA sales data

Prices of standalone solar products have not shown a consistent trend. There is no comprehensive dataset on product prices. However, it is generally recognised that prices fell between 2012 and 2016 prices due to lower costs and improved efficiency. The manufacturing costs of off-grid solar appliances and components is estimated to have fallen by 43 per cent over this period.[18] Since then, there have been upward pressures on costs and prices. In 2023, local currency prices increased significantly due to currency devaluations and inflation in several large standalone solar markets, including Nigeria, Malawi and Zambia, although US dollar-denominated prices decreased slightly.[19]

3.1.2. Product market trends in Kenya

In Kenya, high sales volumes and a high penetration of the PAYGo business model have been maintained. Sales first approached two million units in 2019 and, after a dip in 2021, recovered to a similar level in 2022, before reaching 2.3 million sales in 2024 (Figure 4). Kenya accounts for around 25 per cent of global sales of solar energy kits, and is the largest market in sub-Saharan Africa.[20] Since 2019, PAYGo has accounted for around 50 per cent of sales, and substantially more in some years (Figure 5).

When BII made its first direct investment in a Kenyan standalone solar company – M-KOPA in 2017 – several significant local and international companies were already operating in the market.[21] In addition to M-KOPA and Sun King, these included d.light, Azuri, Mobisol, Bboxx and Brighterlite. Solar Panda was another significant entrant in 2017 . These companies tended to be vertically integrated, selling their own branded products, backed by warranties, and have helped drive the growth in PAYGo financing noted above.

Since 2019, the Kenyan market has experienced consolidation and several exits, as some companies encountered financial difficulties. High-profile examples include the "cautionary tale" of Mobisol, which was acquired by ENGIE Energy Access (ENGIE) in 2019;[22] Solar Panda's acquisition of Azuri's receivables in 2022,[23] and Bboxx's going into administration and restructuring in May 2025.[24,25] Many smaller companies, such as Barefoot Power and SunTransfer, ceased operations around 2020, while others, such as Pawame and Mwezi, were acquired by Ignite, which also acquired ENGIE in 2025. Meanwhile, since 2017, M-KOPA has gradually shifted away from sales of new solar home systems towards other technologies such as mobile phones and electric vehicles. This trend towards consolidation in the Kenyan market is consistent with the global picture. The 2024 Market Trends report produced by the Energy Sector Management Assistance Program (ESMAP) and World Bank identified a "trend towards consolidation" driven by acquisitions by larger players and the "severe challenges" faced by smaller companies.

By the mid-2020s, competitive interaction in Kenya centred on a few vertically integrated players. The most notable were Sun King, d.light, Ignite, and Solar Panda, with smaller distributors remained active by focusing on underserved geographies or through forming partnerships.

No data on Kenya-specific price trends is available.

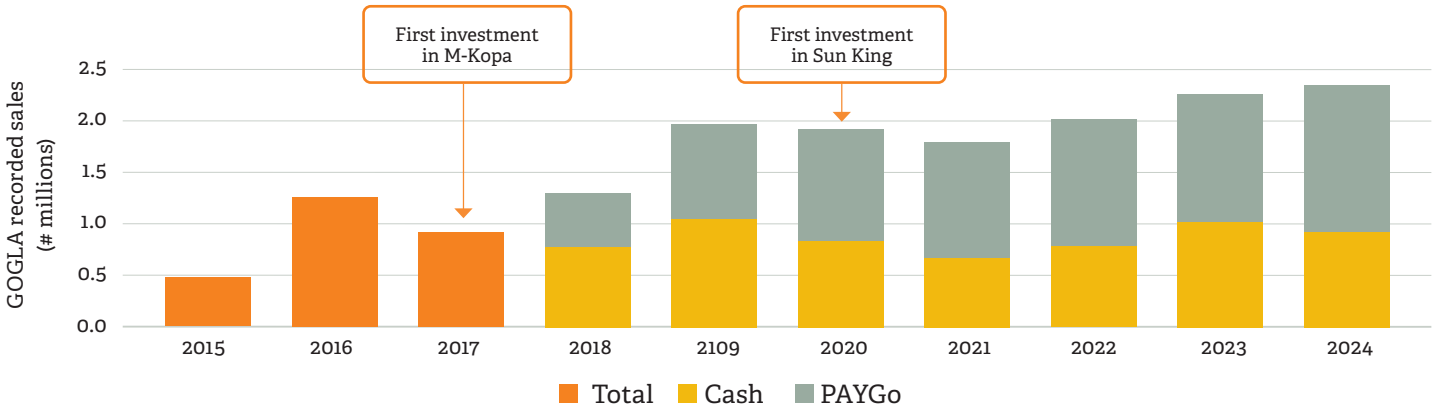


Figure 4: Product sales trends in Kenya
Source: Greencroft Economics based on GOGLA sales data

18 Lighting Global (2018), The 2018 Global Off-Grid Solar Market Trends Report

19 ESMAP (2024), Off-grid Solar Market Trends Report 2024

20 Based on GOGLA half-yearly sales data.

21 There are no systematic publicly available data on the number of companies operating in different geographic markets, or on their market shares. This description of product market trends in Kenya, along with the equivalent description for West Africa, has been pieced together from press reports, GOGLA's market trend reports, and the authors' industry intelligence.

22 Financial Times article (3 May 2019), Mobisol: a cautionary tale for impact investors

23 Solar Panda press release (19 January 2022), Solar Panda and Azuri Technologies announce Servicing Agreement

24 Bboxx press release (20 May 2025), Bboxx lays new foundations for future growth

25 PKF press release (22 May 2025), PKF Littlejohn Advisory team appointed Administrators of Bboxx Limited

3.1.3. Product market trends in West Africa

In West Africa, where BII's investee PEG operated following BII's investment in 2019, sales have declined since 2020. Combined annual sales for Senegal, Ghana and Côte d'Ivoire hovered around 150,000 units between 2017 and 2020, but fell to 46,000 in 2024 (Figure 5). However, this figure excludes Ghana, for which no sales were reported in 2024, potentially due to confidentiality constraints.

While sales trends have differed from those in Kenya, the pattern of market entry followed by consolidation has been similar. Alongside PEG, early pioneers included Oolu Solar (a Senegal-based start-up) and Baobab+ (a French-Africa venture operating in Senegal and Côte 'Ivoire). Between 2017 and 2019/20, additional firms entered the West African market, attracted by its apparent lower level of saturation compared with Kenya and other East African markets. Entrants included Off Grid Electric (later Zola Electric), Lumos, and ENGIE. Since 2022, the market appears to have consolidated further through Bboxx's acquisition of PEG in 2022,[26] Ignite Power's acquisitions of Oolu Solar in 2024 and ENGIE in 2025, and Biolite's acquisition of a majority stake in Baobab+ in May 2025.[27]

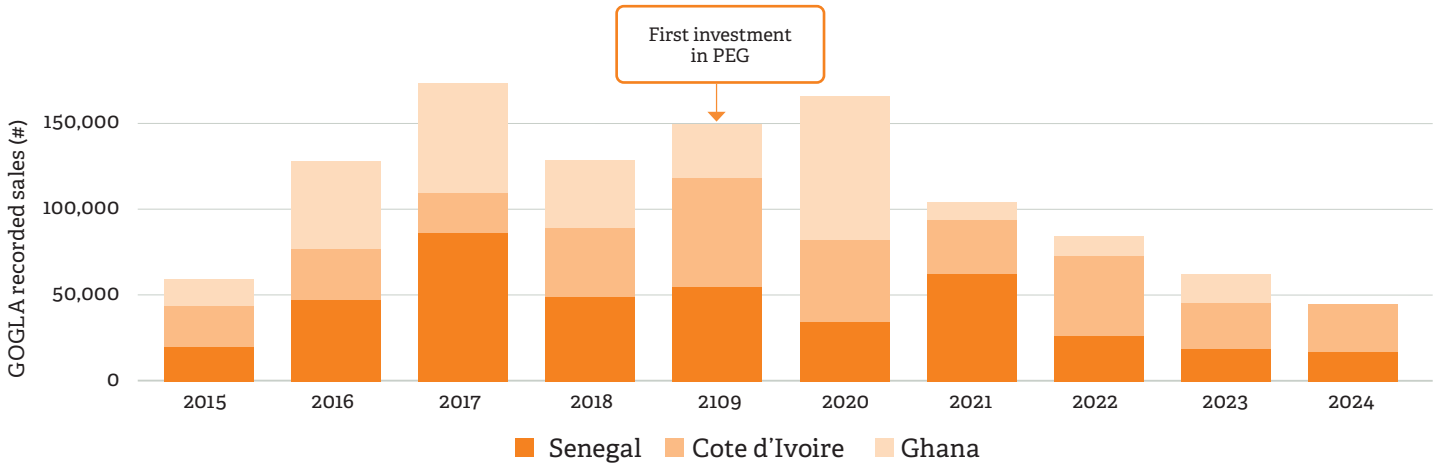


Figure 5: Product sales trends in PEG's West African markets
Source: Greencroft Economics based on GOGLA sales data
Note: Missing data for countries for the second half of 2023, which has been proxied by repeating the sales volumes in the first half of 2023

3.2. Financing trends

Globally, investment levels have mirrored unit sales trends – levelling off since 2016 at around $350 million per year. Investment levels were stable between 2016 and 2020, with slightly higher amounts in both 2021 and 2023 (Figure 6). There was a large spike in investment in 2022, driven by a handful of deals, including the $330 million equity investment in Sun King.[28] In 2024, investment fell to its lowest level since 2015. Investment data for the specific geographic markets examined are not available.

While there was a wave of interest by commercial investors around 2018, development finance institutions (DFIs) and concessional financers continue to dominate investments. Up to 2016, the largest financiers were impact investors and donors, with profit-oriented capital a minority.[29] The period between 2018 to 2020 saw the first corporate interest in the sector with the acquisition of Mobisol by ENGIE,[30,31] accompanied by increasing deployment of specialised sector debt funds such as responsAbility, SIMA, SunFunder. Nonetheless, DFIs have continued to play a crucial role as the main financiers in the sector,[32] led by the likes of BII, the Dutch entrepreneurial development bank (FMO), Norfund, and the US International Development Finance Corporation (DFC).

Commercial finance is highly concentrated within a few large standalone solar companies. Commercial banks with a regional presence, such as Citi and Standard Bank, have increased their exposure to the sector in recent years, but their activity remains concentrated in the larger companies, particularly Sun King.

26 Bboxx press release (6 September 2022), Bboxx consolidates its market leading position by acquiring solar energy frontrunner PEG Africa
27 Baobab+ press release (6 May 2025), Baobab Group Sells Majority Stake in Baobab+ to BioLite
28 Sun King press release (15 December 2022), Sun King Expands Its Series D to $330M with Additional Investment of $70M Led by LeapFrog Investments
29 Lighting Global (2016), Off-Grid Market Trends Report 2016
30 Lighting Global (2018), Off-Grid Market Trends Report 2018
31 Lighting Global (2020), Off-Grid Market Trends Report 2020
32 Lighting Global (2022), Off-Grid Market Trends Report 2022

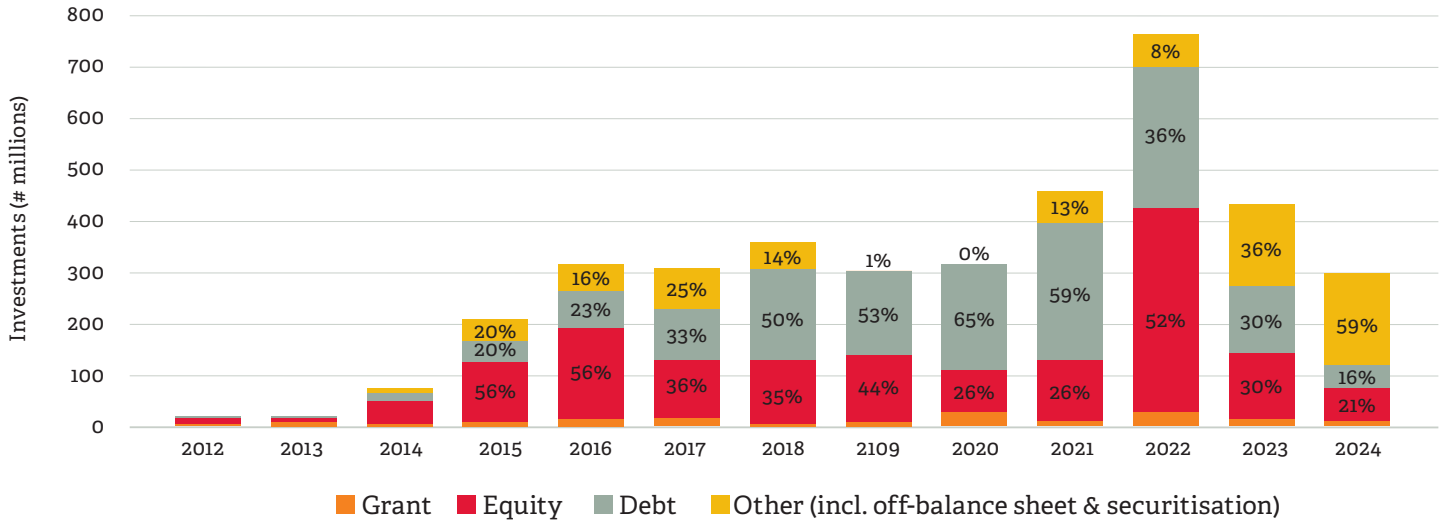


Figure 6: Global investment levels have mirrored sales volumes, levelling off since 2016
Source: Greencroft Economics based on GOGLA sales data

Before BII's first local currency loan to M-KOPA in 2017, there was very limited local currency lending. Local currency lending lets standalone solar companies match the currency in which they earn revenue with the currency in which they repay debt, thereby reducing the impact of local currency depreciation on their financial health. As shown in Figure 6, lending increased between 2014 and 2018. Initially, this debt was almost exclusively denominated in hard currency, with the first significant local currency loans to standalone solar companies made in 2017.

Local currency lending has increased since BII issued its first local currency loan in 2017. Figure 7 aggregates debt and other finance, with the latter comprising off-balance sheet financing[33] and securitisation facilities. It shows a higher share of local currency financing between 2016 and 2018, and between 2020 and 2023.

Access to local currency lending remains concentrated among a few large companies. As noted in ESMAP's biennial Market Trends Report, while "*large global players such as Sun King and d.light have access to off-balance-sheet and local currency financing, smaller, regional and domestic companies report not being able to access this kind of financing at all*".[34] DFIs have historically been the main source of local currency lending, with a few transactions led by local banks; for example, in 2018, just one out of 12 local currency transactions was led by a local bank.[35] While it is difficult to assess the extent of local bank involvement in all subsequent local currency transactions, interviews conducted for this study suggest that local banks remain reluctant to lend in local currency, with local currency transactions continuing to rely on significant financing from DFIs and IFIs. Currency hedging instruments have also become more in widely available, with development partners providing subsidies to reduce their cost.[36,37]

33 Off-balance sheet financing involves recording certain assets or liabilities in a separate legal structure so they do not appear on a company's balance sheet. This can help keep the company's debt-to-equity and other leverage ratios lower, while enabling it to access debt specifically secured against the assets held in the off-balance sheet structure.

34 ESMAP (2024), Off-Grid Market Trends Report 2024

35 GOGLA (2023), Investing in the off-grid solar sector: What you need to know

36 The Currency Exchange Fund (TCX) press release (27 December 2022): European Commission Boosts Support for TCX with EUR 320 Million

37 TCX, EU Market Creation Facility

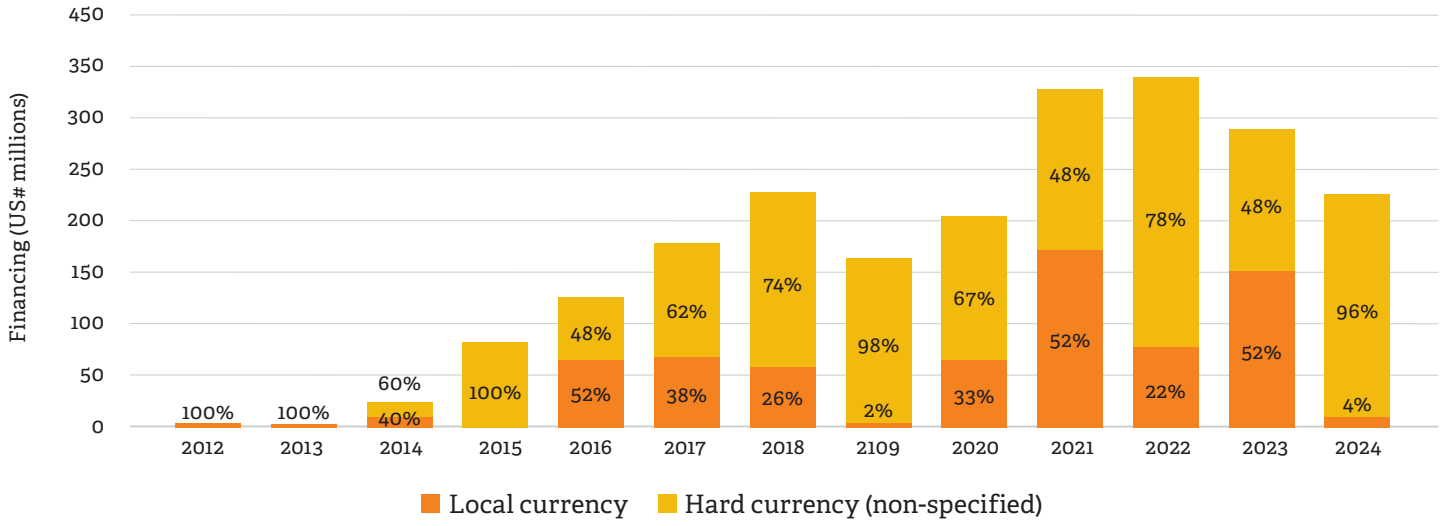


Figure 7: Local currency finance trends – debt and other (including off-balance sheet and securitisation)
Source: Greencroft Economics, based on GOGLA investment data, last accessed 10 April 2026

Securitised lending has increased in recent years, dominated by large issuances from d.light and Sun King. Securitisation is the practice of pooling customer repayment contracts and using these as collateral to raise capital from investors, with repayment tied to the cashflows from those contracts, rather than the company's balance sheet. The first wave of these lending structures emerged between 2015 and 2019, and was typically small scale, including facilities established by Mobisol with responsAbility, and Bboxx with Oikocredit.[38] Since 2020 the volume of securitised lending has increased led by large transactions involving two companies:

- **d.light**, in partnership[with African Frontier Capital (AFC) launched the first large-scale securitisation, the $130 million Brighter Life Kenya 1 (BLK1) facility, in 2021. The initial BLK1 facility repaid its senior lenders in full[39] and was followed, from 2022 onwards, by a series of d.light's "Brighter Life by d.light" facilities.[40,41]
- **Sun King**'s first securitisation facility, a $130 million facility with Citi in 42 was followed by a $156 million securitised facility in Kenya, led by Citi, in May 2025.[43]

Some financiers are exploring the use of warehousing facilities to make securitisation more accessible by aggregating receivables from multiple, smaller originators. The logistics and legal costs associated with setting up a securitised lending facility are significant, so the underlying receivables portfolio needs to be large – likely more than $5 million.[44] Such facilities could allow securitisation to have a wider impact beyond large companies such as d.light and Sun King, but no such arrangements have yet been finalised.

38 Mobisol to introduce new financing model to Tanzania's off-grid sector - pv magazine Global
39 AFC press release (27 February 2024), AFC and d.light achieve off-grid solar industry milestone with full repayment of senior debt for $USD110M securitization facility
40 AFC press release (14 June 2022), d.light and SFC announce industry-leading USD 238 million multi-currency receivable financing facility
41 According to a 2 July 2025 Sun-Connect press release (no longer available online), these facilities had reached a combined receivables purchasing value $842 million.
42 Sun King press release (2023), Link
43 Citi Group press release (28 July 2025), $156M Sun King Securitization to Deliver Solar for Over a Million Kenyans
44 Power Africa (2023), Demystifying Securitisation for Off-Grid Companies (no longer available online).

4

Direct effects

Impact pathway 1: Direct effects	
Hypothesis: BII's investees have substantially scaled up the number of households served by standalone solar systems, enabled by BII's investment.	
Change in BII investee companies	
Substantial change	Sun King substantially scaled up sales of standalone solar products, more than doubling its sales volume in Kenya since 2019. While M-KOPA and PEG experienced less significant or sustained growth, the scale of Sun King's expansion is large enough to be considered a substantial change.
Change in direct outcomes	
Substantial change	Sun King's sales growth made a substantial contribution to the increase in overall sales in the Kenyan market. It has accounted for more than 40 per cent of sales in Kenya since 2019, and more than doubled its own sales between 2019 and 2024, a growth rate more than five times that of the Kenyan market as a whole, which grew by just 20 per cent over the same period.
BII's contribution to these changes	
Substantial change	BII's investment was a key enabler of Sun King's scale up BII's first investment in 2019 was of a significant volume and offered terms that would not otherwise have been available. For example, the participating DFIs – BII, FMO and Norfund – bore the local currency depreciation risk. BII has subsequently remained a key partner and lender to Sun King. Interview evidence corroborates the importance of BII's role.

This impact pathway explores the direct effects of BII's investees. While their performance has been mixed, the most successful BII investee, Sun King, has substantially increased its sales of standalone solar products on a sufficient scale to constitute a substantial direct effect in Kenya. BII played a leading role in enabling Sun King investee to achieve this impact.

4.1. Change in Sun King, M-KOPA, and PEG

Sun King is an industry leader in the sale of standalone solar systems. Worldwide it has provided more than 23 million households, representing more than 100 million people, with standalone solar power.[45,46] It has more than doubled its sales in Kenya since BII's first investment in early 2020.

M-Kopa has scaled up to become one of Africa's fastest growing tech start-ups, but has shifted its strategy away from standalone solar since BII's first investment. During the standalone solar sector's early development, up to 2017, M-KOPA was a leading player with a Kenyan market share of more than 20 per cent. It also sold more than one million solar home systems in total, over 80 per cent[47] of which were in Kenya.[48] Following BII's first investment in 2017, however, M-KOPA phased out the deployment of new standalone solar systems and shifted focus on other digital asset finance products using PAYGo technology, such as smartphones and e-mobility. It has since become Africa's largest PAYGo fintech company with revenues reaching $400 million.[49]

PEG was a leading entrant in several West African countries but was unable to sustain this growth. It was the first high-profile company to enter several West African countries at scale, selling more than 90,000 solar energy kits in total.[50] However, sales peaked in 2019 (the year of BII's investment) and have subsequently declined until PEG was acquired by Bboxx in 2022.[51] Bboxx has since undergone a major restructuring.[52] While there is no public information on plans for future expansion, it is unlikely that PEG's portfolio will grow beyond the scale it had reached by 2020.

Both Sun King and M-KOPA have raised significant amounts of capital since the initial investment from BII. However, M-KOPA has used this capital to support its strategic shift away from standalone solar. As shown in Figure 8, before their first transaction with BII, M-KOPA and Sun King had only raised around $50 million and $80 million, respectively. Each has since gone on to raise more than $500 million.

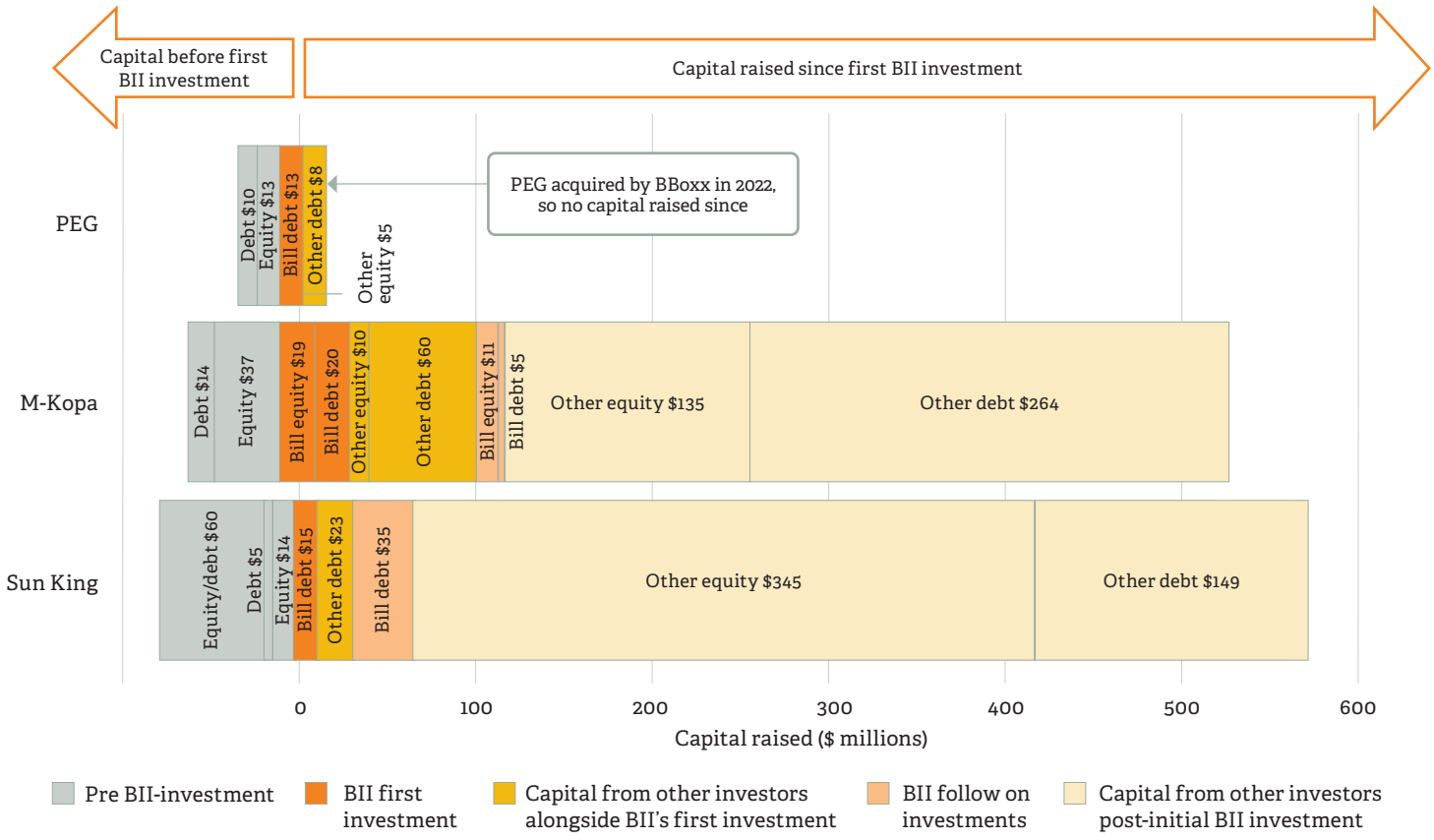


Figure 8: Two of BII's three direct investees have raised significant further capital following BII's first investment
Source: Greencroft Economics, based on desktop research

45 Sun King: Powering Access to Brighter Lives Through Off-Grid Solar
46 Sima: Sun King's Solar Empowerment: Impactful Collaboration with SIMA Funds
47 The precise breakdown of sales by country and by year was not available for this analysis.
48 Greencroft Economics analysis of industry sales data and M-KOPA historic sales in Kenya.
49 Tech In Africa, M-KOPA Nears $400M Annual Revenue as Africa's Largest Pay-As-You-Go Fintech Scales Across Sub-Saharan Markets
50 PEG (2021), PEG's Impact
51 Bboxx press release (6 September 2022), Bboxx consolidates its market leading position by acquiring solar energy frontrunner PEG Africa
52 Bboxx press release (20 May 2025), Bboxx lays new foundations for future growth

There is insufficient publicly available evidence to judge the success of the two indirect sector funds. The sales growth of the underlying portfolio of investments within these two funds has not been explored in detail. However, EAVF invested in 15 companies,[53] and sold its stake in three: d.light, through a sale to Shell New Energies in 2020; PAYGo Energy, through a sale to Sun King in 2024; and Candi Solar through a partial exit. Meanwhile, EARF has issued loans to 97 companies, but the sustainability of its results remains uncertain, as many of the loans are still outstanding.

Taken as a whole, BII's investees have achieved a substantial scale-up in the deployment of standalone solar systems. While the portfolio has delivered mixed results, this is consistent with the high-risk nature of the companies and markets targeted by Catalyst. Sun King has achieved very significant sales volumes, whereas PEG and M-KOPA have largely phased out deployment of new standalone solar systems since BII's first investment in each company.

4.2. Change in direct outcomes

Sun King's growth has established it as a well-recognised industry leader in Kenya, reaching a substantial number of households. It accounted for more than 40 per cent of sales in Kenya between 2019 and 2024. Its 100 per cent increase in sales over this period has outstripped Kenya's growth five-fold, with total standalone solar sales growth of 20 per cent in Kenya over the same period. M-KOPA and PEG were both market leaders at one point, and made significant contributions to the changes observed in their respective markets of Kenya and West Africa at that time. However, they are no longer active in standalone solar, so their contribution to sustained direct effects is more limited.

4.3. BII's contribution to these changes

BII's finance to Sun King has been an important part of its scale-up and success in delivering direct effects. As shown in Figure 8, BII first invested at a point in time where Sun King had raised only around $80 million from external investors. Interviews confirm that BII's lending was a major contributor to the company's subsequent growth and ability to raise capital. These interviews also confirmed that the company-specific TA provided by BII to Sun King, support for the development of a gender action plan, was also valued, but was not a key driver of company growth.

BII was also an important investor in both M-KOPA and in PEG, but its investments have not contributed to sustained direct effects in their respective markets. BII remains an equity investor in M-KOPA, and may be an important contributor to its broader success beyond standalone solar, which falls outside of the scope of this evaluation.

BII also played a significant role in both indirect sector funds. With EAVF, BII was one of the major contributors to the first close, providing around 30 per cent of the fund's total $90 million (€75 million) in capital. In EARF, BII was among the first DFIs to commit capital, and contributed just under 20 per cent of the $87.5 million fund. BII was also able to provide a guarantee tranche through the Kinetic facility to reduce risk.[54]

53 E3 Capital, Portfolio

54 BII's Kinetic facility deploys catalytic capital in different ways to help early-stage companies test and scale innovations, and reduce capital risk to mobilise private investment in emerging markets.

5

Catalysing market effects

This section focuses on the catalysing market effects through BII's investments in standalone solar markets. It explores the demonstration effects of BII's three investees (Sun King, PEG, and M-KOPA), as well as those associated with specific financing mechanisms, namely local currency lending and securitised facilities.

This study did assess the potential catalysing market effects of market-shaping initiatives through a dedicated impact pathway. Interviewees reported that this support (see Section 2.1) was broadly welcomed by industry stakeholders. For example, virtually all companies have signed up to the GOGLA Customer Protection Code, and many investors view this as a core part of their due diligence, indicating that it may have influenced how the market has developed. Likewise, the PAYGo PERFORM initiative is perceived to have promoted a common understanding around the key performance indicators that best reflect company performance. However, the catalysing market effects of these initiatives on the overall growth of the product and/or capital markets were considered less material than those arising through the other pathways explored in this report, and were therefore deprioritised.

5.1. Investee demonstration effects

Impact pathway 2: Investee demonstration effects	
Hypothesis: BII's investees have been among the early movers in their countries of operations, and they have demonstrated success, elements of which other companies have seen and replicated.	
Change in BII investee companies	
Moderate change	Sun King demonstrated a successful business model (including scaling through a mix of PAYGo and cash sales and hardware product development). Other direct investees did not achieve sustained success within the markets of focus.
Change in other market actors' behaviour	
Moderate change	Other companies view Sun King as a leader in hardware development, commercial performance and scaling, and some have developed similar product lines. In contrast, some view M-KOPA's shift to other products and PEG's acquisition by Bboxx and subsequent restructuring as potential signals that standalone solar may not always have a path to commercial sustainability.
BII's contribution to these changes	
Substantial change	BII supported Sun King in demonstrating a successful business model at scale as a lead contributor to the company's growth (as per Impact Pathway 1).

This impact pathway explores catalysing market effects arising from demonstration effects of BII's investees on other companies. BII's investees have had some success in demonstrating viable business models, which have influenced some other companies in the sector. BII has played a supporting role in enabling their investees to generate these demonstration effects.

Sun King is the strongest contributor to this impact pathway, demonstrating a successful approach to scaling and hardware product development. Financiers and experts view Sun King as a leader in commercial performance and scaling through a mix of cash and PAYGo sales, while other companies regard it as a leader in hardware development. Moreover, stakeholder interviews noted specific examples of peer companies developing product lines similar to Sun King after observing its product offering.

Sun King broadly a great success [...], and the new bigger products developed by Sun King are very attractive and other manufacturers are copying them.

Key informant interview – standalone solar company

Sun King was the first to market with a radio and a light for roadside stalls; we heard about it and are about to launch a similar product.

Key informant interview – standalone solar company

All stakeholders view M-KOPA as leading the demonstration of the technical feasibility of PAYGo, but this pre-dates BII's investment. M-KOPA was the first company to show that PAYGo – with mobile money, and remote activation and lock-out technology – could be applied to solar home systems. However, this technical demonstration effect was already well established before BII's investment in 2017. As noted in Section 4, M-KOPA has steadily moved away from solar home systems since 2017, and has therefore not contributed to any commercial demonstration effect in the sector.

PEG was considered the first major company to enter several West African countries, but is not perceived as a sustained success. There is little evidence that others have followed PEG's example in the markets in which PEG operated.[55] As noted in Section 3, overall sales volumes in these markets have declined rather than increased since BII's investment.

As for the two indirect investments, there is no evidence of demonstration effects. EAVF was the first sector-specific equity fund. Fund manager E3 Capital has since launched its second fund ("Low Carbon Ventures"), which does not include solar home system providers among its investees. As for EARF, it is too early to tell what impact it will have on the long-term sustainability of its borrowers, or what demonstration effects it may generate.

BII has contributed to enabling Sun King's demonstration effects. The demonstration effects provided by Sun King, in terms of successful commercial models and hardware, have been enabled by BII's investment in the company. As a leading financier of Sun King's growth, BII helped the company reach the scale needed for these effects to become visible across the market. Alongside FMO and Norfund, BII was a key contributor to Sun King's 2019 local currency facility. BII has also supported Sun King's subsequent substantial fundraising, although this have been led by Sun King's commercial bank partners, Citi and Stanbic.

55 While other companies have recently entered these West African markets – for example, Solar Panda announcing expansion into Senegal – we found no evidence to suggest this decision was linked to PEG's strategy or a PEG demonstration effect.

5.2. Local currency lending demonstration effects

Impact pathway 3a: Local currency demonstration effects	
Hypothesis: the way in which BII invested – through local currency lending – has demonstrated to others the viability and importance of this as a financing mechanism that enable investees to succeed, such that others have also adopted it.	
Change in BII investee companies	
Moderate change	Sun King successfully used local currency lending to sustainably scale its standalone solar offering.
Change in other market actors' behaviour	
Moderate change	Between 2012 and 2015 local currency finance was a rarity, accounting for just 9 per cent of debt and other debt-related finance (including securitisation and off-balance sheet facilities) recorded by GOGLA. Since a first spike in 2016 (rising to 52 per cent in that year), with BII's first local currency loan following in 2017, local currency finance has accounted for 32 per cent of debt and other debt-related finance, albeit with significant fluctuations from year to year. However, local currency lending remains concentrated among a small number of large companies. Further, most local currency debt, except lending to Sun King, appears to continue to depend on IFIs playing a key role, most likely at concessional rates, rather than being led by local banks.
BII's contribution to these changes	
Limited change	BII's transactions have provided a substantial share (40 per cent) of local currency financing up to 2024,[56] including financing to Sun King. Interviews suggest that most of the growth in demand and supply of local currency lending has occurred independently of BII, and has instead been driven by currency depreciation. BII's actions may, however, have supported this growth by demonstrating to DFIs and IFIs that excluding hedging costs from local currency loan pricing strategies make such loans more attractive to standalone solar companies. However, it remains unclear whether most standalone solar companies would use local currency loans without this implicit subsidy – that is, on a fully commercial basis – and whether commercial lenders would be willing to provide them.

This impact pathway explores catalysing market effects arising from BII's contribution to demonstrating the viability of local currency, with the aim of enabling other standalone solar companies outside of BII's portfolio to access local currency lending. It finds that BII's local currency lending has been somewhat successful in enabling its investees to expand their offering of standalone solar products. There has also been some increase in financiers' willingness to provide – and companies' demand for – local currency loans. However, BII's local currency lending appears to have been only a limited driver of this growth. Data on local currency investment flows are not available by different geographic market, and because this demonstration effect could be expected to easily transmit across different geographic markets, this analysis focuses on sector-wide trends in local currency lending.

Local currency trends and potential demonstration effects

As noted in Section 3.2, local currency lending was not widely available to standalone solar companies before BII's first local currency loan to M-KOPA in 2017. This reflected a range of barriers. For international lenders, offering local currency lending exposes them to foreign exchange risk: if the local currency depreciates, the value of loan repayments falls when converted back to hard currency such as dollars or euros. To compensate for this risk, international lenders typically either charge a higher interest rate or hedge the exposure using financial instruments, with the cost of the hedge reflected in the loan pricing. However, many standalone solar companies were unable or unwilling to absorb the additional costs associated with obtaining a local currency loan from international lenders. For local commercial banks, the main barriers are the expected rate of return and the lack of proof that standalone solar companies can reliably pay interest rates comparable to those charged to borrowers operating in other sectors.

56 As a share of local currency debt and local currency recorded as "other" by GOGLA, which includes securitisation and off-balance sheet facilities.

Since 2017, there has been evidence of increased demand for, and supply of, local currency loans across the sector. As set out in Section 3.2, local currency lending has increased since BII's first local currency loan to M-KOPA in 2017. It accounted for only around 2 per cent of lending between 2012 and 2016, but its share range increased to between 22 to 52 per cent in each year between 2017 and 2023, except 2019. BII has been one of the leaders of this trend, with local currency transactions in which BII participated accounting for around 40 per cent of all local currency lending. However, local currency lending across the sector, remains somewhat limited and highly concentrated among larger multinational standalone solar businesses.

BII's local currency lending– which, to date, has been provided without passing on hedging costs – has had a moderate impact in the success of its investees. Sun King considers local currency financing to be an important part of its financing mix, and has raised further rounds of local currency finance since its first local currency transaction with BII, with the commercial banks Standard Bank and Citi leading the transactions. BII has been one of several important contributors to Sun King's success in raising substantial volumes of local currency financing.

For PEG, local currency lending could in principle have been valuable in Ghana, where the currency has experienced significant depreciation. However, the associated wider macroeconomic challenges caused sales to fall significantly, which would have been a challenge regardless of the currency depreciation. In PEG's two other countries of operation, Senegal and Côte d'Ivoire, the local currency is the West African franc, which is pegged to the euro.

It was not possible to confirm the importance of BII's local currency lending to M-KOPA. However, as discussed above, the company's growth since 2017 has occurred almost entirely in markets other than standalone solar.

Exploring the drivers of increased supply of and demand for local currency lending

To explore the potential demonstration effects of BII's local currency lending, we considered four potential mechanisms. These mechanisms could operate through a combination of (1) other lenders and other standalone solar companies observing BII's local currency lending to its investees; and/or (2) BII's market-shaping and advocacy activities demonstrating the importance of local currency lending to other lenders and companies.

These four mechanisms operate on the supply-side (mechanisms 1–3) and on the demand side (mechanism 4):

- **Increasing local banks' willingness to provide local currency loans on a commercial basis.** BII's actions demonstrate to local banks that standalone solar companies represent reliable, commercially viable borrowers and provide local banks with their expected return on debt, at similar – or better – risk-reward profiles than available from lending to other sectors. BII identified this as the most desirable outcome, because local banks are not exposed to currency depreciation risk, as both their liabilities and assets are denominated in local currency.
- **Increasing international investors' willingness to provide local currency loans.** BII's actions demonstrate to international investors that the risk of local currency depreciation is lower than previously assumed, potentially making these investors are more willing to offer local currency loans at a lower risk-adjusted price.
- **Increasing international investors' willingness to provide local currency loans that do not fully reflect the cost of providing them.** BII's actions demonstrate across the sector both the importance of local currency lending in supporting firm performance and the inability of standalone solar companies to bear the full commercial cost of local currency lending, particularly where hedging costs are included. As a result, IFIs, DFIs and other impact investors may become more willing to offer local currency lending without passing on hedging costs, effectively providing a subsidy, to help companies deliver impact for end users.
- **Increasing demand for local currency loans among standalone solar companies:** BII's actions demonstrate to other standalone solar companies that the potential risks posed by local currency depreciation are greater than previously understood, increasing their willingness to bear the additional cost of local currency loans.

For the first mechanism, as noted in Section 3.2, there is limited evidence of increased lending by local banks. Local currency lending remains concentrated in a few companies and is often still heavily reliant on a prominent role of DFIs and IFIs. Local banks are not yet very active and generally do not lead transactions. This is because they typically have more attractive lending opportunities in other sectors, with lower transaction cost and better risk-adjusted returns, partly because standalone solar companies have not year demonstrated sustained profitability. This suggests that the demonstration effect on local banks regarding the viability of local currency lending has been limited.

For local banks it has been difficult to crowd them in – more about the companies being credit-worthy.

Key informant interview – investor

For the second mechanism, international investors have not significantly increased local currency lending on their standard terms in these markets. International financiers, including commercial lenders, DFIs and IFIs, were already able to offer local currency loans before BII's transactions. Although these products were available, they carried higher interest rates than hard currency loans, to cover foreign exchange depreciation risks or the cost of hedging. These financiers do not consider BII's actions to have demonstrated that their pricing overestimated the risk of local currency depreciation.

The ability to lend in local currency has not changed [because of BII's LCY transactions] – the mechanisms already existed and had pools of capital able to do this [...] It's more about pricing and demand.

Key informant interview – investor

For the third mechanism, there is evidence that the availability of local-currency instruments whose pricing does not fully reflect their risks and costs has increased since BII provided its first local-currency loan. Currency hedging instruments have become more widely available across countries, and have increasingly received public support to reduce their cost, such as EU funding for the TCX facility.[57] Further examples include Malawi, where the World Bank supported the national Ngwee Ngwee Ngwee Fund in offering hard currency loans to standalone solar companies to purchase equipment from overseas suppliers, while allowing them to repay in local currency at a fixed interest rate. Similar initiatives have been implemented elsewhere, and our interviews with financiers indicate that other DFIs, IFIs, and impact investors have become more willing to lend in local currency without (fully) passing expensive hedging costs on to borrowers. This suggests that the provision of local currency lending on concessional terms has increased, and that BII has contributed to this trend.

For the fourth mechanism, while company demand for local currency lending appears to have increased, interviewees suggested this has been driven primarily by companies observing the effects of currency depreciation. Several interviewees felt that standalone solar companies have become more aware of the risks and benefits of local currency borrowing , especially smaller companies with limited experience of financing structures. However, interviewees attributed this increased awareness and demand for local currency to companies experiencing currency volatility, rather than to efforts by lenders, including BII, to promote local currency lending. This includes companies observing currency depreciations in other African countries, even where they do not operate (see Box 1 below). None of the companies interviewed felt that lenders' activities or advocacy had changed their perception of the need for local-currency financing, while some noted their observation of the effects of currency depreciation.

You might be surprised how many companies didn't see this as a risk – many didn't and might be the single largest reason many have gone out of business.

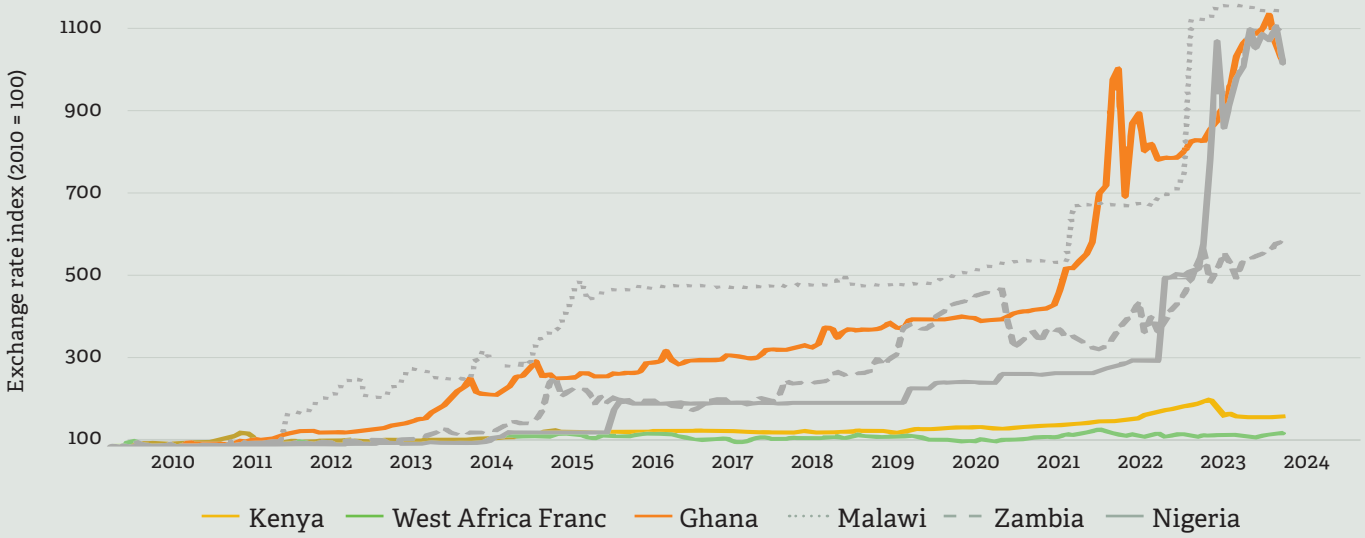
Key informant interview – investor

57 See, for example, the EU, EDFI MC and TCX EU Market Creation Facility, which provides subsidised and guarantee-backed local currency hedging in emerging markets. TCX press release (7 July 2025), Landmark Global Gateway Partnership Unveiled to Unlock up to €2 Billion for Local Currency financing in EU Partner Countries

Box 1: Currency depreciation trends

In many, but not all, countries, PAYGo companies have been exposed to substantial currency depreciation since 2019. There have been substantial depreciations – of more than 100 per cent since 2019 (and more than 300 per cent since 2014) – in Nigeria, Zambia, Malawi, and Ghana (see figure below). In Kenya, depreciation has been more modest (~25 per cent since 2019), but with greater volatility since 2021. Meanwhile, countries with hard currency pegs, such as Senegal and Côte d'Ivoire, have had relatively stable exchange rates. Substantial currency depreciations have had significant negative impacts in standalone solar markets, with inflation and depreciation both reducing customers' ability to pay, and the hard-currency value of PAYGo company revenues.[58] As a result, some companies have been pushed out of business,[59] or have diversified away from energy access,[60] while currency depreciation has been cited as a key driver of price increases and slower sales in some countries.[61]

Currency depreciations in select African countries



Source: investing.com

In summary, BII has been a leading advocate for local currency lending and has played a widely recognised and valued role in providing such financing to its investees. Many interviewees acknowledged BII's role as both a leading voice on the need for local currency lending and one of the first financiers to provide it to standalone solar companies. Of the four mechanisms, the most plausible evidence relates to the third: a demonstration effect that implies local currency lending is difficult to offer as a commercially sustainable financing product.

58 GOGLA (2024), Global Off-Grid Solar Market Report Semi-Annual Sales & Impact Data
59 Acumen 2024), The Need for Foreign Exchange Solutions in Africa
60 GOGLA (2024), Off-Track: Challenging Conditions Slow Progress on Off-Grid Solar Investment in 2023
61 ESMAP (2024), Off-Grid Market Trends Report 2024

5.3. Securitisation demonstration effects

Impact pathway 3b: Securitisation demonstration effects	
Hypothesis: the way in which BII invested – through supporting securitisation facilities - has demonstrated to others the viability and importance of this as a financing mechanism that enable investees to succeed, such that others have also adopted it.	
Change in BII investee companies	
Moderate change	Sun King used a securitised facility to support its sustainable growth and has recently established a second facility.
Change in other market actors' behaviour	
Too early to tell	Securitisation accounted for a large share of total global recorded investments (36 per cent in 2023 and 59 per cent in 2024). However, only Sun King and d.light have established large-scale securitisation facilities to date. It is too early to tell if securitisation will play a major role in financing other standalone solar companies.
BII's contribution to these changes	
Too early to tell	BII's support for Sun King's securitised facility was key to enabling the company's growth and establishment of its second facility. However, the earlier (and several subsequent) "Brighter Life by d.light" facilities, led by AFC, are more widely recognised as demonstrating the viability of securitisation. As no other companies have yet established securitised facilities at scale, it is too early to tell whether the BII-supported Sun King facilities could lead to broader demonstration effects.

This impact pathway explores catalysing market effects arising from BII's contribution to demonstrating the viability of securitised lending facilities. It finds that the prevalence of securitised facilities has increased, but that it is too early to tell whether securitisation will become more widely adopted by other companies and investors in the sector. For the same reasons outlined in Impact Pathway 3a, this analysis covers the sector as a whole.

Securitised lending facilities give companies the opportunity to access cash and improve liquidity. They allow a PAYGo company to bundle its future customer payment streams (receivables) and sell them as securities to investors. The sale of these securities can enable the issuing company to access lower cost debt if the receivables are of high quality, while also strengthening its balance sheet and improving its capital adequacy.[62]

Sun King's 2023 $130 million securitised facility, led by Citi but to which BII provided $30 million, is one of the largest in the sector to date and represented a significant milestone in the company's ongoing growth. Sun King has described the securitisation facility as "momentous",[63] and in our interview with Sun King and other sector experts, it is recognised as having provided a much-needed source of capital that will be important in enabling Sun King to continue to expand. In July 2025, Sun King announced an expanded $156 million securitised facility in Kenya, also led by Citi, and with the DFI partners (BII, FMO, and Norfund moving into the mezzanine tranche to derisk the senior commercial bank lenders.[64]

However, the only other company to recently use securitisation facilities (d.light) initiated them before the Sun King transaction. With Africa Frontier Capital (AFC), d.light developed the Brighter Life Kenya 1 (BLK1) receivables facility in 2021, with some of the finance commitments into this facility provided by DFC. d.light and AFC have subsequently established a similar range of further facilities in geographically adjacent markets including Nigeria and Tanzania.

While all interviewees expressed interest in the potential of securitisation, other companies have not yet been able to access its benefits. The interviewees expressed optimism in the possible role of securitisation, although some questioned whether it could become widely available across the sector. Interviewees noted that the transaction costs involved in establishing these facilities are likely to make securitisation inaccessible to smaller companies.

62 ESMAP (2020), Funding the sun: New Paradigms for Financing Off-Grid Solar Companies

63 Sun King (July 2023), Securitisation: An Old Tool for Africa's New Green Frontier?

64 Citi Group press release (28 July 2025), $156M Sun King Securitization to Deliver Solar for Over a Million Kenyans

The seminal deal was definitely AFC with d.light – did it first and repaid all lenders with BLK1. Got everyone else excited.

Key informant interview – investor

To the extent that a demonstration effect is beginning to emerge, all interviewees highlighted the AFC–d.light transactions as the more important example, especially the BLK1 facility. This is both because it was the first to be launched and has already repaid its senior lenders in full, demonstrating not only that securitisation is technically feasible, but also that it can deliver for financiers. Interviewees noted that, should the Sun King facility prove successful, it would provide an additional demonstration effect for the market. This suggests that in future there may be more securitised lending, and that the Sun King facility, to which BII contributed, may yet support catalysing market effects.

6

The impact of standalone solar products

By increasing access to standalone solar products, BII's investees have delivered positive impacts for people and the planet. This section presents estimates of the size of these impacts, in the context of the impact of standalone solar products globally. It describes the impact of the three companies (Sun King, M-KOPA, and PEG) since BII's investment but does not attribute impact to the role of BII's finance specifically.

By 2023, 561 million people worldwide were using standalone solar products, and industry publications cite a wide range of benefits arising from this use.[65] These benefits are well established in publications such as the biennial Market Trends Reports, and 60 Decibels' customer surveys and reports.[66] They include income increases, reduced carbon emissions, improvements in health and safety, and better education outcomes.

The industry has developed a series of standardised impact metrics to measure, compare, and report the social, economic, and environmental impacts of standalone solar products. These metrics have been derived by integrating appliance performance data with evidence from household and business surveys, complemented by industry consultations addressing appliance usage patterns, prior access to lighting and other energy solutions, and the subsequent effects on lives and livelihoods.[67]

BII's three direct investees have reached over 105 million people worldwide since they were established. Sun King dominates, having reached more than 100 million people worldwide through 25 million systems.[68] M-KOPA reached more than 5 million people through one million systems before shifting strategy to other (non-standalone solar) products,[69] while PEG reached around 500,000 people through an estimated 100,000 systems in West Africa.[70]

65 ESMAP (2024), Off-grid market trends report 2024
66 60 Decibels (2020), Why Off-Grid Energy Matters 2020, and 60 Decibels (2024), Why Off-Grid Energy Matters 2024
67 GOGLA (2020), Standardised Impact Metrics for the Off-Grid Solar Energy Sector
68 Sun King, Our Impact
69 M-KOPA, Impact
70 PEG (2021), PEG's Impact

Figure 9 shows the estimated impacts achieved by BII's investees in markets where sales have been financed by BII's investments (Kenya for Sun King and M-KOPA, and West Africa for PEG) since the point of investment. These estimates are based on reporting by the three investees, and the standardised impact metrics discussed above.[71]

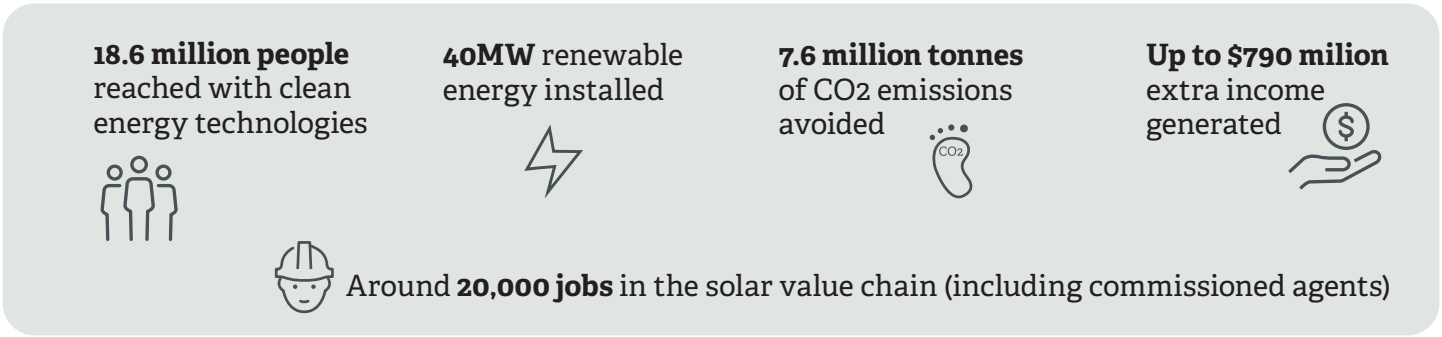


Figure 9: The impact of BII's three direct investments in Kenya and West Africa[72]
Source: Greencroft Economics based on BII investee reporting data and GOGLA standardised impact metrics

Despite the common application of these standardised impact metrics, there are questions around the transformative nature of access to low-tier energy access in poorer communities. Energy access is a goal in and of itself. Nonetheless, the evidence of energy access alone on improving financial poverty outcomes in low ability to pay communities is mixed.[73] This may help explain why energy access business models have struggled to demonstrate profitability – as energy access alone may not be enough to boost income levels and kick-start a virtuous cycle in which higher income levels support affordability, enabling customers to increase their consumption.

To continue to expand standalone solar to reach currently unconnected households will be increasingly challenging. Only an estimated 22 per cent of unconnected households worldwide can afford an entry-level Tier 1 standalone solar kit.[74,75] This makes it challenging to offer new customers first-time access to standalone solar in a commercially viable way. This has implications for future investment strategies in the sector, particularly regarding the importance of clear customer segmentation and the value of considering additional revenue streams.

71 GOGLA (2020), Standardised Impact Metrics for the Off-Grid Solar Energy Sector

72 These represent each investee's total impact since BII's first investment, without attribution to account for the relative amount or importance of BII's capital compared with that of other investors.

73 BII (2025), How does investing in electricity support inclusion? This also helps explain why the GOGLA Standardised Impact Metrics describe income gains as being "up to" the given values.

74 Tier 1 is the first tier of household energy access in the World Bank's Multi-Tier Framework and represents enough electricity to charge a phone and run a single bulb for four hours a day.

75 ESMAP (2024), Off-Grid Market Trends Report 2024

7

Implications and lessons

Three key findings cut across the assessment of each impact pathway:

- **The mixed success of Catalyst's investees and other companies in achieving commercial viability within the standalone solar markets in both Kenya and West Africa has made the realisation of catalysing market effects challenging.** On the one hand, Sun King's progress towards commercial sustainability has enabled its direct effects on the Kenya market to be sustained and meant the demonstration effects it provides to others are stronger and more credible. By contrast, M-KOPA's shift from selling standalone solar products in Kenya (and elsewhere), together with PEG's acquisition by Bboxx and subsequent restructuring, have limited both the direct effects and the catalysing market effects associated with these investees.
- **BII has been successful in enabling direct effects through its investments, especially in Sun King; while catalysing market effects are more mixed.** Sun King's significant growth, facilitated in part by BII capital, has delivered a substantial direct effect in Kenya. While this has also had some demonstration effects to other companies, most have not been able to match Sun King's success. Likewise, while local currency lending and securitised lending facilities have been valuable for BII's direct investees, they have not yet had a significant impact on others in either market explored.
- **The financing commitments made by Catalyst have been more instrumental in delivering both direct effects and catalysing market effects than its TA or market-shaping initiatives.** Catalyst's initial commitments into Sun King and its support for its securitised lending facilities have been critical to the company's growth and the associated direct and catalysing market effects delivered by this expansion . By contrast, while TA provided through BII Plus and support for market-shaping initiatives have been welcomed by individual companies, and regarded as generally valuable to the sector, it is difficult to identify specific direct effects or catalysing market effects arising from this support. This largely aligns to expectations prior to providing these activities which, with the partial exception of PAYGo PERFORM and the GOGLA Customer Protection Code, were not intended to deliver catalytic market effects.

Drawing on the insights from this evaluation, we draw four lessons for how investors can support catalysing market effects. These may apply to both standalone solar markets and more generally:

1. Commercial viability is a prerequisite for achieving catalysing market effects. To deliver such change, **DFIs need to invest in companies with strong commercial potential and support them in pursuing a path to commercialisation that aligns with their impact objectives.** This may involve investing in companies that apply clear customer segmentation, or encouraging investees to adopt this practice, to ensure a sound pathway to profitability.

2. In markets where identifying commercially promising companies is difficult – as was the case when BII entered the sector in 2015 – **a portfolio approach** of investing in multiple promising companies) **can increase the likelihood that a DFI will generate catalysing market effects**.
3. Catalysing market effects often unfold through **a series of interim steps that DFIs may find useful to articulate explicitly**. For example, in the standalone solar market, steps have included: demonstrating technological readiness of products, establishing that certain customer segments are willing to pay, and showing sufficient growth prospects to attract commercial capital. These milestones have been achieved even though long-term commercial viability remains uncertain for many companies and markets. By setting out these steps, DFIs and impact investors can clarify the stage and timeframe targeted by each investment, and can adjust course more nimbly when necessary.
4. Achieving commercially viable growth may require companies to adapt their business models and product offerings, as M-KOPA's experience demonstrates. **DFIs can support direct effects and catalysing market effects by adopting a flexible approach, recognising that impacts may emerge in markets or through business models other than those originally intended**, provided they remain consistent with the DFI's impact objectives.

References

60 Decibels (2020), "Why off-grid energy matters 2020", Link

60 Decibels (2024), "Why off-grid energy matters 2024", Link

60 Decibels (2024), "Falling Behind: Defaulted Customers", Link

BII (2023), "What impact means to us: an overview of how we manage impact", Link

BII (2024), "Pioneering catalytic capital: a decade of learning", Link

BII (2025), "Driving market-level changes in impact investing", Link

BII (2025), "How does investing in electricity support inclusion?", Link

ESMAP (2020), "Funding the sun: New Paradigms for Financing Off-Grid Solar Companies", Link

ESMAP (2024), "Off-grid market trends report 2024", Link

GOGLA (2023), "Investing in the off-grid solar sector: What you need to know", Link

GOGLA (2024), "Off-Track: Challenging Conditions Slow Progress on Off-Grid Solar Investment in 2023", Link

GOGLA (2024), "Sales and impact report – H2 2023", Link

GOGLA (2024), "Keeping the Lights On", Link

Lighting Global (2016), "Off-grid market trends report 2016", Link

Lighting Global (2018), "Off-grid market trends report 2018", Link

Lighting Global (2020), "Off-grid market trends report 2020", Link

Lighting Global (2022), "Off-grid market trends report 2022", Link

PEG (2021), "PEG's Impact", Link

Power Africa (2023), "Demystifying Securitisation for Off-Grid Companies", (no longer available online)

For further information:

- Visit: **bii.co.uk/howwelearn**

British International Investment