2019

LIGHTING THE WAY

Roadmap to Exits in Off-Grid Energy

ACUMEN
CHANGING THE WAY THE WORLD TACKLES POVERTY

OPEN CAPITAL ADVISORS

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FOREWORD

The off-grid energy sector is coming of age. As a founding Acumen Board member and Chairman of d.light since 2015, I have seen the off-grid sector grow from a handful of scrappy entrepreneurs trying to change the world to a sector reaching over 800 million people, from a trickle of investment to nearly half a billion dollars invested last year alone. I've seen companies, governments and investors collaborate, de-risking companies and entire markets to bring light to hundreds of millions of off-grid customers' homes.

This work to establish the off-grid sector has brought us to the next level, complete with industry associations, government standards and fierce competition. As established and new entrepreneurs increasingly respond to the growing demand for off-grid solutions, capital providers need to meet companies at this next level of development, growing with the sector to ensure customers can continue to turn on the lights.

Exits are especially important to this goal. As this report shows, exits give confidence to later-stage commercial investors that this sector can deliver solutions profitably. They also allow investors to support new pioneers in bringing never-before-seen innovations to the market—the way Acumen bet on d.light in 2008, launching a 10-year transformation of the off-grid energy industry and the world along with it.

I hope the findings in this report enable you to better understand and fully embrace the changes ahead, to step back and recommit to doing our part to pushing the off-grid sector towards its full potential to close the chapter on a world without electricity.

STUART DAVIDSON
Board Member and Investment Committee Chairman, Acumen

Acumen would like to acknowledge the partners that generously support the Pioneer Energy Investment Initiative.

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Special thanks and appreciation to all who made this report possible:

Our peer reviewers Steven Hunt, Linde Lassche, Chad Larson, Andrew Reicher, Wayne Keast and Ademidun Edosomwan.

Carlyle Singer for her strategic guidance and the Acumen team: Stuart Davidson, Kate Montgomery, Sarah Bieber, Alberto Gomez-Obregon, Esha Mufti, Alex Healey, Andrew Tarazid-Tarawali, Brendan Culliton and Carolyn Bielfeldt for their advice, support and guidance along the way.

And finally, everyone that generously provided their time to provide us with the insights that made this report possible, a complete list of whom can be found in the appendix.

Cover photo by Peter Irungu.

This report was co-authored by Open Capital Advisors and Acumen: Jonathan Clowes, Irene Hu, Leslie Labruto, Harry Masters and Lornah Mutegi.

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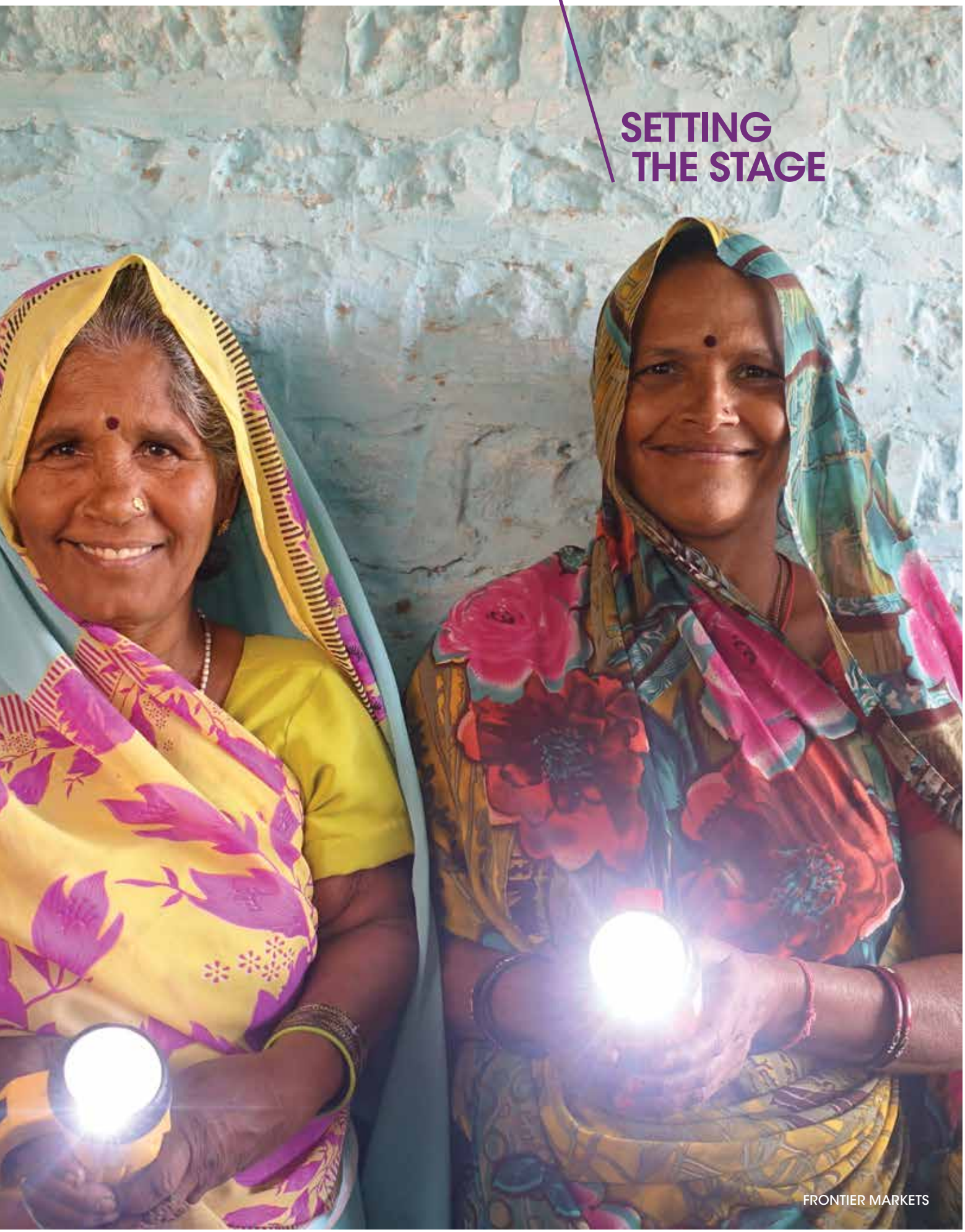
This material has been funded by UK Aid from the UK government; however, the views expressed do not necessarily reflect the UK government's official policies.

CONTENTS

ACRONYMS

CAPEX	Capital Expenditure
DC	Direct Current
DFI	Development Finance Institutions
FMCG	Fast-Moving Consumer Goods
GOGLA	Global Off-Grid Lighting Association
IPO	Initial Public Offering
M&A	Mergers and Acquisitions
MFI	Micro-Finance Institutions
MIX	Microfinance Information Exchange
MNO	Mobile Network Operators
OPEX	Operating Expenditure
PAYG	Pay-As-You-Go
PE	Private Equity
SHS	Solar Home System
VC	Venture Capital

SETTING THE STAGE



Executive Summary

Exits, though challenging, are critical to build the robust capital market that is needed to drive innovation and scale in the off-grid energy sector.

Off-grid energy is proving to be one of the most attractive sectors for impact investing with year-on-year increases in lives reached, units sold, dollars invested and income generated. Over the last decade, more than 800 million people gained access to energy, with 360 million gaining access through off-grid solar products, some of which leverage pay-as-you-go (PAYG) financing to boost affordability. Meanwhile, off-grid energy raised a total of $1.4 billion from 2012 to 2018, equivalent to 35 times the total amount of capital invested before 2012.[1]

Despite the capital flowing into the sector, exits remain a challenge. Exits serve as proof points for later-stage commercial investors to gain confidence in the sector, while also allowing early-stage investors to recycle their capital into new, pioneering off-grid companies. This is a critical component of building the robust capital market needed to support continued innovation and scale in the off-grid energy sector, which offers a cheaper, faster, and cleaner alternative to traditional on-grid power.[2]

However, there have been few exits in off-grid energy to date. This report seeks to understand why and, more importantly, to identify the most viable pathways to exit, so companies, investors and other stakeholders can facilitate more exits.

We found three major factors that limit exits in off-grid energy:

+ **Off-grid energy has yet to reach the profitability that later-stage investors require.** Profitability demonstrates a company's ability to use capital efficiently and achieve positive unit economics. However, complex business models and challenging geographies have led to a longer journey towards profitability than entrepreneurs and earlier-stage investors had expected.

+ **There is limited secondary capital in the market.** Potential secondary investors such as impact-focused growth equity investors and DFIs are often structurally or philosophically limited to only investing primary capital.

+ **Lack of debt and a resulting overreliance on equity in the early years of the market's evolution led to a significant number of companies being overvalued, which has stymied some mergers and acquisitions and secondary sales efforts.** While the debt to equity ratio of capital available in the market has evened, we are seeing a mismatch between the valuation early-stage investors need to make a return and the valuation acquirers and later-stage investors are willing to accept.

With these in mind, we believe that strategic acquisitions and secondary sales are the most likely pathways to exit in the near term. Some strategic investors are actively seeking to increase their footprint and gain customer insights in the emerging markets where off-grid companies operate while others may want to leverage the distribution networks and payment platforms that off-grid companies have built for their own products. Separately, secondary equity sales provide an opportunity for enthusiastic investors to double down on promising companies or streamline complicated ownership structures. When it comes to IPO exits, there is a notable disconnect: Most of the companies we spoke to believe that IPOs are a mere three to five years away, but the majority of investors are skeptical that they will ever be a reality. We see potential for a handful of market leaders to explore IPOs but expect these events to be rare.

For these exits to be more commonplace, we recommend the following for different stakeholders:

+ **Off-grid companies and their investors shift their focus from growth at all costs to demonstrating clear progress towards profitability.** Profitability not only demonstrates a company's ability to use capital efficiently

and achieve positive unit economics, it is also the key performance metric later-stage commercial investors and strategic acquirers need to see when considering an investment.

+ **DFIs step in to provide liquidity to early-stage investors,** recognizing that secondary investments to build more mature off-grid capital markets can be as impactful as primary investment—so long as companies continue to prioritize low-income customers as they grow.

+ **Capital providers ensure companies have access to the right types of capital to fund their growth as they scale and avoid being overvalued.** Access to debt to fuel working capital, in particular, would have the potential to attract additional equity investors and improve returns for early investors.

+ **All stakeholders work together to increase transparency and build benchmarks around operational efficiency and unit economics.** Tracking these, along with consistent reporting on KPIs, will demonstrate an improving track record and give potential investors more confidence to invest.

We care deeply about this topic because successful exits demonstrate that companies can serve low-income customers and scale sustainable businesses, thus driving more capital to the sector. The continued growth of the off-grid energy sector is crucial in solving one of the world's biggest problems and improving the lives of millions of low-income people. That growth is only possible if exits occur and the market has a chance to thrive.

D.LIGHT

BIOLITE

Introduction

A landmark year for off-grid energy investments, 2018 saw the value of disclosed investments cross the $500-million[3] mark for the first time. The debt-equity balance stabilized at close to 50:50, bringing the total of cumulative disclosed investments to more than $1.4 billion to date.[4] This progress comes even as the number of deals has declined 15 percent from 2017 to 2018, indicating the growing average ticket size of deals as off-grid energy companies begin to reach scale.[5]

Acumen's 2018 report, *Accelerating Energy Access: The Role of Patient Capital*, reflected on this exciting growth by evaluating whether this influx of capital helped to close the pioneer gap and whether patient capital in the form of early-stage equity was still required. Patient capital plays a vital role in derisking, attracting and unlocking the additional investment capital required to scale. Yet, fewer Seed and Series A checks are being written despite the overall number of transactions increasing in the sector. Acumen's estimates show that $210 million of Seed and Series A capital is required annually to achieve the UN's Sustainable Development Goal of Universal Energy Access by 2030 (SDG7) yet, on average, a mere $16.5 million was deployed annually from 2014 to 2018. The report also highlighted the scarcity of exits in off-grid energy.

For *Lighting the Way: Roadmap to Exits in Off-Grid Energy*, Acumen partnered with Open Capital Advisors, a leading strategic and financial advisory firm in off-grid energy, to provide insight into the dearth of exits and find ways for all stakeholders to facilitate more exits in the future. To develop forward-looking, actionable recommendations, we explored three key questions:

+ **Why have there been so few exits in off-grid energy?**
+ **What are the potential pathways to exit?**
+ **How can we create robust capital markets that facilitate exits?**

Because off-grid energy capital markets include a diverse range of investors and companies, we narrowed our focus largely on equity exits in SHS and pico-solar because they are the most mature sub-sectors, having received greater sums of funding and attracted commercial debt and equity capital. We felt that the exits discussion would be premature for other sub-sectors such as mini-grids, productive use and clean cooking, although we hope that the insights we generate will be applicable across sub-sectors. We focus on equity because exits are structured into debt through repayments, though we also seek to understand the role of debt capital in creating conditions conducive to equity exits.

We hope to provide investors, companies, and other stakeholders throughout the off-grid energy ecosystem with a greater understanding of exits now and into the future. To this end, we will share key investment trends and insights into the limited number of exits to date. We will then lay out the potential pathways to exit, identifying key challenges and opportunities for companies and investors as well as recommendations to facilitate more successful exits.

Methodology

To explore each research question in depth, we used the following methodology.

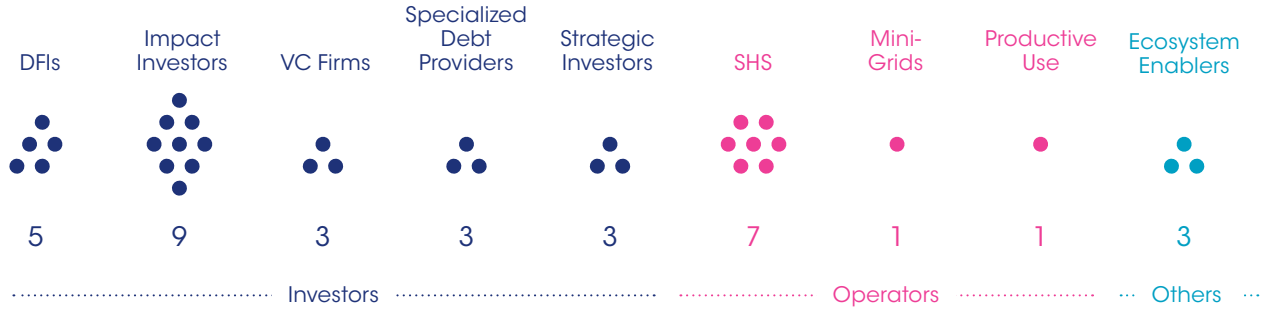
We first conducted desk research to identify gaps in the current conversations on investments and exits in off-grid energy. We assembled a large database of more than 100 equity and debt transactions from which we drew trends around investor type, ticket size, investment stage, sub-sector funding and characteristics of exits to date.

We then conducted 30 one-on-one consultations with senior-level representatives from key stakeholders in off-grid energy. Our consultations were drawn by mapping more than 100 active investors, companies, organizations and other ecosystem players. We prioritized stakeholders based on relevant sub-sector focus and investment and exit history. Each consultation was structured using a tailored interview guide, and interviewees were promised anonymity and confidentiality to encourage openness. Confidential investment information is held by Open Capital Advisors and has not been shared with Acumen to prevent any conflict of interest.

We also organized a working session during the Global Off-Grid Lighting Association (GOGLA) Annual General Meeting in June 2019 to share our initial hypotheses and gather additional feedback. Our discussion focused on the scarcity of exits, the most feasible pathways to exit and potential recommendations to facilitate more exits in the future. To encourage productive discussion, we shared our initial hypotheses and then divided participants into groups to dive deeper into a specific research question, followed by full group discussion.

The Open Capital team then synthesized findings from our investment database, consultations and the working session to extract key lessons.

FIGURE 1
NUMBER OF INDIVIDUAL STAKEHOLDERS CONTRIBUTING TO THIS REPORT



MAPPING THE LANDSCAPE

SOLARNOW

Investment Trends

Before examining our findings, we wanted to share some general investment trends in off-grid energy to provide context for the current and future landscape for exits.

Overview of Investment in Off-Grid Energy

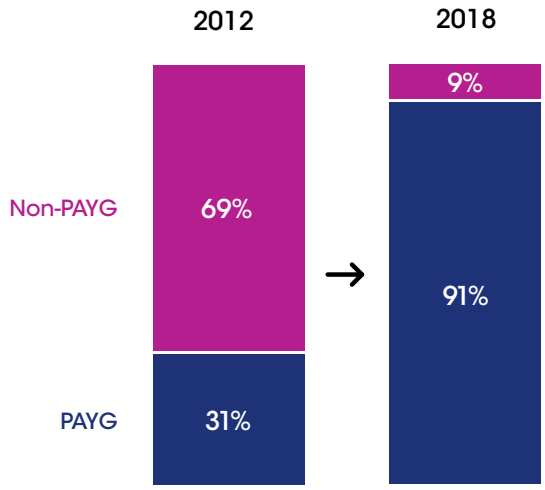
Patient, early-stage capital has helped spur significant investment to grow off-grid energy, particularly pay-as-you-go (PAYG) solar. From 2012 to 2018, the sector raised a total of $1.4 billion, around 50 percent of which was equity.[6,7] Off-grid energy comprises many sub-sectors: SHS and pico-solar, mini-grids, clean cooking and productive use. SHS and pico-solar receive the lion's share of investment, making up 81 percent of total investments into off-grid energy.[8] From a business model perspective, investors have targeted PAYG companies. These companies have gone from receiving only 30 percent of total investment in 2012 to 91 percent of total sector funding in 2017.[9]

Grants and patient capital were key in supporting early off-grid energy pioneers, helping companies test new business models and begin to scale. As the sector grew and shifted towards proven commercially viable business models, grant capital decreased and the amount of equity and debt capital increased.

A recent shift in the proportion of debt capital to equity indicates that off-grid energy has entered a new phase of maturity. The amount of debt capital overtook equity investment in 2017, today representing more than 60 percent of annual capital inflows. Debt is instrumental for the growth of PAYG solar companies because they require working capital to finance customer receivables. More than 60 percent of the total funding will go towards financing consumer receivables and the rest will be used for inventories and capital expenditure (CAPEX).[10] Debt is also a crucial element in attracting investors. Appropriate access to debt has the potential to attract additional equity investors to the space as increased leverage can improve returns for equity investors.

Despite a surge in the total of equity investments deployed and increased involvement of debt providers, there are still major gaps in equity investment to fill to achieve energy access. There are a limited number of active investors—the top 10 contributed more than 60 percent (about $1.1 billion) of total investment in off-grid energy companies. Those investors are pouring most of their capital into established

FIGURE 2
PERCENTAGE OF INVESTMENT FUNDING BY BUSINESS MODEL BETWEEN 2012 AND 2018



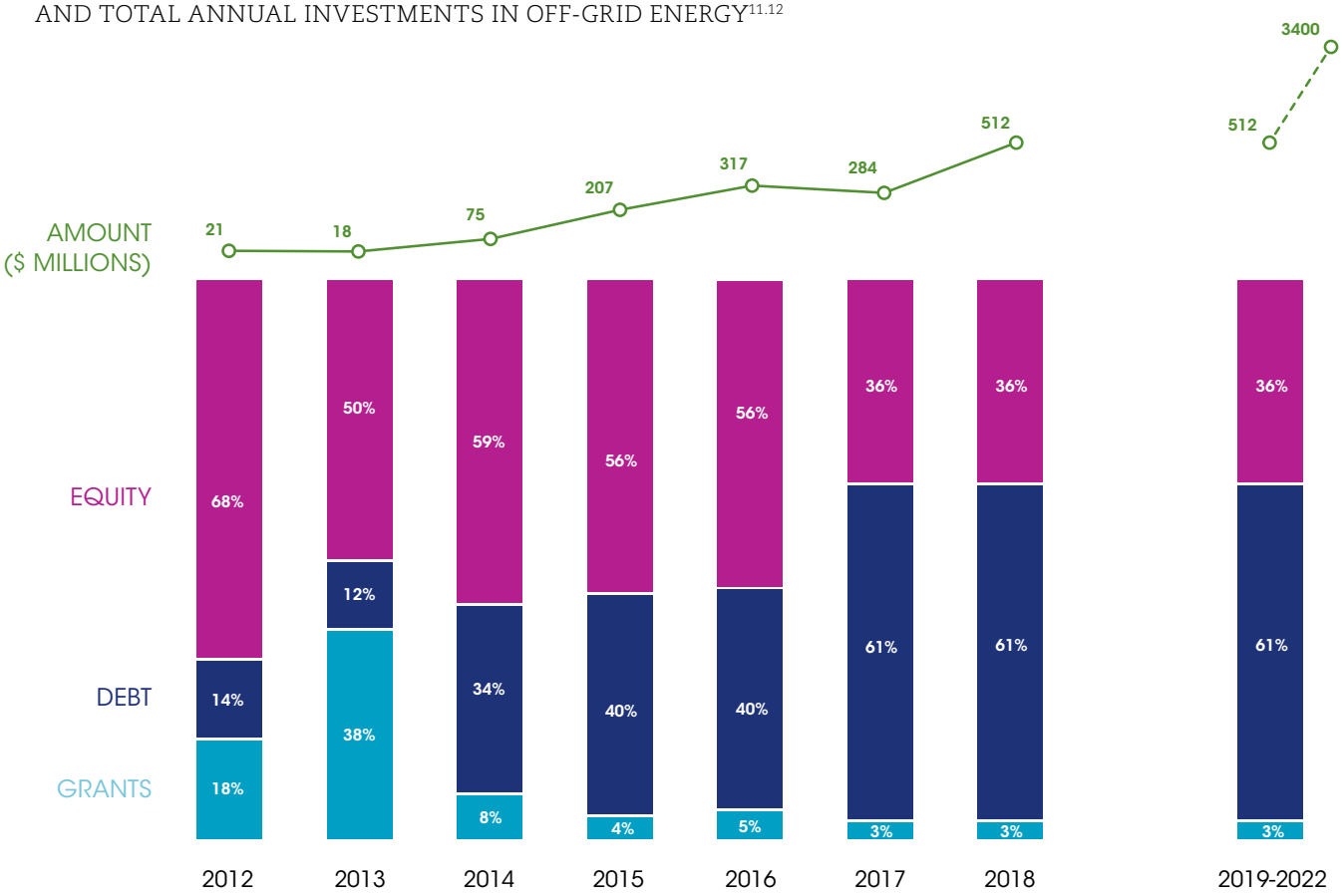

KOPAGAS

companies because incumbents are able to absorb much larger ticket sizes as they scale—the top 10 SHS companies by scale and capital raised account for more than 80 percent of the total funding into the sub-sector and more than 60 percent of funding into the overall sector.[13] The implication of these dynamics is that the number of transactions has decreased and there is limited equity available for new, early-stage companies. No track record of successful exits may have also deterred new capital providers to close this equity gap.

Key Capital Providers

Over the last decade, the primary investors in off-grid energy have been impact investors, DFIs and specialized funds. Acumen's *Blueprint to Scale* report with Monitor Group introduced a framework describing the four stages of development

FIGURE 3
SHARE OF ACTUAL AND PROJECTED INVESTMENT FUNDING BY INSTRUMENT TYPE, AND TOTAL ANNUAL INVESTMENTS IN OFF-GRID ENERGY[11,12]



in a pioneer firm's journey. Early-stage investors support companies during the blueprint, validate and prepare stages where companies try to understand customer needs, develop suitable customer propositions and build their operational foundation. Most funding during this phase comes in the form of grants or equity from impact investors, foundations and DFIs. As companies enter the scale stage, expanding their proven model while venturing into new segments and geographies, we start to see the entry of more commercial growth and debt capital.

However, we have seen limited engagement from later-stage investors such as commercial PE or strategic investors. This implies that the sector is still largely funded by primary capital, due to limited

FIGURE 4
CAPITAL PROVIDERS ALONG THE GROWTH PATH OF OFF-GRID ENERGY COMPANIES[14]

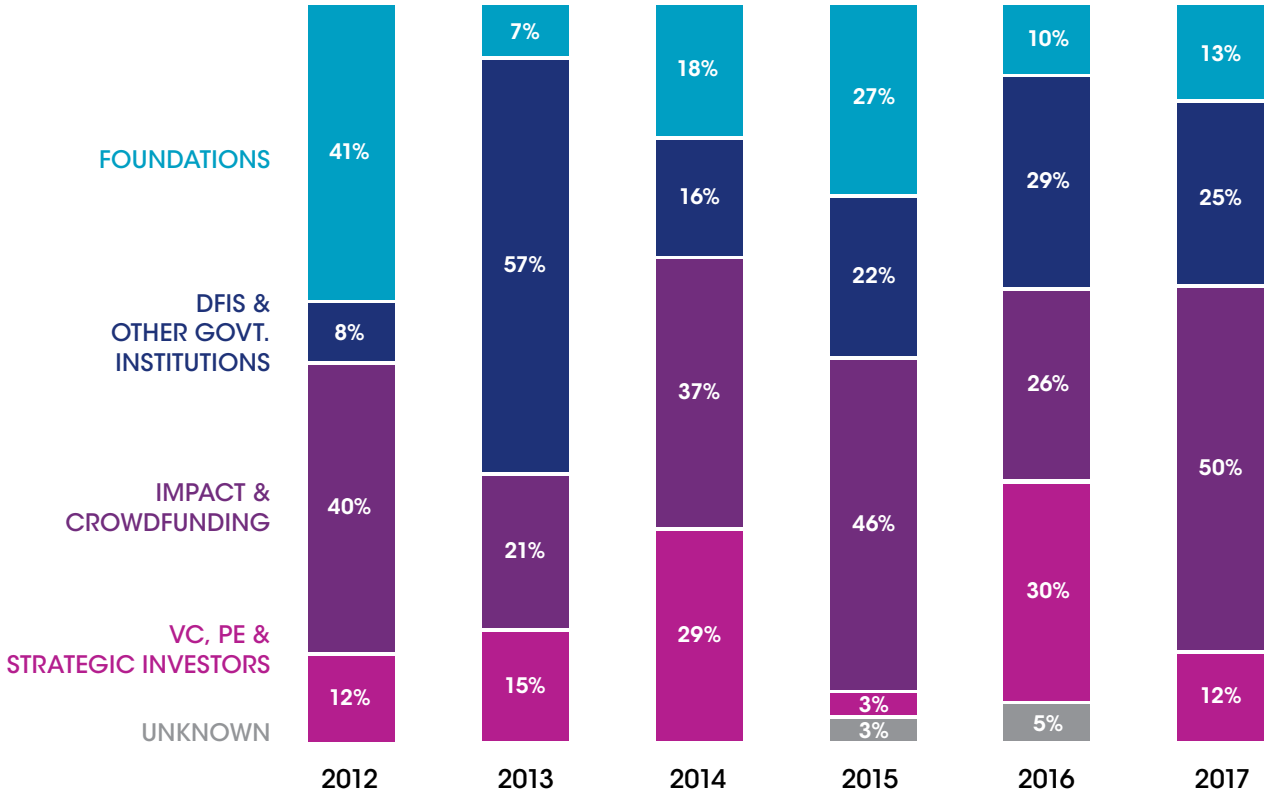
activity from the types of later-stage investors that could provide liquidity to earlier-stage investors through secondary investments. While Figure 5 below shows that investments from commercial VC, PE and strategic investors spiked in 2014 and 2016, the contraction in VC, PE, and strategic investment in 2015 and 2017 implies that this is not a consistent trend and is driven by a few one-off transactions.

Exits to Date

To date, there have been relatively few exits in off-grid energy, and those that have occurred have been small secondary sales or opportunistic acquisitions rather than the outcome of long-term exit strategies. Based on market research and consultations, we estimate that less than $50 million has been returned to equity investors via 12 exits compared to the $1.4 billion of equity and debt invested in off-grid companies since 2012.[17] Our research shows secondary sales have yielded the most positive returns to date. For example, Acumen achieved a small exit with M-KOPA and also partially liquidated its Series A shares in d.light.

Other exits have come through share buybacks (management of a first-mover SHS and pico-solar company bought back shares from an impact-focused family office) and strategic acquisitions (ENGIE acquired Fenix International, Simpa Network and Mobisol), though these transactions have been rare and opportunistically driven by off-grid energy assets becoming available at attractive valuations. Below, we discuss lessons around investor and company motivations for each type of exit to date.

FIGURE 5
INVESTMENTS IN OFF-GRID ENERGY BY TYPE OF INVESTOR BETWEEN 2012 AND 2017[15,16]



CASE STUDY

d.light

Lessons from a successful secondary exit in the off-grid sector

One of Acumen's first off-grid energy investments was a $1.01 million investment in d.light in 2007. Acumen went on to invest $2.9 million in subsequent rounds, while providing other support and expertise, most notably placing one of its board members, Stuart Davidson, on d.light's board. d.light became a flagship investment in Acumen's energy portfolio, accounting for more than 80 percent of its impact.

In 2018, d.light was ready for new growth capital and preparing for a Series E round. Roughly 11 years after its Series A investment, Acumen saw an opportunity to exit via a secondary sale. Acumen hoped for a 1x return on investment to continue investing in new pioneering start-ups. With support from an investment banking firm, d.light attracted growth capital from a consortium of investors led by Inspired Evolution, a sub-Saharan African private equity firm. The consortium included Inspired Evolution II's investors, FMO, Norfund and Swedfund. Together, the company raised $41 million made up of $25 million of new Series E funding and the rest in a secondary transaction that provided an exit to earlier Series A, B, C and D investors.

Inspired Evolution agreed to purchase Acumen's Series A investment for a 2.4× return on invested capital. This transaction signaled to other impact investors in the off-grid market the possibility of reasonable returns in high-impact sectors. It also sent a powerful message to early-stage impact investors that returns, while achievable, are likely to be "below market" in nature over the short-to-medium term.

Our lessons from this sale include:

+ Conversations about exits should start at due diligence, with the company and investors identifying potential exit opportunities together.

+ Adequate lead time of approximately 24 months is recommended to structure the exit and 12 months to execute the exit once an opportunity is identified.

+ Identifying potential exit opportunities during each fundraise is good practice. Potential secondary share buyers should be discussed especially when a company is bringing in new capital.

+ In nascent sectors, patience, time and perseverance is required for investors to see returns.

We plan to use these lessons to secure future secondary equity sales and continue catalyzing early-stage companies.

TABLE 1
TYPES OF EXITS AND INVESTOR RATIONALE[18,19]

	RATIONALE FOR EXITS TO DATE	EXAMPLES
SECONDARY EQUITY SALES		
The sale of existing equity shares to a secondary investor	+ To simplify the capital table by selling to existing investors + To gain more control over the company + For financial gain by acquiring discounted shares	+ Inspired Evolution, together with FMO, SwedFund and Norfund, purchased Acumen's Series A shares in d.light and shares from Series B, C and D investors + Blue Haven Initiative bought out Acumen in M-KOPA + A sector-focused VC bought out an early-stage investor in an East African SHS company + A strategic investor bought out a family office's investment in a vertically integrated SHS company + An impact investor sold its shares of a leading PAYG solar provider [purchaser undisclosed]
SHARE BUYBACKS		
The sale of existing investor shares to company management/founders	+ To restore greater control of the company to its founders/ management + For financial gain by acquiring discounted shares	+ An impact investor sold back its shares to the founders of a SHS company
SECTOR M&A		
Integration of entities or takeover of one entity by another in the same sector	+ To leverage existing synergies between companies + To access new geographies, customer segments, products, distribution channels, etc.	+ Mobisol, a vertically integrated SHS company, acquired Lumeter, an off-grid software company + EcoEnergy, in whom BBOXX has a stake, acquired fellow Pakistani SHS company Brighterlite + Greenlight Planet, a product- and software-focused SHS company, acquired Global Cycle Solutions, a solar product distribution company + A mini-grid company was fully acquired by a competitor
STRATEGIC ACQUISITION		
Integration of entities or takeover of one entity by another entity operating outside of the off-grid sector	+ To gain an off-grid energy asset at an attractive valuation + To establish a footprint and explore emerging technology in new geographies	+ ENGIE fully acquired Fenix International, Simpa Networks and Mobisol
IPO		
Process of offering company shares to the public through issuance of new stock	+ No IPOs have occurred to date	+ None

Factors Limiting Exits in Off-Grid Energy

Since there have been so few exits to date, there is no playbook for achieving exits in off-grid energy. However, our consultations see three common factors limiting exits:

1. Many off-grid energy companies are not yet profitable and are thus unattractive to later-stage investors that could facilitate exits.
2. Secondary purchases are viewed as less impactful than primary investments.
3. Sparsity of debt when the sector emerged has resulted in overvaluations and a mismatch between early-stage investors' return expectations at exit and potential acquirers' willingness to pay.

Most Off-Grid Energy Companies Have Yet to Achieve Profitability

Most investors and companies consulted believe that it is still too early for a wave of exits in off-grid energy because most companies are not yet profitable. Later-stage investors such as commercial private equity and strategic investors often expect companies to have achieved both scale and profitability before they invest. However, building such a company in off-grid energy has taken more time and capital than initially anticipated. In other sectors, Series C or D fundraises usually fund the expansion of companies that have already scaled whereas in off-grid energy these later, larger equity raises are used to fund initial growth and development of operating systems for scale. As such, that capital cannot go towards taking out early-stage capital. Whereas Acumen initially estimated it would take seven years of patient capital to achieve exits, we have found that 10 to 12 years is more realistic. There are few benchmarks to measure the maturity of innovative new sectors in emerging markets. Although MFIs serve as one point of comparison, those business models are relatively simple compared to off-grid energy models.

Complex business models are a primary reason for the delayed profitability of off-grid energy companies. The early movers in off-grid energy sold pico-solar products for cash, and the business model looked like that of a straightforward consumer goods company. The following wave of companies developed vertically integrated PAYG business models to overcome limited customer spending power, incorporating asset finance, mobile payment infrastructure, sales and servicing. Investors believed that the PAYG model could unlock energy access for the billion people living without electricity while also generating sound financial returns. As a result, they poured large amounts of capital into the sub-sector. However, this vertically integrated model has proven difficult to scale as companies must successfully operate product, technology, distribution and consumer finance companies under one roof.

Profitability is also hindered by challenging geographies, which lead to higher-than-expected operating costs. First, off-grid energy companies target some of the most rural and least densely populated regions in the world. Costs to serve those customers are very high due to limited pre-existing infrastructure, resulting in companies building vertically integrated businesses. Second, it has been harder for companies to build a base of creditworthy customers to manage PAYG loan receivables effectively given the lack of credit history

of most customers. Third, companies often feel pressure to expand their geographic footprint to attract new investors. Many vertically integrated companies expanded rapidly into new markets seeking first-mover advantage without fully understanding the total cost of serving customers with different aspirations in these geographies, yielding higher-than-expected operating costs.

Lack of proven profitability, especially as measured by unit economics, deters later-stage commercial investors. Although scale appeals to later-stage investors, companies that cannot demonstrate positive unit economics have failed to attract them. Negative unit economics imply that the more a company scales, the more money it (and investors) will lose.

FIGURE 6
MARKET MAP OF SOLAR HOME SYSTEM AND PICO-SOLAR COMPANIES

CASE STUDY

Orb Energy

How an investor's unwillingness to make secondary investments resulted in an unsuccessful exit

In 2017, Orb Energy engaged in a new round of financing, and Acumen Capital Markets (ACM), the entity that manages Acumen's early-growth commercial funds, saw an opportunity to exit its 7 percent stake. ACM's $1.15 million investment in 2011 had supported the SHS provider in navigating India's fast-changing regulatory environment, to expand from India into East Africa and reach profitability. Given these accomplishments, ACM and Orb's CEO agreed that this was the right time to exit. Together, they approached two large financing institutions for the new funding round, intended to help Orb grow its in-house financing offerings for small Indian enterprises and expand operations in Kenya.

The new investors, however, were ultimately unwilling to buy ACM's shares. Both investors evaluated Orb's stage of growth and wanted their capital to have a direct impact on Orb's continued growth rather than buying out an existing investor. This is a common investment preference among the types of investors currently active in the off-grid sector.

Delivering positive unit economics while serving off-grid populations is no small feat. However, if companies rack up exorbitant operating costs to expand at all costs with unprofitable unit economics, the lowest income customers are often the first to lose as companies search for ways to reduce losses. Companies may be prone to move up-market and sell higher-margin, more expensive products and cut the lowest-margin products from their product mix, which are the most affordable for customers living on less than $3.10 per day. This leaves both new and existing low-income customers vulnerable.

To avoid this, companies can take necessary time early-on in a company's evolution to understand and deliver profitable unit economics. As a result, customers wind up buying from healthier, more sustainable companies and later-stage capital becomes easier to attract.

Many Investors Active in Off-Grid Energy Are Not Willing or Able to Facilitate Exits

There are investors active in off-grid energy that could facilitate exits but are not currently doing so. DFIs, impact investors and more impact-focused VCs have historically invested primary equity due to impact mandates. Primary equity investments are deemed more impactful as capital can easily be linked directly to company growth. However, what needs to be considered is the role exits play in enabling larger capital flows to the sector.

Notable failures and distressed sales also have the potential to erode investor confidence in the market. The handful of investors that have lost money on previous investments in distressed companies are unlikely to re-enter the market, which further limits the pool of investors that can facilitate exits. However, it is important to note that these business failures are the exception rather than the norm.

Some Off-Grid Companies Have Been Overvalued

Overvaluation in early funding rounds limits exits in off-grid energy. Valuation is inherently challenging for nascent and complex business models, but several other factors also drive up early valuations:

Too Many Investors, Too Few Deals

The off-grid sector generated significant excitement when it emerged because it posed a high-impact solution to a global issue that could also provide significant financial returns to investors. At this same time, impact investing was starting to gain traction. The result was a capital market populated with equity investors chasing the few pioneer companies in the sector and driving up valuations. This set a precedent, leaving many second-wave companies expecting similarly high valuations.

Misunderstood Business Models

Initial valuations of off-grid companies were done at a time when the complexity of business models were not fully understood. Companies were initially compared to technology or fast-moving consumer goods (FMCG) companies rather than distribution and consumer finance companies, resulting in investors and companies applying the high-revenue multiples used for technology valuations and focusing on equity as the best capital for growth.

Lack of Valuation and Market Metrics

Investors lack a standardized method for valuing off-grid energy companies, largely due to the nascency of the sector. Publicly available information on off-grid energy KPIs and valuation comparables are very limited and there is still no consensus on valuation metrics.

Lack of Debt Leading to Aggressive Equity Fundraising

Pioneer off-grid energy companies had to resort to equity financing to fund working capital needs due to a lack of available debt financing. This has required companies to aggressively push for higher valuations to raise funds for operations.

SIMUSOLAR

The perceived overvaluation of off-grid energy companies has made shareholders expect similar valuations in subsequent rounds to meet return expectations. This pattern of aggressive growth expectations is difficult for companies to meet, though they have been partially responsible for setting unrealistic growth expectations to justify higher valuations. As a result, there is now a significant gap between the valuations early-stage investors need to meet return expectations at exit and those later-stage investors are willing to accept. This gap is further widened by the differing metrics used for valuations. Off-grid energy companies are often valued based on revenue multiples in earlier funding rounds, while later-stage PE and strategic investors expect to see profit multiples.

As an investor focused on using capital to tackle complex challenges of poverty, Acumen is particularly concerned with overvaluations because, at the end of the day, low-income customers lose. High-entry valuations require companies to achieve a greater degree of scale to deliver a compelling return to investors and investors in overvalued companies are likely to pressure management to prioritize higher growth and higher-margin products. The focus on more expensive products and aggressive lending practices jeopardizes the social impact thesis that drew many impact investors like Acumen to the sector in the first place.

PROMETHEAN POWER SYSTEMS

Pathways to Exit

We analyzed our data to better understand the pathways to exit for equity investors, including the challenges and potential solutions. To date, off-grid energy investors have seen exits through strategic acquisitions, sector M&A, share buybacks and secondary sales. While no IPOs have occurred to date, most off-grid energy companies interviewed believe they are a viable route to exit while investors are far more skeptical.

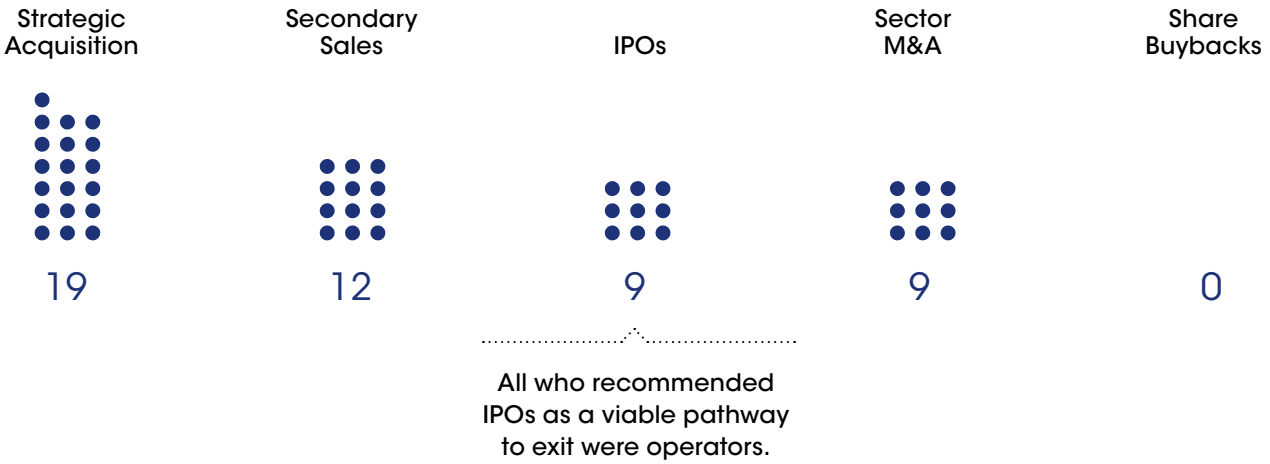
Strategic Acquisition

Investors and companies view strategic acquisitions as the most achievable pathway to exit, with some having already occurred.

For this report, we define strategic acquisition as the purchase of an off-grid energy company by a corporation not connected to the sector to differentiate it from sector M&A. Examples include ENGIE's acquisitions of Fenix International, Simpa Networks, and Mobisol.

Strategic acquirers can come from a wide range of sectors but share similar motivations. Strategic investors often want to either increase their presence or gain greater insight into the emerging markets where off-grid companies operate. Some have historical links to these markets while others are looking to develop links as part of a global strategy. They may also want to leverage the distribution networks and

FIGURE 7
MOST CITED PATHWAYS TO EXIT DURING CONSULTATIONS



CASE STUDY

Fenix International

What's needed for a strategic acquisition

ENGIE, a global energy and services group, wanted to be an active player in energy access in Sub-Saharan Africa, pursuing a strategic shift towards decentralization, digitization and renewables. ENGIE historically partnered with investors to provide large investments to more established companies in the off-grid sector, including $12.6 million in equity to Fenix International in 2015 and leading a $20 million equity round in BBOXX in 2016.

In 2017, ENGIE decided to fully acquire Fenix International. ENGIE believed that Fenix's valuation was reasonable. ENGIE had explored several large off-grid companies but was unable to agree on a valuation with existing shareholders. ENGIE believed that Fenix also offered the right strategic fit, helping to build its B2C and brand presence in Africa as well as a full portfolio of on- and off-grid utility-scale energy solutions for governments. Culturally, Fenix and ENGIE management shared alignment around core values, including inspirational leadership in energy access.

payment platforms that off-grid companies have built for their own products (e.g. agricultural inputs or direct current (DC) appliances). Additionally, strategic investors may want to access the large amount of customer financial data that off-grid energy companies have collected to understand the credit worthiness of customers in these markets.

There are many strategic partners to consider, but the companies and investors who participated in this report see the following as the most promising.

ENERGY CONGLOMERATES

Large energy conglomerates have already begun to make significant investments in off-grid energy companies in the form of providing growth equity, launching joint ventures or simply acquiring companies. Many energy conglomerates are looking to grow their renewable energy coverage and gain a greater presence in emerging markets by expanding their distribution and product offerings through existing channels. For example, Shell has publicly stated its ambition to provide a reliable electricity supply to 100 million people without access by 2030 as part of its strategic plan.[20] The combination of these conglomerates' existing expertise in on-grid energy with the off-grid services has the potential to create a one-stop shop for national electrification initiatives and UN objectives.

APPLIANCE AND BATTERY MANUFACTURERS

Both battery manufacturers and suppliers of DC appliances are seen as potential acquirers due to their alignment with the off-grid energy value chain. SHS companies offer access to a wide and captive customer base for DC appliances, reaching potentially hundreds of thousands of customers across geographies. Battery companies could see an opportunity to provide upgrades or replacement parts to customers' existing units as SHS equipment begins to degrade over time. Many major appliance and battery manufacturers are large Chinese conglomerates and, although they have a long history of supplying off-grid companies, they don't necessarily have exposure to

Japanese Conglomerates Could Play an Increasing Role in Strategic Acquisitions

Marubeni

MITSUBISHI

MITSUI&CO.

Sumitomo

The off-grid energy sector has already seen increased interest from Japanese conglomerates with deep pockets. For example, Sumitomo invested in M-KOPA, Mitsui invested in both M-KOPA and OMC Power, Mitsubishi invested in BBOXX and NEoT Capital, and Marubeni led an equity investment in Azuri Technologies.

Investing in renewable energy has become a key priority for them, as they pursue opportunities created by deregulation in Japan's energy markets and increased government renewable energy targets. Facing negative interest rates in Japan, off-grid companies in emerging markets are also an intriguing growth opportunity. They view the off-grid energy sector as a means of exploring ways to expand their core business and so profitability is increasingly a key metric they look for in an investment. Although they are currently passive investors, they have indicated a willingness to do secondary share purchases and could become strategic acquirers as they deepen their involvement in the off-grid sector.

EASY SOLAR

the full off-grid energy value chain. Panel manufacturers have not actively entered this market as an investor or acquirer to date, potentially due to the small size of the off-grid market compared to the large-scale solar market.

MOBILE NETWORK OPERATORS (MNOS)

MNOs are already embedded in the off-grid energy value chain through the mobile money infrastructure that enables the PAYG model. Many MNOs including Safaricom, Orange, MTN and Airtel, have strategic partnerships with PAYG solar companies. MNOs also have a deep understanding of the challenges in frontier markets where off-grid companies operate. Many struggle to differentiate themselves in increasingly competitive markets with eroding margins, and off-grid companies can offer them additional growth opportunities through access to customers. Such an alliance could also benefit off-grid energy companies by providing easier routes into new markets for off-grid products and services.

ALTERNATIVE ACQUIRERS

Beyond the potential acquirers already stated, some investors and companies suggested microfinance institutions (MFIs) due to a shared rural customer base and alignment with the financing offered with PAYG models. However, there has been limited interest from local MFIs due to the

FIGURE 8
IDEAL INVESTMENT LIFECYCLE FOR OFF-GRID COMPANIES

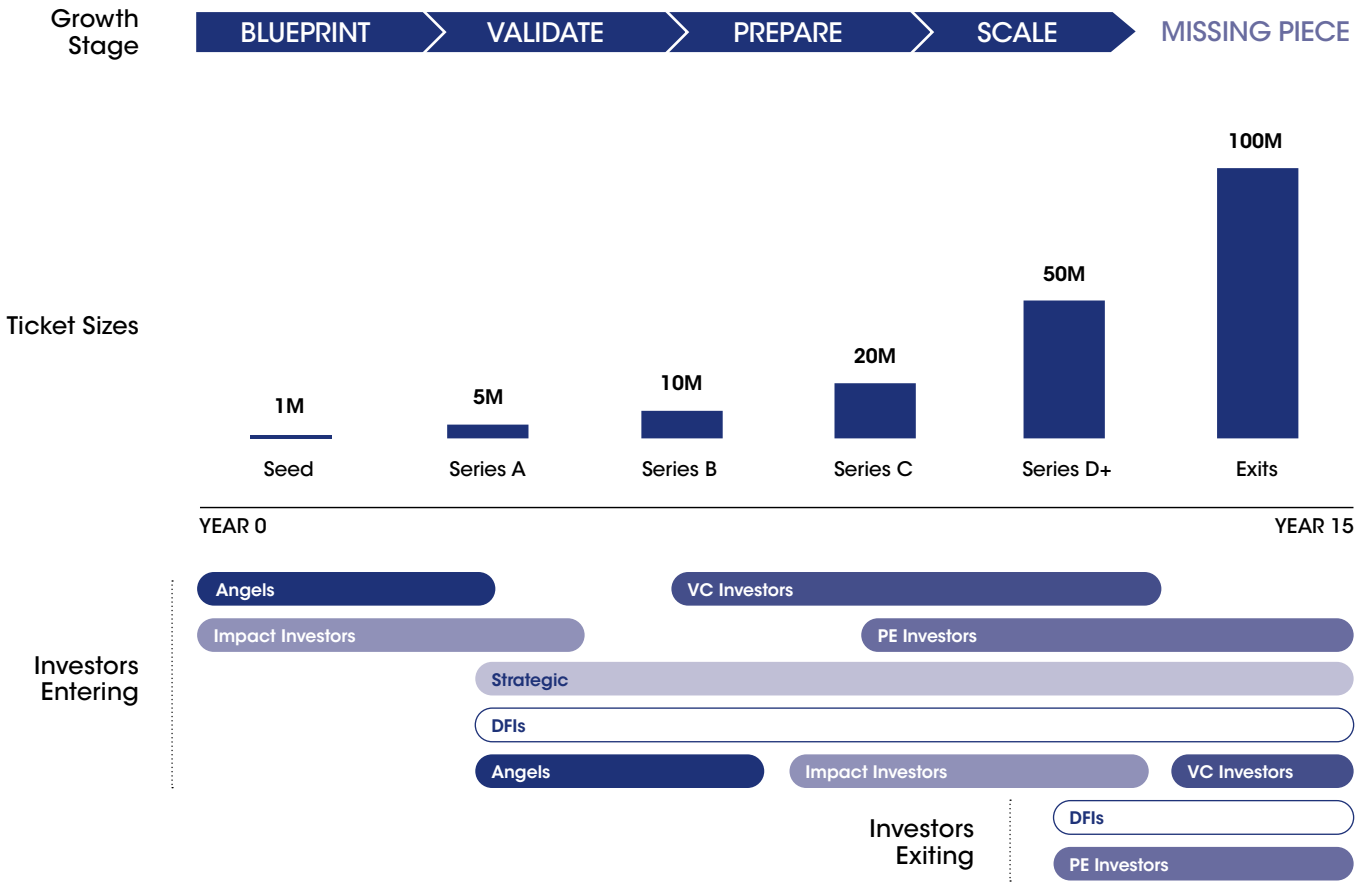


FIGURE 9
DRIVERS OF SECONDARY SALES IN OFF-GRID MARKETS

Gain ownership and control

Incoming investors may want to buy out existing investors to increase their share in the company and possibly gain more control over the company.

Pursue financial returns

Incoming investors can often negotiate a steep discount as has been possible in the past (15-20% is considered market rate).

Clean up cap table

Management may want to simplify the cap table to have few aligned investors in order to better manage the company.

high credit risk profile of off-grid energy customers and the complexity of business models, though this might change in time as companies become less vertically integrated.

FMCG companies could also be a future acquirer for off-grid companies, offering them an additional avenue to distribute products. Logistics and distribution companies may also want to take advantage of these companies' last-mile distribution networks to reach customers. However, the complexity of off-grid business models, especially the software and financing, could be a major barrier.

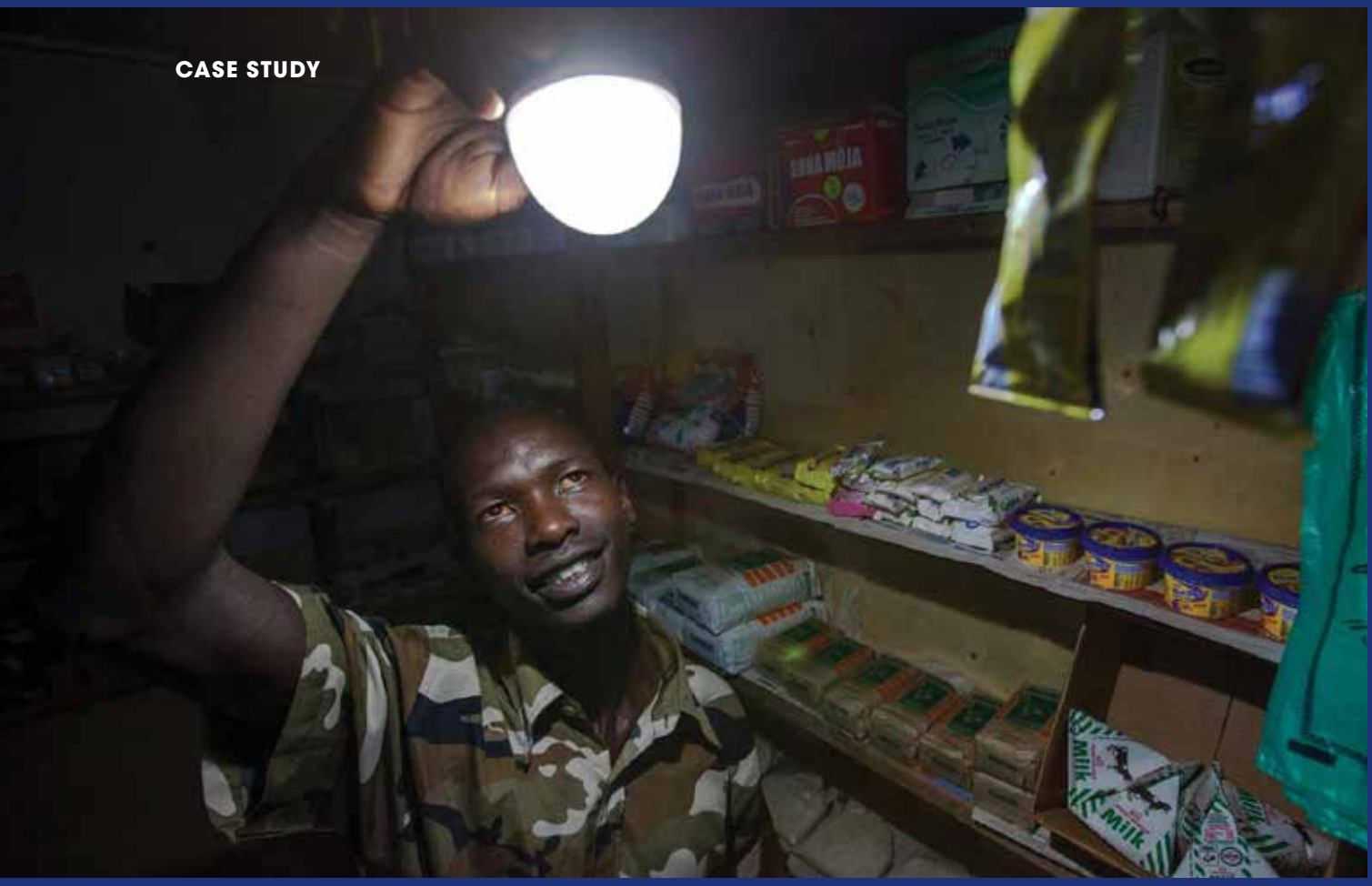
When evaluating potential acquisitions, strategic acquirers generally look for established companies with brand recognition, wide market penetration and a broad base of active customers. Financially, they also want to see positive cashflow, EBITDA and efficient use of capital for growth. There is a mismatch in valuation expectations between strategic investors, who value companies based on profit, and existing shareholders who believe they should be valued based on revenue multiples due to the sector's relative nascency. This can stalemate negotiations between the acquirer and its shareholders.

Challenges to Strategic Acquisitions

Given the relative size and unprofitable nature of many off-grid companies, there have been limited strategic acquisitions to date. Strategic acquirers tend to believe that large, well-established off-grid energy companies are overvalued and smaller companies have not reached enough scale to be of interest. Additionally, off-grid business models and the sector as a whole are complex, often differing significantly from the core capabilities of different strategic investors. This requires strategic investors to put in time and resources to fully understand the sector. While the sector has seen some strategic acquisitions and some corporates are making smaller equity investments, it has also experienced strategic investors withdrawing from transactions due to this complexity.

BBOXX

CASE STUDY



M-KOPA

How early-stage investors can benefit from secondary sales

Blue Haven Initiative, a US-based family office with operations in Nairobi, was looking for opportunities to invest in companies that used M-PESA, a Kenyan mobile money platform. Blue Haven identified M-KOPA as a potential target and teamed up with a consortium of the company's investors, led by LGT Venture Philanthropy, to make its first investment in off-grid solar in early 2015.

Unlike many impact investors, Blue Haven can make secondary equity investments. When the opportunity arose, Blue Haven invested additional equity into M-KOPA for a larger ownership stake and to clean up the cap table at the request of the entrepreneur. Additionally, the M-KOPA investment provided Blue Haven with an opportunity to make a significant financial gain by negotiating a steep discount and still maintain attractive multiples for Acumen, the seller of the shares.

As a result, Acumen was able to liquidate its early investment in M-KOPA and recycle the funds into other start-ups.

Recommendations to Boost Strategic Acquisitions

Early-stage investors could do more to involve strategic investors earlier in the lifecycle of off-grid energy companies to help them better understand business models and gain confidence in the sector. Given the increasing investment of strategic investors in off-grid energy, it is apparent that this is happening to some degree, but our consultations indicated that more could be done. In other capital markets, early-stage investors often build relationships with potential strategic investors and pursue co-investments with them in early funding rounds.

Off-grid energy companies targeting a strategic acquisition may want to manage valuations in earlier equity raises to avoid a misalignment between valuations, early-stage investors' expectations and prices strategic investors are willing to pay. Companies and early-stage investors could also focus on those KPIs important to strategic investors (e.g. profitability, revenue growth, geographic and customer reach and efficient capital use).

Secondary Equity Sales

Investors and companies think secondary equity sales are the second-most likely path to exits. Secondary sale in this report is defined as the purchase of shares from an existing shareholder that does not occur during a full acquisition. Investors believe it is too early to see a large wave of exits through M&A or IPOs, but secondary sales can lead to exits in the short term. Additionally, secondary sales, even those resulting only in partial exits, are a vital source of liquidity. They allow investors to recycle funds to other early-stage ventures. While creating a positive track record for exits in off-grid energy, secondary sales could also attract new investors and broaden the capital base.

Investors are motivated to make secondary investments to gain more shares and thus more control in a company, pursue financial returns, or streamline ownership. In some cases, early investors are willing to sell their shares at a discount to exit and return capital. In over-subscribed rounds, where interested investors outnumber the amount of primary capital sought, a secondary investment can be a way for new investors to purchase shares or for existing investors to increase their stake. Secondary buyers can be VC funds, private individuals, PE, investment banks or dedicated secondary sales funds. Lastly, strategic investors have shown a willingness to make secondary investments as a way of getting a foot in the door to better understand the sector.

FIGURE 10
RELEVANT KEY PERFORMANCE INDICATORS HIGHLIGHTED DURING CONSULTATION

Customer Acquisition Costs

The resources related to acquiring a new customer.

Average Revenue Per Customer

The amount of revenue that can be generated from one customer in a given period.

Utilization

How often customers make payments on an asset acquired on credit.

Cost of Capital

The cost of a company's funding.

Contribution Margin

How much a company's product or service contributes to its overall profits.

Collections Efficiency

How effective a company is at collecting outstanding receivables from its customers. This KPI is directly tied to the quality of its receivables portfolio.

Challenges to Secondary Sales

The amount of capital required for off-grid energy companies to scale has also limited secondary equity sales. Many early investors believed their investments would be enough to support companies to reach scale and profitability, but complex business models have taken longer to validate than anticipated. Hence, later-stage investors are still having to provide primary equity to support continued growth rather than using capital for secondary investments.

Pricing also plays a role in affecting secondary sales. Secondary equity sales often occur at sizable discounts to primary capital raises, meaning that early investors may be unwilling to accept secondary purchase offers when they do materialize.

Lastly, financial difficulties at high-profile, market-leading companies have had an outsized impact on deterring later-stage investors, including PE firms, from entering the market. These investors who could provide secondary investment become wary of an already volatile market. For example, Mobisol had received two rounds of investment from Investec, a commercial PE firm, but entered insolvency 18 months after Investec's first investment, likely limiting their enthusiasm to continue investing in the sector.

Recommendations to Boost Secondary Sales

Early-stage investors and off-grid energy companies need to shift from a "growth at any cost" mentality to focus on the business KPIs most important to later-stage investors such as PE firms. For example, the later-stage investors we spoke to cited a need for more transparency around operational efficiency and unit economics along with consistent reporting on KPIs to demonstrate an improving track record.

From an ecosystem perspective, DFIs could play a significant role in unlocking liquidity for early-stage investors to reinvest into frontier markets. However, DFIs find it difficult to make the impact case for secondary share purchases compared to primary investments that can be used directly by companies for growth. We believe there is a strong impact case to be made for secondary investments. Returning capital to early-stage impact investors, who have held investments in off-grid energy companies for many years to build the ecosystem, would allow these investors to provide early-stage capital to new players across the sector. This would help close the current equity gap for early-stage ventures, promoting DFIs' goals of job creation and sustainable economic growth.

Initial Public Offerings

IPOs are another path to exit that off-grid energy companies are considering in the long term, though investors are skeptical about their potential. During an IPO, a company offers shares to the public through a new stock issuance, opening itself to trading on public markets. Some off-grid energy companies are positioning themselves for IPO due to the large pools of capital, the lack of potential acquirers and the possible financial benefits for founders. Companies believe they can eventually achieve the scale and revenue growth that make an IPO feasible. However, investors believe that the barriers to an IPO, such as a lack of buyers for off-grid energy shares, high valuations, low interest from large exchanges in social enterprises and lack of exchanges that accommodate small, Africa-based companies far outweigh the opportunities.

Challenges to IPOs

Off-grid energy companies believe that IPOs are at least three to five years away because of challenges surrounding the sector and off-grid business models. IPOs are also generally uncommon for companies in emerging markets. The most recent high-profile example is Jumia, which listed on the New York Stock Exchange in April 2019. Despite initial excitement, the company's stock price has sunk more than 50 percent since May 2019 as its financials have come under increased scrutiny.[21] The off-grid energy sector also lacks a significant pool of potential buyers to make exchanges liquid, despite the interest from impact investors

to date. Finally, an IPO can be taxing on a company due to the costs to execute and the stringent reporting and budgeting systems required to be publicly listed.

There are few exchanges relevant for off-grid companies to make an IPO debut as the larger exchanges have limited interest. The few African companies that have achieved the scale necessary for an IPO prefer to list on the London Stock Exchange (LSE) over the Johannesburg Stock Exchange (JSE). Based on our consultations, the LSE, specifically its Alternative Investment Market sub-market, provides access to wider markets and had more similar "impact-oriented" companies listed compared to the JSE. These smaller exchanges have downsides, however. The Alternative Investment Market sub-market, for example, has lower liquidity on average for companies with a market cap larger than $200 million compared to the Main Market on the LSE.[22]

Recommendations to Boost IPOs

Off-grid energy companies that believe an IPO is within reach focus on a few key steps to achieve this goal. They diversify across geographies to hedge risk, create a track record of successfully financing receivables, roll out new products to reach new segments, and demonstrate their financial stability and predictability over several years. It is also vitally important that companies implement stringent reporting and budgeting systems to prevent Jumia's experience.

However, for any of these activities to be successful, companies need to first demonstrate that their unit economics are robust. Across the sector, there is a lack of proof points on unit economics, particularly in the PAYG space. Until companies prove their unit economics to investors and the market more widely, this will not only limit their ability to achieve IPOs but also receive investment more broadly.

Sector M&A

Sector M&A was an additional pathway to exit that came up during our consultations. Larger off-grid energy companies may purchase companies offering complementary products or services and/or operating in new geographies. We may see productive use companies acquired by large SHS companies aiming to add productive use appliances to their product offerings without conducting additional research and development. Off-grid energy companies may also purchase competitors in horizontal consolidation. More successful companies can buy out distressed rivals or purchase companies for geographic expansion rather than building out operations from scratch in a new market.

Challenges to Sector M&A

Horizontal consolidation so far has been deterred by misalignment on valuation. Many larger off-grid energy companies do not have the capital available to purchase smaller companies demanding high valuations. These larger companies have begun to shift towards valuation based on profitability metrics, while smaller companies still often value themselves based on revenue multiples. As a result, acquisition prices are too high for larger companies, even in circumstances when existing shareholders have agreed to discounts.

The companies we spoke to were skeptical about purchasing specialized companies for vertical integration, because they believed that they could build better and

more tailored solutions in-house. For example, some companies have attempted to provide software, but uptake has been slow due to the amount of customization and flexibility each energy company needs. An exception is Mobisol's acquisition of Lumeter, a software provider, where Mobisol sought to reach additional customers by offering a standalone software solution. It should be noted, however, that Mobisol later entered insolvency proceedings, although it is unclear what role (if any) the Lumeter acquisition played in Mobisol's later performance.

Recommendations to Boost Sector M&A

For off-grid energy companies interested in acquisition by a larger company, a focus on building strong operations in key geographies where larger players still lack penetration could be strategic. Many companies are discovering that building operations in-house in new geographies is costly and leads to many pitfalls as they try to adapt to different markets. As a result, many are considering purchasing smaller companies already operating in target geographies if the sale price is viable. An example is EcoEnergy's 2017 acquisition of Brighterlite's customer portfolio, which consolidated the two largest off-grid SHS companies in Pakistan. Alternatively, although companies have expressed skepticism towards M&A for vertical integration, smaller companies could specialize and demonstrate efficiencies in parts of the value chain such as distribution or after-sales support that have been especially expensive to operate for vertically integrated companies.

Share Buyback

Share buybacks are a final option for investors but they are not seen as a viable route to exit by our consulted investors or businesses. Share buybacks occur when a company repurchases a portion of its outstanding shares. Share buybacks can occur when companies want greater control over the direction of the business or want to offer investors a higher return if valuations are low. However, companies lack the cash for share buybacks and valuations are generally perceived as too high.

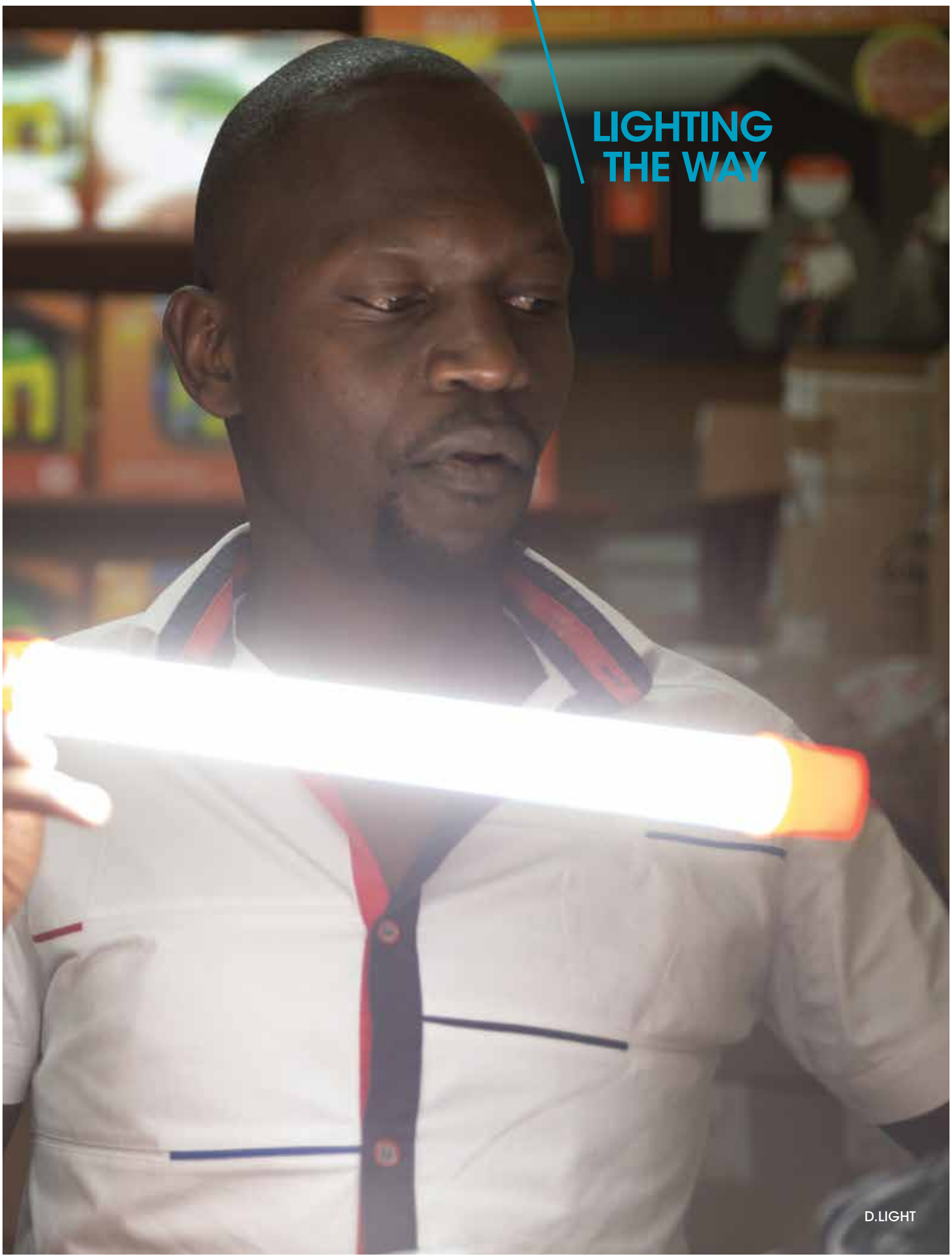
Pathways to Exit for Mini-Grid Companies

The mini-grid sub-sector is still young compared to the SHS sub-sector, which means exits may still be a long way off. Although the capital invested in mini-grids has increased significantly in recent years, with $250 million invested since 2010, mini-grid developers still lack access to infrastructure-priced, long-term debt. Most of the recent investments have been equity, and grants still support the viability gap in many markets. Parallels can be drawn to the challenges the SHS sub-sector initially faced with a lack of appropriate capital structures to support growth.

However, there is significant debate around whether commercial exits will ever be feasible for mini-grids. Because the business model is closely aligned to that of a traditional utility, many funders and developers believe that mini-grids lack a clear route to both scale and profitability without subsidies like those provided for national grid expansion, making them less attractive to commercial or strategic investors and unlikely for an IPO. Scale and profitability are challenging because mini-grids are geographically constrained to areas disconnected from the grid and densely populated and each new development faces high initial CAPEX requirements and a long payback period.

There is also still uncertainty regarding the compensation process for mini-grid companies when they are absorbed or displaced by grid expansion, limiting investor confidence in the sector. This potential "acquisition" by the national utility could result in a significant commercial loss for investors if fair compensation is not provided but it could also provide a route to a profitable exit if the appropriate policies are in place.

LIGHTING THE WAY



Recommendations

Companies

Companies need to continue building financial and operational credibility to overcome investor trepidation that stems from complex business models, a lack of exits and several recent high-profile failures. Underpinning these recommendations is an emphasis on balancing responsible revenue growth with achieving profitability.

1 Expand Geographically with Caution

While many later-stage investors value a large geographical footprint, this expansion can rapidly drive up operating costs. This is due to the difficulty in adapting an already complicated business model to serve customers with different needs in different markets with different infrastructure and regulatory environments. Off-grid energy companies need to ensure they maintain financial performance when entering new markets, potentially by leveraging partnerships with specialized companies (e.g. for distribution) or M&A with other off-grid energy companies. In addition, companies should conduct thorough market research to accurately measure the total addressable market of new geographies, assessing indicators such as mobile money penetration, cultural attitudes towards credit and fiscal regimes. The serviceable market for off-grid products has proven smaller than many companies expected, resulting in slower traction and even the withdrawal of some companies from markets. Spending appropriate time understanding customers in new markets through pilots will give companies a better chance at becoming EBITDA positive in these new geographies.

2 Craft an Exit Strategy Early

With a strategy in place, companies can align their focus and fundraising efforts with the most high-potential pathways to exit. While many companies we consulted could identify possible pathways, there was less clarity on the strategic decisions required to reach those goals. Companies should identify their most suitable paths to exit early in their lifecycles, identify the key metrics required and align strategic and fundraising decisions to meet that goal. For example, a private equity investor may focus on profitability while a strategic investor may focus on the size or location of the customer base and synergies with existing operations.

In addition to recommendations on how to achieve specific exits, we have broader recommendations for stakeholder groups who can facilitate exits and help build a more robust capital market.

Investors

Current investors can be proactive in developing exit strategies and experimenting with new vehicles to increase liquidity.

1 Develop and Execute Exit Strategies Early

Investors across the sector should be more proactive in developing and executing on exit strategies early for their off-grid energy investments. Due to the nascency of the sector, early-stage investors supported companies with limited line-of-sight to exits. Now that capital markets have begun to mature and we better understand the landscape of potential acquirers and secondary investors, impact and commercial investors alike can create realistic exit strategies. They can then align with their portfolio companies on the most suitable path and provide the strategic guidance to achieve that path by building relationships, tailoring business models for strategic acquirers, or focusing on the most relevant KPIs for target investors. Acumen's most successful exits to date have been secondary sales, and we continue to build relationships with potential secondary buyers. Some investors have also identified capital market and exit experts from other sectors to provide advice on exit strategies in off-grid energy.

2 Develop New Vehicles to Increase Liquidity and Recycle Capital

Capital providers with a keen interest in developing off-grid energy can create new vehicles to increase liquidity and recycle capital into the sector. Acumen is exploring how to structure an alternative financing vehicle to enable liquidity for our portfolio. A large amount of impact investment capital has been locked in existing off-grid energy companies for over a decade, limiting the capital currently available to create new products and test new innovations in distribution and financing. New, blended finance vehicles including capital from development partners, risk-taking high-net-worth individuals and commercial capital providers could allow early-stage investors to exit portions of their investments, freeing up capital to invest in other innovative off-grid start-ups. DFIs in particular can play a catalytic role in plugging this capital gap for the development of off-grid capital markets in line with their goals of promoting development.

The Wider Sector

Beyond off-grid energy companies and investors, industry associations, market facilitators, development agencies and governments could also do more to enable exits.

1 Make More Data Available

Actors throughout the ecosystem can support both companies and investors by improving access to data across the sector. There is limited publicly available data on the KPIs used to measure the commercial success of off-grid energy companies and even less for exits. An independent association, such as GOGLA, could regularly collect data and publish reports on trends, standardized metrics and benchmarks across operational KPIs. This would require companies and investors to share data openly, but increased transparency could greatly help existing investors and companies plan for exits. For example, MIX Market hosts data on the performance of microfinance companies and is utilized by more than 30 impact investors and DFIs.[23]

2 Develop a Standardized Valuation Process

Off-grid energy companies, particularly vertically integrated PAYG companies, are complex and stakeholders are still grappling with how best to value them. Aligning on methodologies to value these companies could decrease the risk of overvaluation and increase later-stage investors' confidence. Work to develop such a process could be initiated by market facilitators or development agencies in the sector in conjunction with leading market advisors.

3 Identify and Support Potential Later-Stage Investors

Development partners can promote exits by identifying and supporting later-stage investors as they enter the sector. Development agencies and foundations have long recognized the significant role early-stage impact investors play and supported them by funding advisory services to help them understand off-grid energy markets, identify investment targets and conduct due diligence on potential opportunities. However, similar initiatives do not exist for later-stage investors.

4 Facilitate Access to Local Currency Debt

There is a significant need for local currency loans to sustainably meet the working capital needs of off-grid energy companies and minimize foreign exchange risk. While some programs have emerged to develop the capacity of local financial institutions, much of this burden has fallen on off-grid companies. Development partners therefore can facilitate more growth capital and local debt by continuing to fund capacity-building programs for new capital providers. With access to local currency debt, companies can fund working capital needs without needing to take on foreign exchange risk. This risk is ultimately shared by the company and its equity investors. Reducing risk for potential equity investors by creating a strong local currency market for off-grid can help support a more robust capital market.

An additional theme that arose during our consultations was the potential need for subsidies to extend off-grid energy technologies to the poorest customers. The idea of subsidies is by no means new with national grid connections as diesel and kerosene are subsidized in numerous countries around the world. While subsidies in off-grid energy could play an important part in improving viability of the market, we believe exploring the effects of these market mechanisms warrants greater analysis.

Implication of Exits for Customers

SIMUSOLAR

Throughout this report, we have focused on the positive impacts of exits on the off-grid sector, but as an investor using capital to tackle challenges of poverty, we must also address the potential implications of exits on customers. While exits will benefit customers by mobilizing new and recycled capital to innovative start-ups and helping first-mover companies scale, exits are not without risks for low-income customers. To position for exit, some PAYG SHS companies are already increasingly driving profits through larger, more expensive systems or add-ons such as TVs or refrigeration. These products are well-suited for higher-income customers but promoted to all customer types including rural, low-income customers. Although the effects of this shift in product strategy are yet to be seen, it could drive unsustainable levels of indebtedness for vulnerable low-income customers and increases in default rates for companies, which would make profitability less attainable and push exit prospects further away. In addition, commercial investors who prioritize profits over energy access could potentially steer companies away from rural, low-income customers, especially first-time entrants on the energy ladder who have the highest cost to serve. As a result, measuring and monitoring customer willingness to pay, affordability and over-indebtedness as companies at scale come under new ownership with new investors is ever more critical.

If companies at scale and their investors prioritize higher-margin products and urban and peri-urban customers, it may jeopardize the progress in energy access to date. As companies and investors shift their focus towards profitable growth and position for more exits, they must also work to ensure reaching low-income customers remains a priority for off-grid energy.

Acumen's Conclusion

In 2007, Acumen made its first investment in off-grid energy. Since then, we doubled down, seeing that customers were reporting significant improvements in their quality of life, companies were attracting more capital and more people were gaining access to electricity. Energy access was the first sector with real potential to fulfill the promise the impact investing sector envisioned for social enterprises.

As we work to exit our earlier investments, we hope to demonstrate that investors can realize social and financial returns from companies that are serving low-income customers.

It is time for existing investors in off-grid energy, especially DFIs, to catalyze more exits and for investors and companies to shift their focus to scaling profitably.

BIOLITE

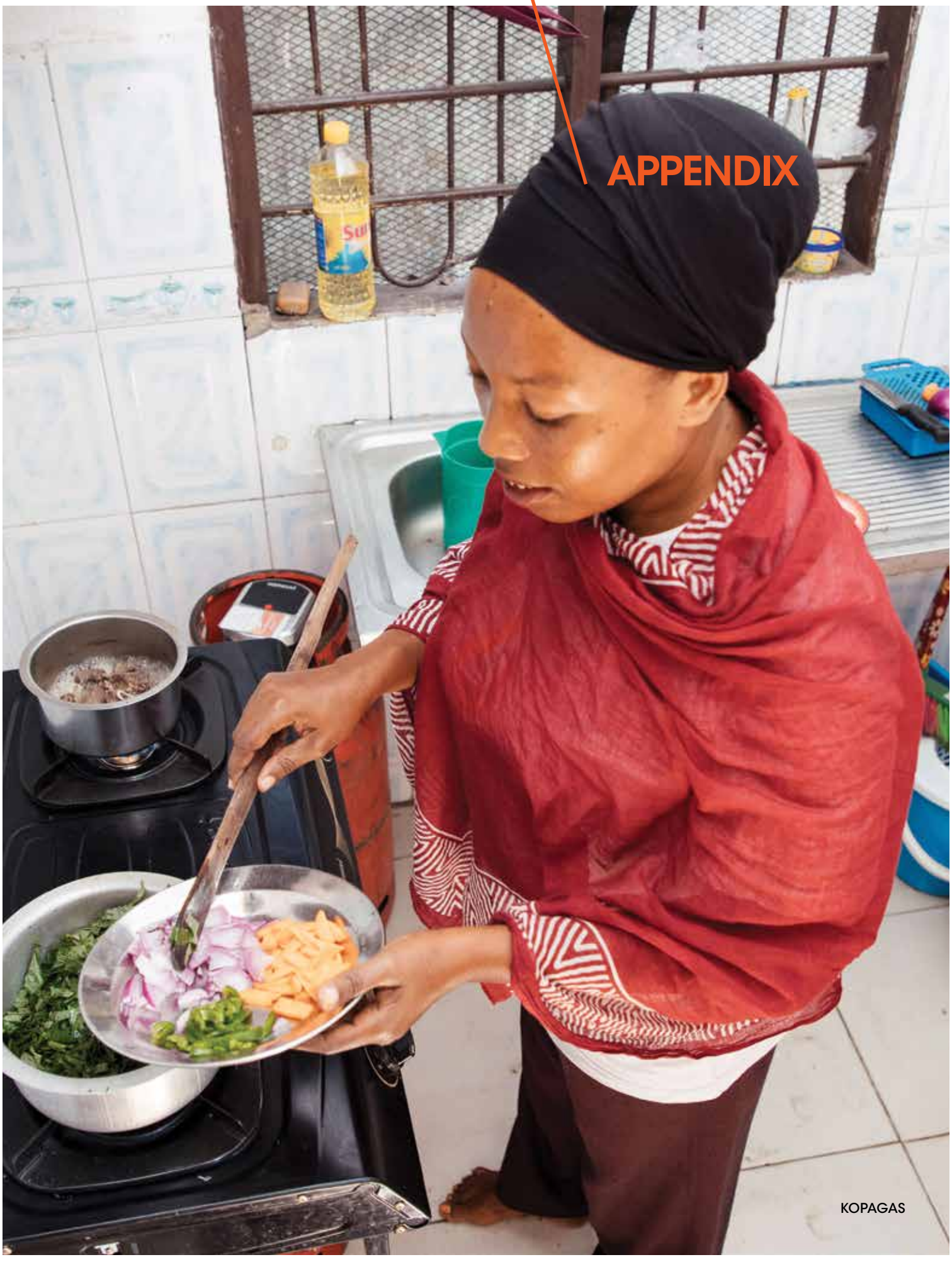
While it is still early for widespread exits, secondary sales will demonstrate that returns can be made in the sector. This trend will mobilize larger pools of untapped capital, support the development of a more robust capital market and provide liquidity for investors to support new start-ups with radical new solutions to accelerate energy access.

Companies and existing investors must also do their part by focusing on the right KPIs and achieving profitability to prove to later-stage investors that they are both impactful and commercially viable. They must also continue listening to customers which has never been more critical. Even after exiting these investments, Acumen is committed to elevating the voices of low-income customers to ensure they receive the same or better levels of quality service and after-sales support. Measuring and monitoring how companies perform under new ownership is part of the ongoing work Acumen is taking on as we exit companies in our own portfolio.

If we can solve some of the challenges around exits in the off-grid sector and create a robust capital market, we will see a knock-on effect throughout the impact investing and social enterprise ecosystem.

The recommendations and lessons learned in this report should also be applicable to other sectors, especially those that have not yet achieved the same traction. We hope our findings will catalyze new initiatives to facilitate exits across the impact investing sector in service of changing the way the world tackles poverty.

APPENDIX



KOPAGAS

Industry Stakeholders Interviewed

Consultations

+ Acumen: Alberto Gomez-Obregon, Carlyle Singer, Sachindra Rudra [former]
+ BBOXX: Anshul Patel
+ Blue Haven Initiative: Lauren Cochran
+ CDC Group: Emma Hawkins, Noorin Mawani
+ Ceniarth: Harry Davies
+ Clermount: Julien Deconinck
+ d.light: Ned Tozun
+ DOB Equity: Hayo Afman
+ DOEN Participaties: Michelle de Rijk
+ EKTA Partners: Yara Yazbeck
+ Energy Access Ventures: Paras Patel
+ ENGIE: Steven Fleurus
+ Fenix International: Joshua Romisher
+ Gaia Impact Fund: Guilhem Dupuy
+ Generation Investment Management: Matt Taylor
+ Clean Cooking Alliance: Peter George
+ KawiSafi Ventures: Amar Inamdar
+ M-KOPA: Jesse Zigmund
+ PEG Africa: Hugh Whalan
+ Persistent Energy: Dirk Muench
+ PowerGen: Sam Slaughter
+ responsAbility: Stefan Issler
+ Simpa Networks: Piyush Mathur
+ SunCulture: Samir Ibrahim
+ Total Energy Ventures: Girish Nadkarni
+ Zola Electric: Roeland Menger

GOGLA AGM Exits Workshop

+ Access to Energy Institute: Thomas Gottschalk
+ Blue Haven Initiative: Lauren Cochran
+ CDC Group: Geoffrey Manley
+ DOEN Foundation: Beau-Anne Chilla
+ FMO: Linde Lassche, Maite Pina
+ KawiSafi Ventures: Amar Inamdar
+ Lendahand: Tobias Grinwis
+ Persistent Energy: Dirk Muench
+ SunFunder: Avi Jacobson

Endnotes

1 2018 Global Off-Grid Solar Market Trends Report, Dalberg and Lighting Global, 2012-2017 and Strategic Investments in Off-Grid Energy Access, Scaling the Utility of the Last Mile, Wood Mackenzie and Energy4Impact, 2019.

2 2019 Tracking SDG7—The Energy Progress Report, IEA, IRENA UNSD, World Bank Group, WHO, 2019.

3 All ($) dollar amounts in this report are in U.S. dollars (USD) unless otherwise specified.

4 It is estimated that including non-disclosed investments, the true cumulative total is between $2.3 and $2.4 billion.

5 Strategic Investments in Off-Grid Energy Access, Scaling the Utility of the Last Mile, Wood Mackenzie and Energy4Impact, 2019.

6 $1.4 billion calculated as the total of $922 million between 2012 and 2017, and $512 million in 2018 alone.

7 2018 Global Off-Grid Solar Market Trends Report, Dalberg and Lighting Global, 2012-2017 and Strategic Investments in Off-Grid Energy Access, Scaling the Utility of the Last Mile, Wood Mackenzie and Energy4Impact, 2019.

8 Strategic Investments in Off-Grid Energy Access, Scaling the Utility of the Last Mile, Wood Mackenzie and Energy4Impact, 2019.

9 2018 Global Off-Grid Solar Market Trends Report, Dalberg and Lighting Global, 2012-2017 and Strategic Investments in Off-Grid Energy Access, Scaling the Utility of the Last Mile, Wood Mackenzie and Energy4Impact, 2019.

10 2018 Global Off-Grid Solar Market Trends Report, Dalberg and Lighting Global, 2012-2017.

11 2018 Global Off-Grid Solar Market Trends Report, Dalberg and Lighting Global, 2012-2017 and Strategic Investments in Off-Grid Energy Access, Scaling the Utility of the Last Mile, Wood Mackenzie and Energy4Impact, 2019

12 We assumed that the share of investment funding from 2018 through 2022 would be the same as in 2017 and that the investment needed in 2019 would not be lower than the $512 million required investment in 2018.

13 Strategic Investments in Off-Grid Energy Access, Scaling the Utility of the Last Mile, Wood Mackenzie and Energy4Impact, 2019.

14 Categorization of capital providers into blueprint, validate, prepare and scale are attributable to OCA's estimation using Switching on Finance for Off-Grid Energy, Bertha Centre for Social Innovation & Entrepreneurship and World Wildlife Fund—South Africa.

15 2018 Global Off-Grid Solar Market Trends Report, Dalberg and Lighting Global, 2012-2017.

16 While some VC and PE firms are also impact investors, the category used for "VC, PE and Strategic Investors" in this case relates to purely commercial investors.

17 Value of exits to date is based on data collected through consultations and the secondary research process. It is based on 12 transactions that were recorded throughout the process.

18 OCA consultations.

19 For the sake of confidentiality, we have replaced some company and investor names that have been involved in exits to date with descriptive terms.

20 Shell, Shell's Energy Access Business: Tackling Energy Poverty, https://www.shell.com/energy-and-innovation/new-energies/energy-access.html.

21 Jumia listed on NYSE at a share price of $14.50 and achieved a total raise of $196 million. The company chose the NYSE due to presence of long-term investors with a good understanding of its business model. Another notable motivation was increased company visibility on the world stage.

22 Liquidity—little understood, even before MiFID II, Hardman&Co, 2017, https://www.hardmanandco.com/wp-content/uploads/2018/01/hardman-co-article-liquidity-little-understood-even-before-mifid-ii-october-2017.pdf.

23 Stanford Social Innovation Review, What Every Good Microfinance Business Should Track and Why. Micol Pistelli, 2016, https://ssir.org/articles/entry/what_every_good_microfinance_business_should_track_and_why#.

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