ACUMEN
CHANGING THE WAY THE WORLD TACKLES POVERTY

Bridging the Gap

What We Learned from Pioneering the Next Wave of Energy Access

ACUMEN ENERGY
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Contents

Acknowledgments

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IKEA Foundation

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Executive Summary

Background

Energy access can transform the lives of low-income people, changing their daily experience from dangerous to dignified. In 2017, Acumen, with our 16 years of experience investing patient capital, knew that infusing more early-stage capital into innovative business models in the off-grid solar sector could expand the reach of these life-changing products. So we crafted the Pioneer Energy Investment Initiative (PEII) to narrow the sector's "Pioneer Gap": the early stage of growth where companies experience the greatest challenge attracting Seed and Series A equity financing.

With this five-year program, Acumen focused on three key objectives: to invest equity capital in these businesses and de-risk emerging business models; to support companies led by entrepreneurs who demonstrated a commitment to serving the poor; and to elevate insights from our early-stage investing in the sector. From 2017 to 2021, we invested $13.5 million into 12 companies delivering off-grid energy from renewable sources to low-income customers in India, East Africa, West Africa, and Latin America. Now that the program has concluded, we're sharing what we accomplished and the lessons we learned. As we look to the future, we will focus our energy strategy on deepening our impact on the lives of poor communities and shifting investment capital to very complex markets other investors deem too risky.

Key Takeaways

Across the energy access sector, at all stages of the venture life cycle, equity investing is still lacking. Before the PEII, the average annual investment in Seed and Series A was $16.6 million. That number has since inched up to $20 million, nowhere near the $210 million that Acumen estimates will be required to achieve universal energy access by 2030, the United Nations' Sustainable Development Goal 7 (SDG7)[1]. According to 70% of energy access stakeholders interviewed, Acumen is filling a critical early-stage equity gap. But our capital is insufficient: solving energy poverty will require more early-stage investors and funds to support the second and third wave of energy access companies.

This capital gap manifests differently in each energy access sub-sector we invested in. Solar home system companies are more established and have raised the vast majority of the available investment capital; however, the amount of equity raised still does not match the scale of the problem and the lack of profitability and exits of equity positions holds investors back. The mini-grid sub-sector has managed to raise sufficient early-stage capital, though these companies struggle to find large-scale project finance and government subsidies to expand their operations. Nascent Productive Use of Energy (PUE) companies are starting to seek the risk-tolerant equity and debt capital they need at the early stages of their business life cycle.

Energy access companies finance their consumers out of necessity, making cash management and credit expertise critical to their success. Keeping costs under control is the number one driver of success in companies' ability to continue delivering products and services to the poor while remaining financially sustainable and attracting follow-on investors. Active management of inventory, debt, and complex portfolios has proven to be essential for survival.

Investing in locally-owned companies in Africa requires intentionally correcting for structural imbalance. At the beginning of the PEII program, our partners challenged Acumen to invest in more local entrepreneurs. Most of our energy investments in Africa had been in companies led by expatriates and although many of them have carried out successful and impactful business models, we understood the need to tackle this systemic injustice. By the end of the program, 60% of our portfolio had a local founder. Nevertheless, we recognize the need to adjust our investment processes and explore instruments that retain upside value in local markets.

Acumen's impact risk paid off. Acumen said no to all but one transaction where the poverty focus of a company was less than our original benchmark of 30% of customers. According to PEII companies' CEOs, our focus on impact is the top factor that differentiates us from other investors. By the end of the PEII, our 12 companies reached over 1.25 million low-income customers with energy access and abated 110,000 metric tons of carbon. Going forward, we can take even more impact risk on business models that provide a pathway to increase customers' incomes while also abating carbon dioxide emissions to ensure a just and sustainable energy future.

Technical Assistance (TA) for early-stage companies is valuable and necessary but is not widely available. Acumen's flexible and demand-driven TA, where companies dictate what they want to focus on with the support of Relationship Managers (RMs), helped not only for solving complex parts of their business model but also for driving impact. This was most useful for companies that had recently received investment from Acumen (within the last 18 months) compared to companies that had been in our portfolio for longer and could draw on funding from other sources, including earned revenue.

The PEII Journey

Introduction

In December 2017, ten years after our first energy access investment into d.light, Acumen invested $300,000 into a small company that wanted to change how poor communities in Sierra Leone accessed energy. The company, Easy Solar, had less than 4,000 customers and was operating in a market riven by Ebola, mudslides, and the legacy of a civil war. But where others saw red flags, the founders of Easy Solar saw green lights. Four years later, they have built a sustainable company that has provided 569,000 people with clean energy. Yet when we made the deal, the second of our Pioneer Energy Investment Initiative (PEII), this was the kind of risk in a brand-new market that few were willing to take.

By 2017, the off-grid solar sector had found a pay-as-you-go model (PAYGo) that could scale household solar and a few clear leaders in that market. What it needed were more creative business models to push the bounds of affordability for the poor, expand into new geographies, and innovate around productive uses of energy. That deepening and broadening of the market required early-stage capital: We estimated that $210 million was needed annually to fill the sector's Pioneer Gap, Seed, and Series A requirements. But in the years 2013-2018, investments did not even reach 7% of that level.[2]

At that point, Acumen had recognized the transformative impact that energy could have on the lives of low-income people, and we saw an opportunity to drive more capital into off-grid energy access and build a robust sector. With the support of an incredible group of partners, we launched PEII, a $22 million effort to accelerate off-grid energy access by supporting the next wave of entrepreneurs serving the poor. PEII combined sector-wide stakeholder input with our financial and operational insights from a decade of investing in energy access. It was based on the premise that equity investments, unlike grants, would help create strong businesses with effective governance that could attract the kind of debt and follow-on capital needed to scale.

From 2017 to 2021, we invested $13.5 million[3] into 12 companies operating in 10 countries around the world (see Figure 1). Our investments were a mix of equity, loans, and convertible notes. We have exited one investment and our local teams continue to manage the other companies.

As the investment phase of PEII draws to a close, we wanted to take the opportunity to share what we have learned throughout the process and analyze what progress has been made against the problems that PEII was meant to solve: underinvestment in early-stage companies and innovative business models, as well as concentration of investment in select companies/geographies.

What We Set Out To Do

From its inception, PEII had three main objectives:

1. Invest in and thus de-risk emerging business models in risky geographies;

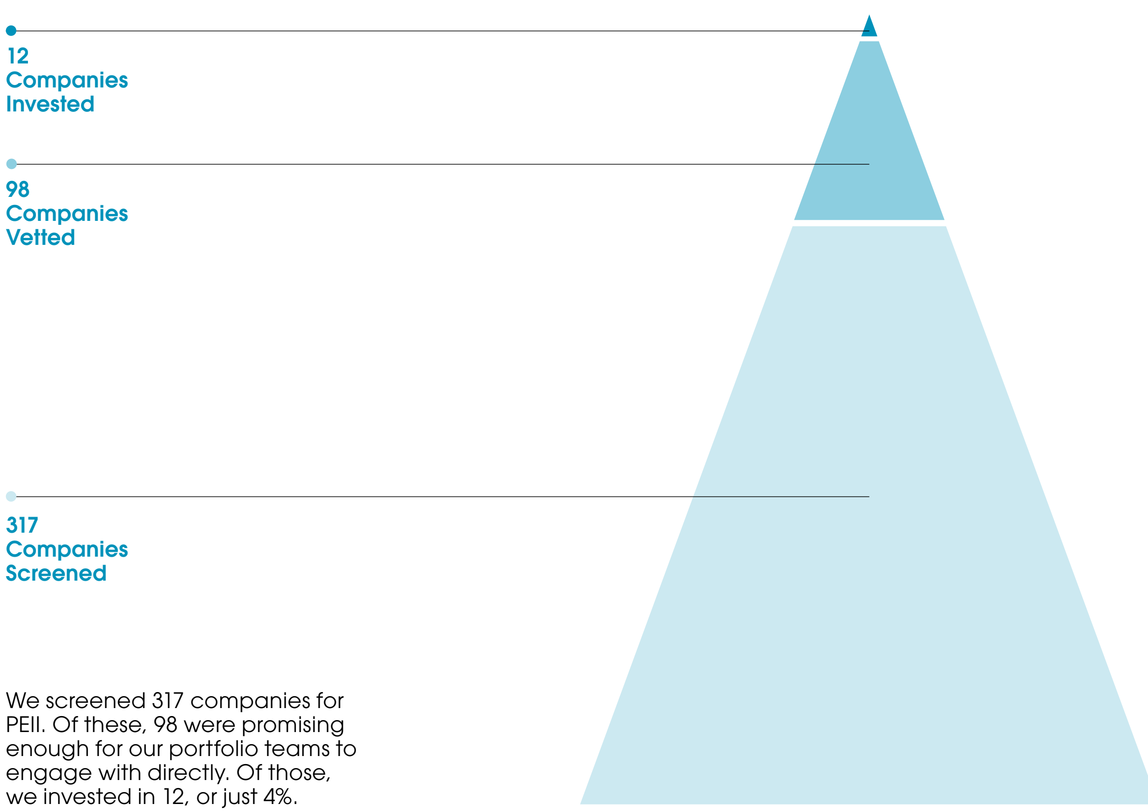
2. Support companies led by entrepreneurs with a commitment to serving the poor; and

3. Elevate insights from our early-stage investing through thought leadership in the sector.

In particular, PEII set forth to invest in the following pillars:

- Solar home system companies in new markets that offer standalone solar PV systems to power residential appliances and lights;
- Solar and hybrid mini-grids and enablers that provide small-scale off-grid electricity generation; and
- Innovations in productive use of energy: technologies powered by renewable energy, from mills and water pumps to sewing machines and food dehydrators.

FIGURE 1: COMPANIES REVIEWED SINCE 2017



We screened 317 companies for PEII. Of these, 98 were promising enough for our portfolio teams to engage with directly. Of those, we invested in 12, or just 4%.

Why We Said No

We were looking for early-stage companies with validated products or services, operating in Acumen's core markets: East and West Africa, India, Pakistan, and Latin America. Many of the reasons we declined to invest were simple: half the companies did not fit those requirements. Some were based outside our regions (e.g. South Africa). A quarter of prospective companies were pre-revenue.

Other requirements are more specific to Acumen. We invest "patient capital" that is philanthropically backed and meant to support businesses that cannot access alternative capital, and who serve poor communities that cannot access alternative products. Patient capital is scarce, so we focus ours where it can be catalytic and fill a clear gap. We passed on 44% of prospective companies because they did not serve poor people or their customers had access to similar products, making our capital less relevant for delivering first-time energy access.[4] Moreover, one sixth of our foregone deals had access to similar funding; they did not need ours. Lastly, a third of our passes were on companies with combative or unresponsive founders. Life's too short.

"I know Acumen well enough to know that they're thoughtful about their truly catalytic role. Acumen is very conscious of making sure that they're not crowding others out. Their capital is incredibly valuable because other similar vehicles get distorted or pulled in different directions and Acumen remains consistent and offers a lot more support beyond the funding." —Harry Guinness, Managing Director at Lion's Head Global Partners

Who We Funded and Why

Our first consideration was to support social entrepreneurs with a genuine commitment to the organization's impact objectives beyond the financial upside of scaling a startup. Geographic alignment and a demonstrated focus on poorer customers (as shown through Lean Data or their product mix) were non-negotiable. After that, we looked for demonstrated year-on-year growth in units sold or connections made, and a solid base of grants or early-stage risk capital that demonstrated an ability to scale and attract capital.

"I think (Acumen's investment) was really important because we were at an early stage of growth for a new business model. We didn't have that much traction in the new model. We needed an investor who was willing to be patient as we expanded that business model and really iterated on it. The timing of that was essentially perfect." —Jiten Ghelani, CEO at Promethean Power Systems

By the end of 2021, PEII companies had reached over 1.25 million customers with energy access, of which 40% lived under the poverty line (those living on less than US$3.20 per day). This was an increase from from the 30% of customers living in poverty that our PEII companies served when we launched the program and conducted our first investments in 2017. Through our investments, 110,000 metric tons of carbon had been avoided in emerging markets. Moreover, these 12 companies have leveraged our invested capital by raising an additional $128.4 million since 2017, which represents a multiple of 9.5x.

FIGURE 2: PEII PORTFOLIO BY REGION

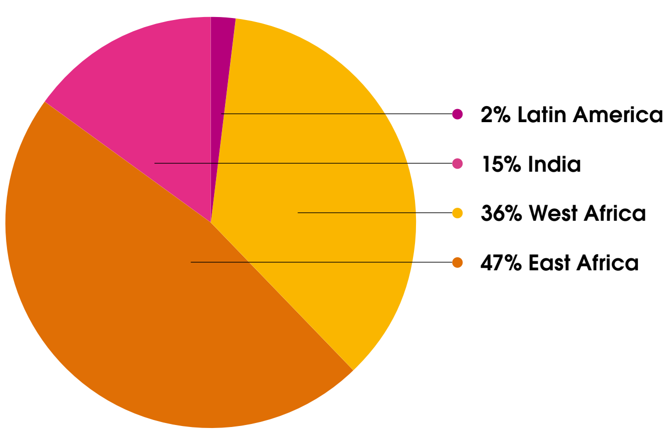
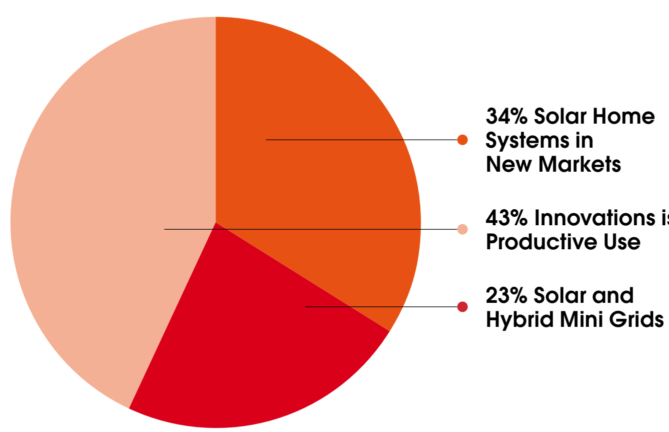


FIGURE 3: PEII PORTFOLIO BY SUB-SECTOR

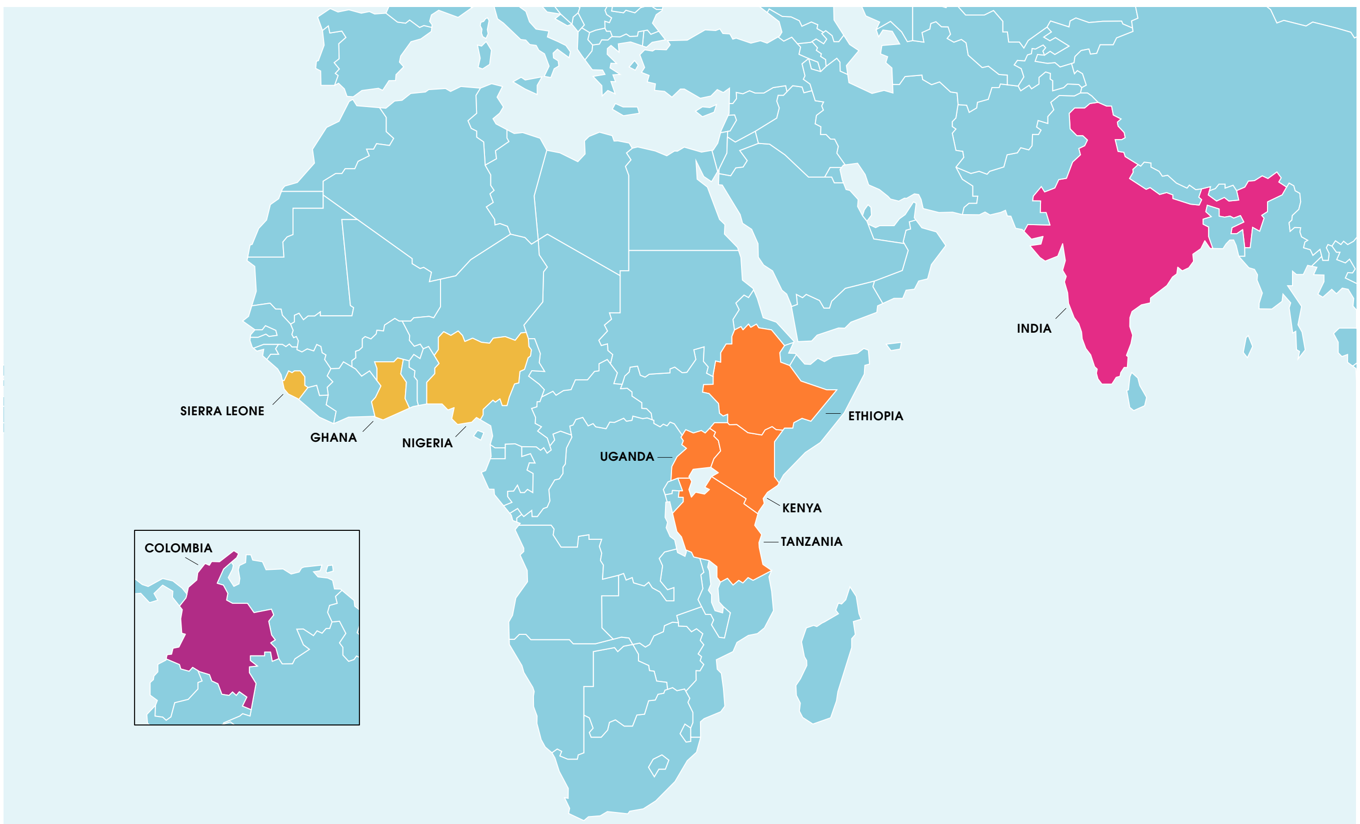


PEII Investments

Sub-Sector Portfolio Breakdown

Solar Homes System (SHS)	Productive Use of Energy (PUE)	Minigrids
Easy Solar	Simusolar	PowerGen
PEG Africa	KopaGas	RVE.SOL
Solaris	Winock Solar	
Soluna Energia	S4S Technologies	
	Promethean Power Systems	
	Koolboks	

Regional Portfolio Breakdown



LATIN AMERICA

Soluna Energia

WEST AFRICA

Easy Solar
PEG Africa
Koolboks
Winock Solar

EAST AFRICA

KopaGas
PowerGen
Simusolar
Solaris
RVE.SOL

India

Promethean Power Systems
S4S Technologies

PEII Timeline

2017

Acumen makes its first PEII investment in PEG Africa; Acumen adds Sierra Leone to its geographic footprint and invests in Easy Solar. The first Acumen Energy Summit is organized.

2018

Acumen makes its first East African PEII investment and first PUE investments in KopaGas and Simusolar; Acumen approves its first two PEII mini-grid deals and investment in India. Acumen publishes its Energy Impact report and its Accelerating Energy Access report. PEII Partner Trip to visit PEII companies in Kenya is held.

2019

Acumen disburses to PowerGen, RVE. SOL, and Promethean Power Systems and completes a bridge loan to Easy Solar. Acumen publishes its Lighting the Way: Roadmap to Exits in Off-Grid Energy report.

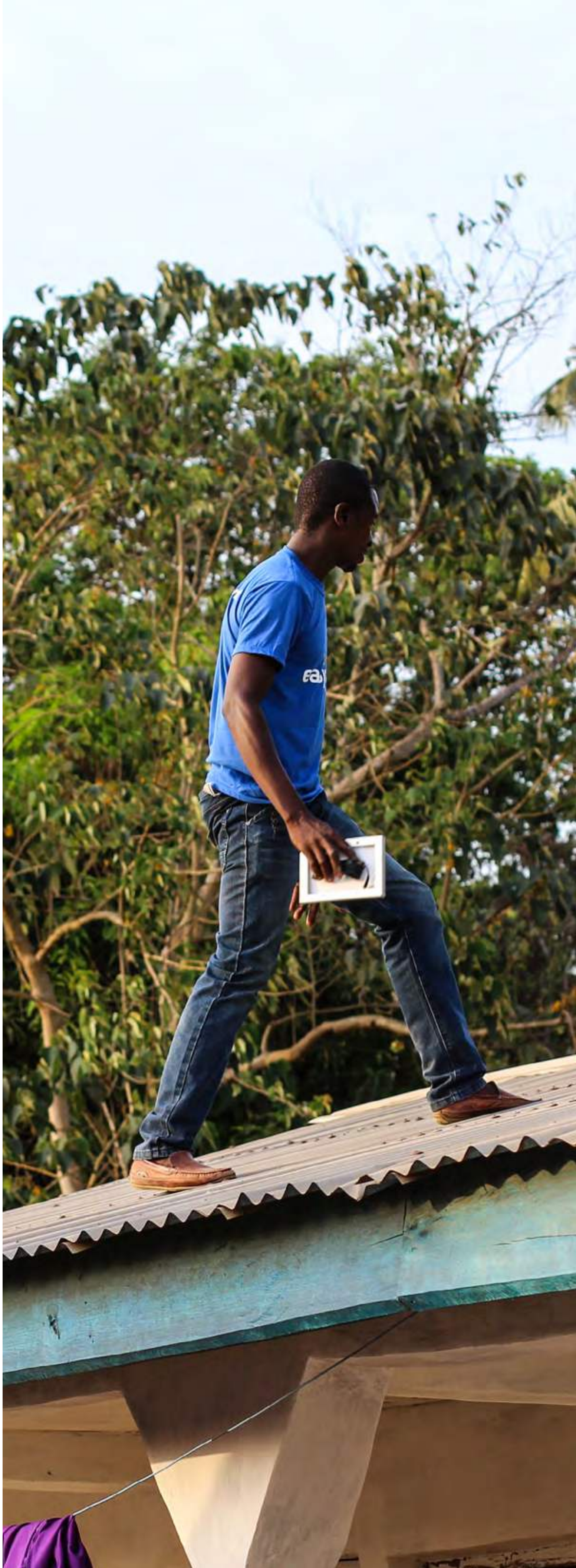
2020

The second Acumen Energy Summit takes place and the Why Off-Grid Energy Matters report is published by 60 Decibels, with support from Acumen. Acumen approves and disburses four new deals: Solaris, Winock Solar, Soluna, and S4S Technologies. Acumen approves a follow-on transaction to Easy Solar and two bridge loans to PEG Africa; Acumen seeks a one-year extension given the deal volume. Acumen leads sector-wide efforts on the Energy Access Relief Fund (EARF).

2021

Acumen completes four follow-on transactions: Easy Solar, RVE.SOL, PowerGen, and Simusolar. Acumen approves one new PUE portfolio company, Koolboks, and completes two bridge loans to PEG Africa. Acumen launches the Energy Access Relief Fund (EARF) and previews its research findings about investment challenges faced by local African entrepreneurs.

State of the Pioneer Gap



The Pioneer Gap Remains

We will start with the bad news. In 2018, we reported that $210 million was needed annually in Seed and Series A capital to close the gap to Sustainable Development Goal (SDG) 7: universal energy access. At the time, the average annual investment in Seed and Series A over the previous five years was just $16.5 million. Since then, based on GOGLA's investment database we've seen that number creep up to $20 million. Equity is woefully missing from the sector at all stages of a business's life cycle. However, we see this gap manifested differently in each sub-sector.

Solar Home Systems

There is some good news to be hopeful about. Access to capital has improved for Solar Home Systems (SHS) companies, especially compared to other energy access sub-sectors. More investors have gotten involved in earlier-stage transactions as larger companies begin to turn a profit. This is exciting news for the energy access sector, considering how much the landscape has changed in the past five years. In 2017, just $9 million in equity had been invested in West Africa's off-grid market. Since then, $93.5 million in equity has been invested. The average investment size in the sector has decreased from $2.3 million to $1.62 million, even as mature companies have closed increasingly larger deals. Median investment of $385,000 is now squarely in the $250,000-$1 million range required by Seed and Series A companies.

Unfortunately, a significant gap remains. The amount of equity still fails to match the scale of the problem, and early indications of the post-COVID era are grim. A lack of equity is, in turn, limiting the ability of companies to borrow. Lenders are wary of growing debt-to-equity ratios and growth is being stunted. Companies that should be pushing into new regions are instead running low on stock and running out of steam. While we have seen some early-stage funders enter the market, more investment is required to support SHS company growth and expansion into fragile, hard-to-reach markets. Half of the 759 million people still lacking power live in fragile and conflict-affected settings, and 84% live in rural areas.[5]

What is holding back additional equity? Three main barriers:

1. Trepidation around the business model: companies using equity to pay off debt rather than from cash flows

2. Lack of profitability at the company level, particularly when accounting for interest expense, bad debts, and depreciation

3. Limited exits from equity positions that result in a lack of liquidity

Providing early-stage equity is hard work. It is time-intensive to perform due diligence on companies that have never been through the process before. And growth is not guaranteed: These businesses are still operating in some of the world's toughest geographies serving low-income customers. The market has seen companies succeed, but also fail.

As we shared in our Exits report in 2019, Seed and Series A capital are only effective if there are later-stage investors to carry companies to scale. But opportunities to exit remain scarce, making it difficult to recycle capital and compensate limited partners. If this doesn't happen, it will be difficult to see SDG7 achieved by 2030, despite the promise of SHS companies. It's clear that we need to find new approaches to deploying capital to this sub-sector through creative financial instruments, utilizing both commercial and philanthropic capital.

Mini-grids

Mini-grids are capital-intensive and require larger investments along with more concessionary project-finance capital. Acumen's capital went to fund core operations of the mini-grid business, while our investees attracted the project financing dollars they needed from infrastructure investors like InfraCo, the World Bank, and EDFI. We found that mini-grid companies managed to secure early-stage capital but are struggling with growth (Series B and C) capital.

These struggles reveal a fundamental tension: Mini-grids are infrastructure plays, which may make them a poor fit for venture capital money. Getting the volume of connection fees to the point that companies are able to cover their high capital costs takes years, which often makes them dependent on tenders and government programs. There is a narrative that mini-grid companies are ready for more commercial growth capital,[6] which is at odds with the difficulties we see our companies face. The reality is that grid-level economics are often weak; connections do not pay for themselves for years.

More Results-Based Financing (RBFs) and grants are needed to attract investors to the mini-grid sector. There is hope on the horizon that more money will be forthcoming. According to the Mini-Grids Funders Group, 14 funders had approved a total of $2.1 billion by March 2020, of which only 13% had been disbursed. If the remainder of funds is disbursed and structured thoughtfully, we could see more mini-grid sites start to be developed. In the meantime, Acumen will continue to evaluate mini-grid companies, especially since mini-grids play a critical role in power provision for productive use assets in hard-to-reach locations. However, Acumen will likely only invest in mini-grids with a strong demand profile from commercial and residential customers using productive use assets to boost financial viability of the business model.

Productive Use of Energy

Productive Use of Energy (PUE) investments consumed a majority of our investment work and dollars, as we saw how off-grid appliances like dairy chillers, solar water pumps, and food dehydrators could power livelihoods and generate incomes. We also found that these companies are still deemed high risk and require significant investment. In the Efficiency for Access Investor Network, as of late 2021, just five of 31 energy access investors have made a PUE investment—including Acumen—despite 80% saying they intended to. All but Acumen and one other were investments with ticket sizes of less than $500,000.

Early on, our team recognized that you cannot successfully make PUE investments in agriculture, where PUE technologies are often applied, without understanding the relevant supply chains. As we assessed fruit and vegetable cold storage opportunities, dairy chilling solutions, and solar pumping companies, we had to develop a comprehensive model of the actors in each sector. This enabled us to understand how customers would engage with their appliances or assets in order to increase their yields, improve their inputs, or have higher quality products in marketplaces.

In 2020, most PUE companies saw sales volumes grind to a halt as demand and ability to pay, even for income-generating assets, suffered during COVID-19. This resulted in a growth rate for our PUE companies ranging from 9%-12%, which is modest compared to the upwards of 60% growth rate we saw with SHS systems. Challenges remain in hardware costs, distribution modalities, training on appliances, and go-to-market strategies for users, as well as asset financing. To realize the true potential of energy access, these must be addressed. In our portfolio, we've found that partnerships within the ecosystem are essential to scaling PUE investments. For example, Promethean Power Systems, a company producing off-grid rural milk chillers in India, works closely with local NGOs who aggregate and train smallholder dairy farmers in marketing their milk to companies that use Promethean's dairy chillers.

Lessons Learned on Impact

Drivers of Impact in Reaching Poor Communities with Energy Access

The impact of PEII is just beginning. We have funded 12 companies and will continue to support them to scale, become financially sustainable, and deliver energy access to tens of millions. Early returns are promising: As previously mentioned, by the end of 2021, PEII companies had reached over 1.25 million people with energy access. 68% saw a significant improvement in quality of life because of access to that energy product or service (above the 60 Decibels Energy Benchmark of 54%). And an average of 69% of PEII companies' customers reported accessing an energy product for the first time over the course of the program.

We will have more to say on impact in future years, but a few early trends are interesting:

40% of customers lived under the $3.20 poverty line. This was lower than we expected, and well under the 60 Decibels Benchmark. We believe that this could be explained by our portfolio mix, where PUE companies represent 50%. PUE products tend to be more expensive and have lower poverty reach, albeit with higher impact on incomes. However, we also believe that we and our companies can do more to reach lower-income customers. Our poverty reach has deepened over the last two years, from 30% to 40%, and we believe with more focus on affordability and inclusive products, we can reach more poor households.

Income generation has been lower than expected. Overall, 17% of customers are using their energy products for income-generating activities, below our internal target of 25%. Mini-grid customers saw the greatest percentage of customers using products or services for income generation. We believe this is also true of PUE companies, though for businesses with business to business to consumer (B2B2C) models (who sell their products to other companies that then serve low-income households) it was difficult for Lean Data surveys to access the end beneficiary, whose contact information was held by intermediaries. Going forward, our investment strategy will focus on PUE models that are designed to increase incomes and resilience in low-income communities.

Complex business models require new impact frameworks. Tracking customers' income changes over time requires knowing their baseline income and then being able to quantify the change caused by a product or service. Promethean Power Systems, for example, sells milk chillers to commercial dairies, which enables more dairy farmers to sell their milk to those dairies and increase their incomes. But tracking those trickle-down effects can require costly, time-consuming evaluations. We need to find a 'lean' equivalent for B2B2C models.

Raising more money does not translate into 'breadth' of impact. Rather, what seems to drive an ability to reach more lives is the affordability and inclusivity of the product mix. Companies that sell products that are affordable and have payment options within reach for the poor are more likely to drive impact from a "lives reached" and "first-time access" perspective.

Comparing impacts of mini-grid and SHS models showcases the challenge of measuring depth vs breadth. Acumen was drawn to the mini-grid models because of their strong poverty focus. According to 60 Decibels, the mini-grids serve the highest proportion of low-income families compared to other off-grid energy providers, with a poverty reach of 51%.[7] But while mini-grids have demonstrated an outsized ability to serve the poor from a percentage perspective, the absolute number of connections and people served by mini-grids pales in comparison to that of SHS models. Our first two PEII investments in SHS companies reached 4.8x more people than our mini-grid companies over the same period. This makes sense given the difference in models: SHS companies are selling and financing consumer products, while mini-grid companies are building durable electricity infrastructure, which can cater to a wider range of consumer uses over a longer period of time. There is a tradeoff.

Impact is not static. More commercial investors may ask for higher margins that require companies to shift to less inclusive products. Our focus is then on maintaining impact over time. Acumen has found that if we provide follow-on investment to a company and maintain our influence with a vocal board member, as we have done with earlier investees, there is more opportunity to influence the poverty focus of the company.

Insights From Our Investment Process

Lessons from Evaluating and Investing in Early-Stage Energy Enterprises

As we looked back into our processes of investment and accompaniment—including post-investment support and hands-on guidance on business strategy, governance, customer insights, and fundraising—as well as the financial performance of our companies, we identified several lessons learned that are now essential for Acumen's investing work in the energy access sector. We believe other investors might also benefit from these insights.

Providing early-stage capital means doing due diligence on companies that have never received institutional funding before. For PEII, we evaluated the quality of companies' offerings, looked at the capacity of their staff, and worked to understand their visions for the future. A few findings stood out from the PEII investment process:

Incorporating Lean Data into due diligence was a game-changer. The PEII marked the first time that Lean Data was incorporated systematically into the due diligence process of Acumen's investments. Prior to investing in a company, we surveyed between 50-150 customers to ask about the company's product or service, the difference it had made in their lives, and whether they would recommend the company to others. We also asked the customers about themselves to understand their situations, expectations, and experiences.

Added together, the responses were invaluable in understanding the breadth and depth of impact that enterprises had on their customers, as well as those customers' satisfaction (or lack thereof). For example, when evaluating an investment with a solar distributor operating in remote areas of East Africa, we learned that 41% of their customers already had access to similar products, making our investment in this company less impactful and catalytic from a first-time access perspective. Moreover, 52% of customers reported experiencing challenges with the system. Without this customer-level knowledge, Acumen might have invested its precious patient capital into a company that delivered only marginal impact.

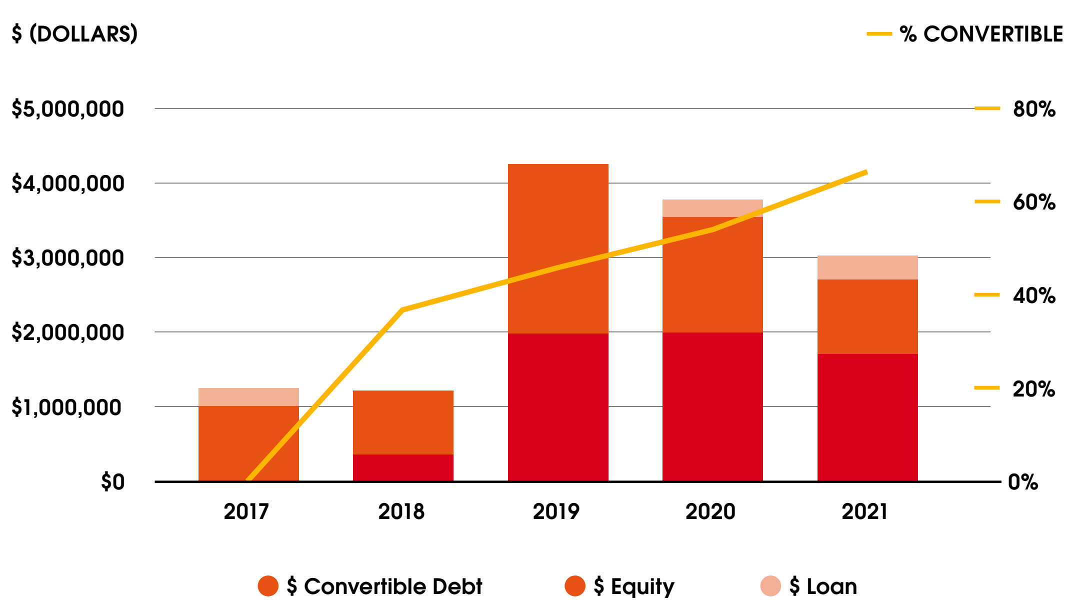
We continue to use Lean Data for tracking impact. This is not only useful for us: Companies receive customer feedback on a scale they have never seen before. In fact, 88% of the CEOs who received a Lean Data report found it valuable to their business.

The most important factor is also the most subjective: character. In early-stage companies, financial metrics and margins are hard to measure and harder to trust. More important is understanding what customers think of the product, the vision that the entrepreneur has for the company's future, and, crucially, the entrepreneurs themselves. As the PEII program advanced, Acumen re-learned the importance of evaluating a founding team's intangibles: leadership, values, openness to governance, and commitment to improving the lives of poor communities. However, these are difficult qualities to assess during the transactional process of due diligence.

To counter that, we leaned harder on our Country Leads and Portfolio Managers: people on the ground who knew the context and had interacted with the entrepreneurs. Our Portfolio teams have also established closer linkages with our Fellows program, where they have a chance to observe entrepreneurs' character over months and years. To date, PEII has invested in one company led by an Acumen Fellow—S4S Technologies, co-founded by Acumen India Fellow Nidhi Pant—and may explore investments in more Fellow-led firms in the future.

Valuation can be a sticking point. Entrepreneurs have, on average, overvalued their company in early-stage negotiations by about 30% from where the final valuation lands. This is not unique to the energy access sector. CEOs are strong negotiators, but often are not basing valuations on market data, which is largely unavailable due to the nascency of the market with few comparable businesses. Given the time that diligence takes and the imprecision of early-stage valuation, we increasingly deferred these negotiations by investing through convertible notes, which eventually made up half of our invested capital (see Figure 4).

FIGURE 4: CAPITAL EVOLUTION THROUGHOUT PEII



We needed to adjust our processes to invest in locally-owned companies.
In 2018, we committed to building a more inclusive portfolio and recognized that, in Africa in particular, local entrepreneurs face more challenges accessing capital compared to expat founders in the same region. Acumen has operated an office in East Africa with regional Portfolio Managers since 2006, because we have always valued our local teams' proximity to the work and communities which strengthens their ability to diligence and execute investments.

As we operate locally, we are also aware of how Venture Capital (VC) funds are excluding locally-owned businesses in Africa. Reducing those inequities will, as others have argued, require investors to take on more risk and surrender some of the power that we are accustomed to holding. That means exploring instruments that retain upside value in local markets, such as self-liquidating equity investments, being more transparent on timelines, and holding ourselves accountable to those timelines. It also means accepting that early-stage local entrepreneurs may not always be ready to answer every question we have.

There is not a simple solution. We are doing our utmost to scale down our templates, make questions context-specific, and share questions as early as possible. At the same time, we are building up founders' capacity to handle market-standard deal terms. This will only help in future financing events. When commercial investors come along, they will be ready.

In the end, of our total PEII portfolio, 60% have a local founder in their leadership team and three of the four investments approved in 2020 are led by local entrepreneurs. None of this would have been achievable without locally-based investment teams, who have lived with the problems we were trying to solve.

Financial Performance

The Business of Market-Building

Since 2017, we have had front-row seats to the evolution of many early-stage companies. By analyzing the financial performance of each of our PEII companies, we have been able to glean insights as to what it takes to grow a sustainable company that maintains a focus on low-income customers.

Follow-on Capital

We were the first equity investor in 69% of our transactions, but Acumen's signaling power is strong. Of the eight deals we did prior to 2020, all of them raised follow-on capital from external investors. PEII companies have raised an additional $128.4 million from our $13.5 million (follow-on capital leveraged = 9.5x) and counting.

Follow-on investments and bridge loans from Acumen were needed faster and more frequently than we expected. We followed on in 38% of our companies, while over 50% requested this type of funding. This speaks to the capital intensity of these business models, the unmet need for working capital in some markets, and the importance of cash management. We allocated $2 million per company to get through the Pioneer Gap when it appears that to truly get these companies to more institutional funders, $2.5 to $3 million may be required.

As we highlighted in our 2019 report about the shortage of exits in the energy access sector, capital markets in these countries are shallow and later-stage investors remain on the sidelines watching for proof points. Though we have seen a few examples of development finance institutions and impact investors making earlier bets on promising young companies with breakthrough potential, there is generally limited willingness among investors to either take more impact risk or purchase secondary shares from earlier-stage investors.

"I think in leveraging funds and companies, Acumen cracked the model. On the funder side, Acumen made people join hands. The way Acumen structures its funding— how to do due diligence and follow on—is very effective."
—Yue Cui, Director, Signify Foundation

Cash Management

One of the reasons so much follow-on investment was required is that these business models require high upfront costs, especially PAYGo business models. Salaries, staff headcount, R&D, and office costs all weigh heavily on organizations with lean margins, and a strong cash management is required from the start.

In our experience, the most important and difficult areas to maintain strong cash efficiency are:

1. Using ownership/equity as compensation to attract talent at reasonable levels

2. Optimizing full-time staff and agent headcount in line with productivity

3. Maintaining a small country footprint until profitability in that market has been achieved

When companies could not do that, sub-optimal cash management manifested in a few ways:

- There was a much higher number of bridge loans required than expected because capital costs are high and cash runway reserves are difficult to maintain. Even well-established companies with a decent track record have had severe cash crunches. Therefore, we recognized the need to factor these cash needs into our investment expectations and include them in our budget for future energy programs.
- At any given moment, less than half of our portfolio has cash coverage for 12 months. Companies are in a constant fundraising cycle; capital is always needed sooner than expected.
- As with all business models, keeping operating costs stringently managed is a key component to achieving profitability. Our SHS companies have had operational expenses to revenue (OpEx:Rev) ratios surpassing 50%. Only when companies got this to 20%-30% did we start seeing profitability.
- In our portfolio, we have seen that companies with lower OpEx face fewer cash crunches and have had an easier time expanding to new geographies. One earlier-stage company began more rigorously tracking productivity of its agents, and was able to shrink its OpEx to Revenue from 71% to 26% while growing its sales and establishing a new country office.

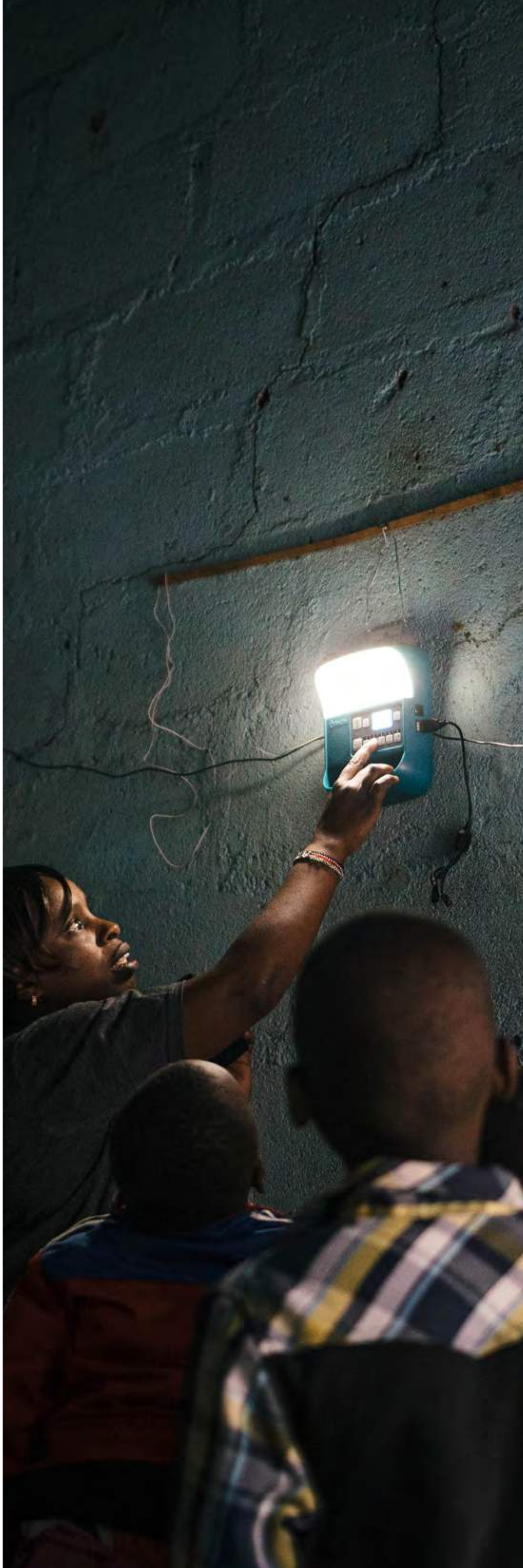
Portfolio Management and Post-Investment Support

Early-stage Investing is a Full Time Job

Acumen's patient capital approach does not stop at investing. Our portfolio team members dedicate substantial amounts of time supporting portfolio companies with talent, strategy, governance, customer insights, and fundraising to help its companies grow and scale. Furthermore, technical assistance grants are offered when a company is about to embark on a high-risk project that has outsized financial or impact potential.

Technical Assistance

Technical Assistance (TA) for early-stage companies in the energy access sector is valuable and necessary but not widely available. Since 2017, Acumen has given $448,000 in TA grants to eight PEII companies for 26 unique projects. Funds were used to build systems, conduct surveys, and hire different kinds of advisors, from independent consultants to larger consulting firms, that were carefully selected depending on the business needs.[8]



We surveyed companies on their use of TA,[9] and found that the most effective TA projects were with companies that were new to our portfolio (i.e. we had invested in the last 18 months) and where the company shared the costs of the project with us, typically at 50%. Sharing costs led to companies being more accountable for the outcomes of the project. Allowing them to choose their own consultants also led to better results.

Companies newer to our portfolio proved to have more clarity on their short-term vision and urgent needs. They were also more malleable, able to take on special projects that can result in large-scale change for the direction of the companies' operations and ability to serve the poor. One SHS company decided, based on a TA project, to adopt a salary deduction sales program for government employees. This now makes up over 50% of their sales.

Governance and Support

Once an investment is made, Acumen assigns each new portfolio company a Relationship Manager (RM). RMs help with fundraising, evaluating talent, and finding the right product-market fit. They provide input on corporate governance, strategic finance, and impact measurement. They also offer coaching on management, setting up partnerships, and establishing and working with an effective board of directors.

In addition to the RM, Acumen secured a Board Director or Observer seat for all 12 transactions. Of the 12, seven were Board Director seats. Out of seven investees interviewed, five said that Acumen's role on their board was very valuable, mostly because of Acumen's high engagement in the business and our combination of sectoral knowledge and strategic guidance. The fact that Acumen board members share their contacts and are willing to help however they can are also valued components. However, four CEOs noted that Acumen board membership has changed unexpectedly, which hinders our effectiveness.

Conclusion

Conclusion

The role of patient capital, backed by philanthropy, is to create markets where they do not exist. For established models like PAYGo, this means helping existing companies to enter fragile markets and helping local enterprises get the capital they need. For less-established models like productive use of energy (PUE), it means experimenting with different instruments and partnerships to unlock growth.

At the same time, we need to recognize the limits of patient capital. Investing early-stage equity in emerging markets is expensive work with tremendous impact, but we have nowhere near enough of it. If donors, foundations, and other impact investors are serious about achieving SDG 7, it will require taking more impact risk and resetting expectations for what accompaniment and returns should look like. Creating strong companies is a long journey; it won't be achieved with one-off investments.

Lastly, without the trust and support of our PEII partners, Acumen would not have been in the position we were in March 2020 to inspire the Energy Access Relief Fund (EARF), an unprecedented concessional debt fund with a target of $90 million to help energy access companies weather the economic crises set off by the COVID-19 pandemic. Leveraging the partnerships we had built over the last four years, Acumen, a relatively small nonprofit, played a leading role in convening stakeholders and drumming up investment for the EARF. This global coalition of 16 governments, foundations, and investors was launched in September 2021 with a first close of $68 million to protect energy access for at least 20 million people in sub-Saharan Africa and Asia.

"A normal commercial investor would be like, 'Oh, your main revenue source has just been shut down indefinitely. That is a very high-risk proposition.' But Acumen carried on. They essentially said, 'We believe in you, your team, and your mission and we're going to carry through with our intent to invest'—and they did."
—Michael Kuntz, Co-Founder and Co-CEO of Simusolar

Looking Ahead

Our Future Energy Strategy

As we look to the future, we know that to end energy poverty and address climate inequality, we need to build pathways for the poor to participate in the clean energy transition. Realizing that goal requires both deepening our impact on the lives of the poor and shifting investment capital to very complex markets other investors deem too risky. Without innovative financing models designed specifically to serve low-income communities, as well as partnerships with corporations, foundations, investors, governments and nonprofits, we risk leaving millions out of the green economy. Our future energy strategy is designed with those customers in mind.

Powering Livelihoods Using Solar

Building on our learnings from PEII, we confirmed that PUE companies can bring deep social impact gains by providing a means to diversify income-generating activities and help build climate resilience. We also learned that the PUE ecosystem remains pre-commercial with very limited amounts of investment capital flowing to support its growth. Pioneering productive use enterprises need patient capital to scale operations, provide consumer financing, and streamline distribution to boost affordability and accessibility.

This is why in 2022, Acumen is launching PEII Powering Livelihoods Using Solar (PEII+) to leverage our 15 years of investing experience in energy and agriculture to supercharge productive use technologies, a critical component in the global energy transition. PEII+, a $25M investment initiative, aims to demonstrate the power and possibility of replicating and scaling up PUE technologies and business models in sub-Saharan Africa and South Asia. Recognizing the nascency of this sub-sector within the energy access ecosystem, from 2022-2026, we will make early-stage investments in around 10 new PUE enterprises and explore utilizing innovative financial instruments beyond equity where appropriate. Acumen's accompaniment and impact measurement approaches will also be reconstituted to better serve these earlier-stage companies.

Creating a financially viable ecosystem to develop and distribute these technologies can drive resilient agriculture, financial inclusion, and workforce development. When all of these essential ingredients work together, we will begin to see low-income communities thrive.

Investing in Hardest-to-Reach Markets

After 15 years investing in the energy access sector, we have also recognized that while off-grid enterprises have made enormous progress in delivering energy access to low-income customers, the sector needs to significantly step up its efforts in hardest-to-reach markets.

Business-as-usual grid extension and market-based solutions are expected to reach 524 million people by 2030, roughly 66% of the unelectrified, who are largely located in favorable markets. However, innovative off-grid solutions must be scaled rapidly to reach the remaining 34%. It is estimated that 215 million people who could afford off-grid solar systems will be left behind because they live in risky or remote, rural areas where investors have been unable or unwilling to go. A further 50 million people are "ultra-poor" and will only achieve access with subsidies from aid or government intervention.

Thus, Acumen's energy strategy includes a new initiative designed to drive universal energy access by incentivizing and de-risking off-grid solar expansion into the hardest-to-reach markets.

The target geographies will be sub-Saharan African countries with high poverty rates and electrification rates at or below 45%. Through this new initiative, we aim to provide millions with clean and affordable energy access, adopting an approach that is faster, more inclusive, and more equitable than any other solution that exists.

Endnotes

[1] Acumen, 2018: Accelerating Energy Access: The Role of Patient Capital https://acumen.org/wp-content/uploads/Accelerating-Access-Role-of-Patient-Capital-Report.pdf

[2] Acumen, 2018. Op. Cit.

[3] Does not include the additional $1.2m invested as follow-on for energy access companies in our existing energy portfolio or Acumen's investment in the Energy Access Relief Fund.

[4] We learned this information during due diligence through Lean Data, an approach to impact measurement that focuses on speed, repeatability, and comparability through the use of short phone and SMS surveys to businesses' customers, employees, and beneficiaries. This tool was developed at Acumen, then spun out into a separate company, 60 Decibels, in 2018.

[5] IEA, IRENA, UNSD, World Bank, WHO. 2021. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC.

[6] David Lawrence. Investors Forecast Bright Future for Mini-Grids in Africa. IFC Insights. https://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+and+events/news/insights/africa-mini-grids

[7] 60 Decibels. Why Off-Grid Energy Matters. 2020.

[8] Acumen has a strategic partnership with firms such as EY and Bain that are engaged on specific TA projects when requested by the company. In some instances, entrepreneurs prefer using a local consultant with market context, which is at the entrepreneurs' discretion.

[9] We received survey results from seven portfolio companies addressing 15 unique projects and $168,000 of TA grants disbursed.

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