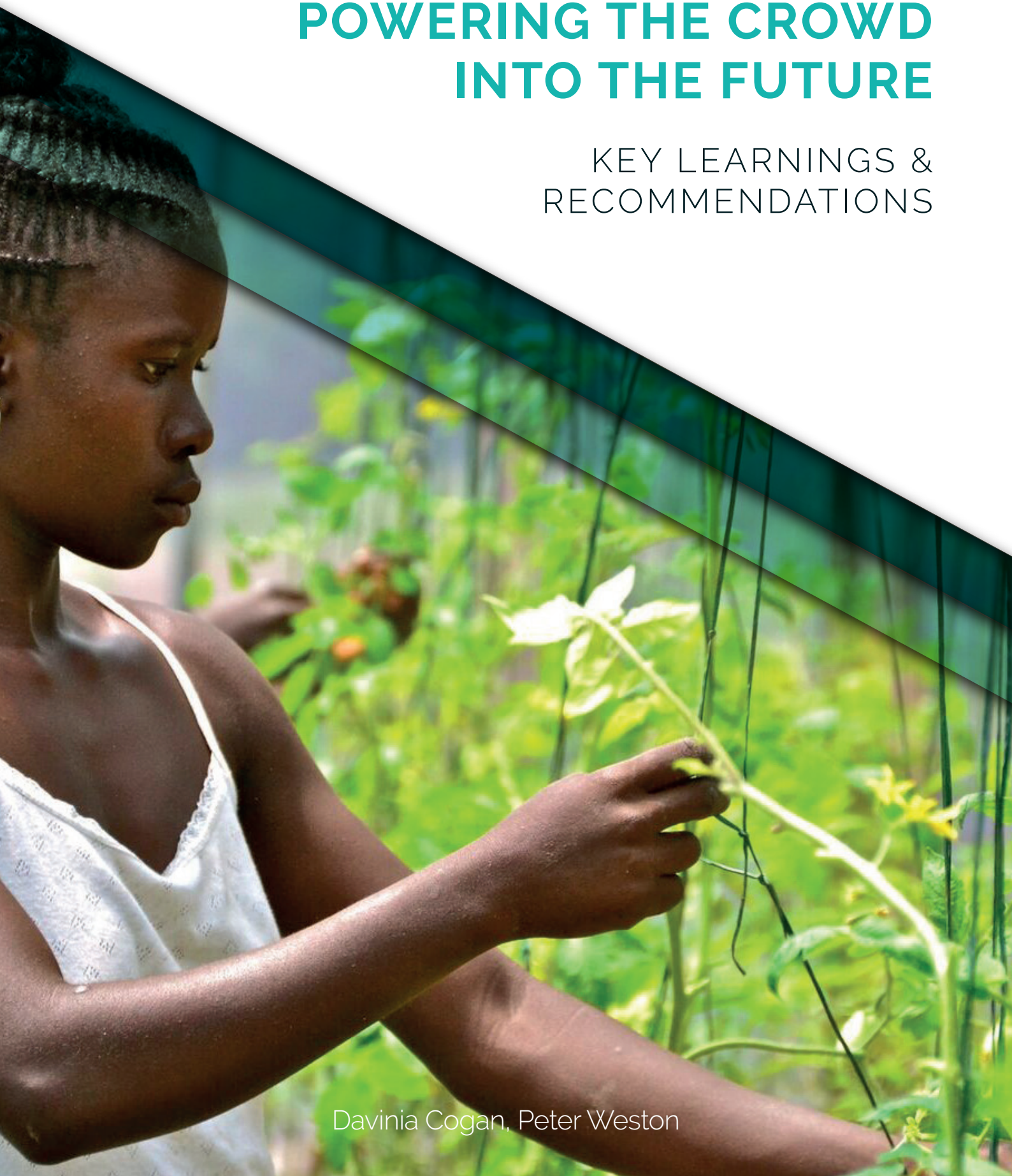
ENERGY4IMPACT

ACCELERATING ACCESS TO ENERGY

POWERING THE CROWD INTO THE FUTURE

KEY LEARNINGS & RECOMMENDATIONS



Davinia Cogan, Peter Weston

POWERING THE CROWD INTO THE FUTURE
KEY LEARNINGS & RECOMMENDATIONS
FOR ENERGY ACCESS CROWDFUNDING
AND P2P LENDING

CONTENTS

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BIOS

Davinia Cogan

Davinia Cogan is the Programme Manager of Crowd Power at Energy 4 Impact. She runs the UK aid funded programme, which explores the role of incentives to stimulate donation, reward, debt and equity crowdfunding in the off-grid energy sector in Sub- Saharan Africa and South Asia. Davinia is also a Research Affiliate of the Cambridge Centre for Alternative Finance at Cambridge Judge Business School. Davinia joined E4I in 2013 to help launch their business advisory team in East Africa, and managed the rollout of a USAID funded programme bringing pay-as-you-go solar to Rwanda. Prior to joining E4I, Davinia completed a Microfinance fellowship in Tajikistan, with Kiva, and worked as a consultant to non-profits and social enterprises including the Social Stock Exchange in London. She held positions in investment management at ING Australia before moving out of the mainstream finance sector. She holds a MA in International Studies from the University of Sydney and a Bachelor of Business (Finance, International Business) from the University of Technology Sydney.

Peter Weston

Peter Weston is the Director of Advisory Services at Energy 4 Impact. He manages a team of consultants that advises off-grid SMEs in Sub Saharan Africa and helps them to implement new business models and technologies. He is an expert in power, renewables and off-grid energy, with over 20 years of experience as an investor, lender and strategic adviser, much of it in developing countries. He is a non-executive director of Thrive Renewables, one of the first crowd-funded investors in small-sized renewable projects in the UK, and a Board Member of Renewable World, an NGO which alleviates poverty in developing countries through Micro renewable projects. Prior to Energy 4 Impact, Peter was global head of finance and investment for two power equipment suppliers: Siemens Wind Power and MAN. He led the European energy lending team at GE Capital and was an executive director at Westdeutsche Landesbank. Peter has a BA in Economics and Politics from the University of Warwick.

EXECUTIVE SUMMARY

Powering the Crowd into the Future is the fifth and final report in the Crowd Power series and captures the key learnings from three years of research into crowd-sourced financing for energy access businesses and projects. The report captures three years of data, from 2015 to 2017, on relevant campaigns. We provide recommendations for future research and interventions focused on crowd-sourced financing for energy access related businesses and projects. Data demonstrates that crowd-sourced financing for energy access businesses and projects has grown substantially – from $3.4 million in 2015 to $13.7 million in 2017. We anticipate similar growth trends reflected in 2018 data.

Over the course of the three-year research period under Crowd Power we have identified six archetypes relevant to businesses and projects crowd-sourcing finance. The six archetypes include **non-investment based models**, where funders do not expect to receive a financial return,[1] as well as **debt and equity based models**, where funders can reasonably expect a financial return. In general terms, crowdfunding models are considered higher risk than debt based models. It is important to note that we provide an explanation of the most orthodox version of each archetype and that in reality models may differ from platform to platform. The archetypes we identify may or may not reflect their legal definition as per the platform's resident financial regulator.

Over the course of the three-year research period under Crowd Power we have identified six archetypes relevant to businesses and projects crowd-sourcing finance.

Archetype	Model	Platform type	Application to the energy access sector	Amount raised
1 **Partnership Model**	Non-investment based	Donation	Non-profits raise funds to supplement fundraising, through recurring campaigns	$5,000 – $30,000
2 **One-off Fundraiser**	Non-investment based	Donation, Reward	Non-profits & businesses raise funds for a specific goal or milestone from family and friends	$5,000 – $50,000
3 **Mega-campaign**	Non-investment based	Reward	A business raises funds, often in the form of pre-sales, to support a specific milestone, from a wide, engaged network	$100,000 – $500,000
4 **P2P Microlending**	Non-investment based	Debt	Micro-entrepreneurs or consumers raise funds for working capital or an asset purchase. Often facilitated by a MFI or other financial intermediary.	$20 – $2,000
5 **P2P Business Lending and Online Debt-based Securities**	Debt based	Debt	A business raises a working capital loan (often in tranches). The platform conducts due diligence on the borrower.	$10,000 – $1 million, per campaign
6 **Equity Crowdfunding**	Equity based	Equity	Business raises investment capital from equity platform members, which receive shares.	$500,000 – $1 million

We find that each archetype is unique and that growth trends are mixed across the six archetypes. P2P Business Lending and Online Debt-based Securities is the fastest growing archetype, blooming from less than $100,000 in 2015 to almost $10 million in 2017. P2P Microlending also grew steadily over the period, with around 47% year-on-year (YoY) growth. The Partnership Model, a type of Donation Crowdfunding, grew at similar rates over the period. The Mega-Campaign and One-off Fundraiser, common to Reward Crowdfunding platforms contracted by an average of 58% from 2015 to 2017. There were no energy access Equity Crowdfunding campaigns in 2017, reflecting the lumpy and inconsistent nature of equity crowdfunding for energy access businesses.

Note

While this is the final report from the Crowd Power programme, the programme will be moving into a second phase – Crowd Power 2 (CP2) – in the coming months under the UK aid funded Transforming Energy Access (TEA) programme. TEA is a £65 million ($83 million) five-year project designed to support early stage testing and scale up of innovative technologies and business models that will accelerate access to affordable, clean energy services for poor households and enterprises, especially in Africa. UK aid continues to support the Energise Africa impact investment platform in the UK, which facilitates loans to energy access businesses operating in Sub-Saharan Africa.

INTRODUCTION

This report is the final in a series of five reports on crowd-sourced funding for energy-access businesses and projects. **Powering the Crowd into the Future** refines the key takeaways from the Crowd Power programme. Part 1 highlights market growth trends, Part 2 considers the key crowd-sourcing models relevant to off-grid energy businesses and projects, Part 3 explores the role and impact of interventions by philanthropic funders in the space, and Part 4 gives an overview of Crowd Power and learnings from the programme. Since 2015, Crowd Power has supported over 250 campaigns to raise $4.6 million in funding for energy access businesses and projects.

Part 1 examines trends in crowd-sourced financing over the three years from the beginning of 2015 to the end of 2017. We use data compiled from a range of sources including non-investment, debt and equity platforms – GlobalGiving, M-Changa, Pozible, Kiva, bettervest, Energise Africa, Lendahand, TRINE and Crowdcube – and a data aggregation platform, TAB. We also utilise our own data compiled over three years of research.

Crowd Power has supported over 250 campaigns to raise $4.6 million in funding for energy access businesses and projects.

Archetype	Model	Platform type	Case Study	Country
Partnership Model	Non-investment based	Donation	TAHUDE Foundation	Tanzania
One-off Fundraiser	Non-investment based	Donation, Reward	Rafode Solaris Offgrid	Kenya Tanzania
Mega-campaign	Non-investment based	Reward	n/a	n/a
P2P Microlending	Non-investment based	Debt	Emerging Cooking Solutions	Zambia
P2P Business Lending and Online Debt-based Securities	Debt based	Debt	Simusolar Azuri Technologies	Uganda DRC, Kenya, Rwanda
Equity Crowdfunding	Equity based	Equity	TRINE	Kenya, Sweden

Part 2 of the report is dedicated to understanding the six campaign archetypes relevant to energy access businesses and projects. These archetypes represent the common features we observed among successful energy access campaigns over the past four years and include: The second section of the report explores each of these archetypes by asking **what** are they, **how** much can be raised using them and **who** are they suitable for? For each archetype we include a case study of a business or charity that used the archetype to crowd-source finance.

Part 3 of the report captures our learnings on the role and impact of interventions designed to support energy access businesses and projects to crowd-source financing. There is still much to be discovered in the area of interventions and their impact; Crowd Power really just scratched the surface of our understanding. This section examines the four incentive types we deployed during Crowd Power and shows their different applications across the six archetypes:

1. Match funding
2. Lump-sum contributions
3. Gift vouchers
4. First-loss guarantees

Part 3 concludes with learnings from the programme and recommendations to funders on future research and interventions.

Part 4 of the report shares the progress and achievements of the Crowd Power programme, which wrapped up in mid-2018. We also share an update on the future direction of our work in energy access crowdfunding as we announce the second phase of the programme – Crowd Power 2 (CP2).

It is worth noting, for the purposes of this report we capture data on crowd-sourced finance for energy access businesses and projects, which occurred on relevant non-investment, debt and equity platforms. Our focus is on platforms that facilitate 'citizen capital' transfers – in the form of donation and investment – rather than platforms that, primarily, facilitate investment for institutional and accredited investors. While initial coin offerings (ICOs) are an important and burgeoning form of capital raising and have been leveraged by energy firms globally (including some operating in an off-grid context), they are beyond the scope of this report.

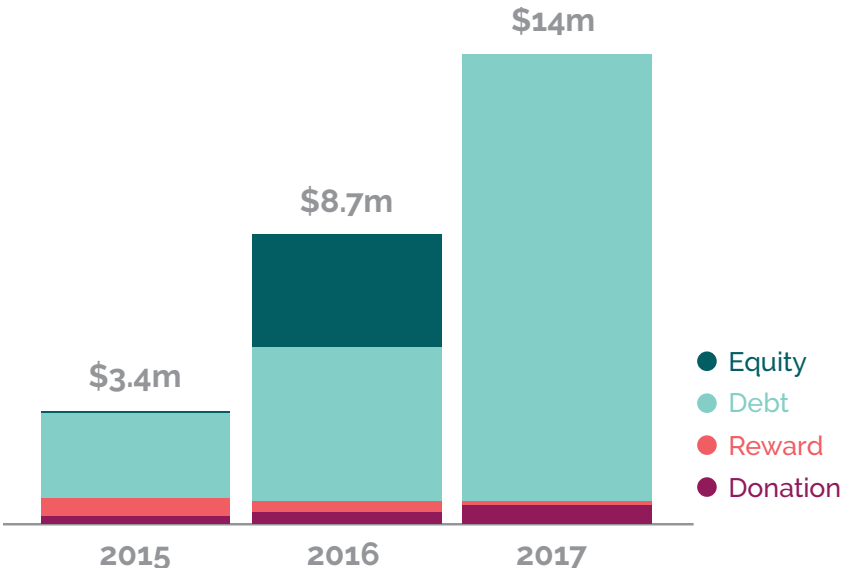
STATE OF THE MARKET

The first comprehensive analysis of crowd-sourced financing captured the state of the market in 2015, when non-profits and companies raised $3.4 million through non-investment, debt and equity models.[2] By 2016, the market had grown to $8.7 million and in 2017 energy access related campaigns raised $13.7 million. While we are yet to compile figures for 2018, we know the total amount raised by energy access related campaigns in the first 6 months of 2018 exceeds the annual figure for 2017. It is clear that crowd-sourced finance is increasingly popular for energy access businesses and projects and the market is growing rapidly.

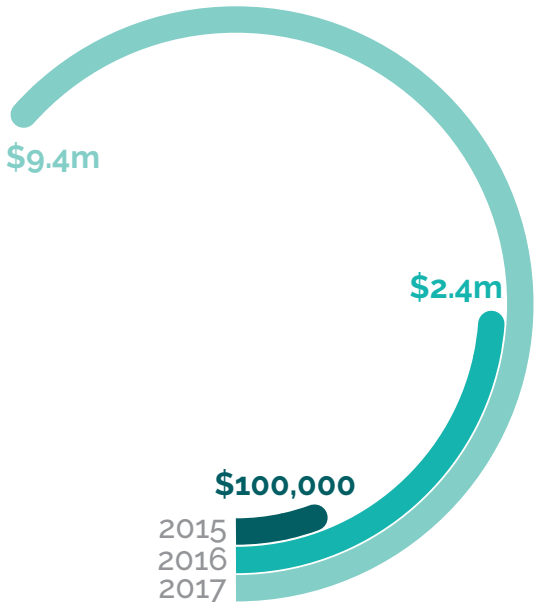
Debt models are fast emerging as viable financing options for a range of energy access companies and projects and accounted for 96% of all crowd-sourced financing raised for energy access businesses and projects in 2017. P2P Business Lending and Online Debt-based Securities are changing the financing landscape for energy access businesses, particularly for those operating pay-as-you-go (PAYG) models with high working capital requirements. Businesses utilizing P2P Business Lending and Online Debt-based Securities report that loan amounts are substantial, costs are competitive and fundraising is fast; there is an additional benefit that it diversifies funding sources for borrowers.

Growth rates are promising; however a more granular perspective on market dynamics is critical to understand the nuances of this market. For starters, not all growth is created equally. Debt based models, which include P2P Microloans, P2P Business Lending and Online Debt-based Securities, are the fastest growing within the energy access space. Debt models grew five-fold from 2015 to 2017, from $2.5 million to $13.1 million respectively. P2P Business Lending and Online Debt-based Securities raised $9.4 million for energy access businesses in 2017, and raised $4.8 million in 2016. Much of this growth can be attributed to a surge in working capital finance provided on P2P Business Lending and Online Debt-based Security platforms such as Kiva, bettervest, Energise Africa, Lendahand and TRINE.

Crowd-sourced Finance for Energy Access Trends 2015 – 2018



P2P Business Lending and Online Debt-based Securities Trends 2015 – 2018



P2P Business Lending and Online Debt-based Securities | 2017 By Platform

Platform	Total Raised
TRINE	$2,412,606.50
bettervest	$2,332,546.00
Energise Africa	$2,160,750.00
Lendahand BV	$2,056,067.42
Kiva DSE	$390,000.00
	$9,351,969.92

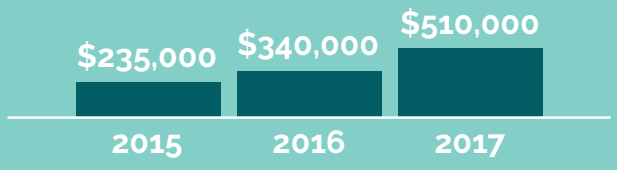
P2P Microlending also grew substantially, from $2.5 million in 2016 to $3.7 million in 2017 (48% year-on-year [YoY] growth). Almost all energy access related Micro-lending activity was on the Kiva platform.

Energy access related Donation Crowdfunding grew steadily over the three years since we began tracking activity, with average YoY growth of 47%, and approximately $500,000 raised in 2017. Donation Crowdfunding remains a small percentage of overall crowd-sourced financing activity, accounting for 4% of funds raised.

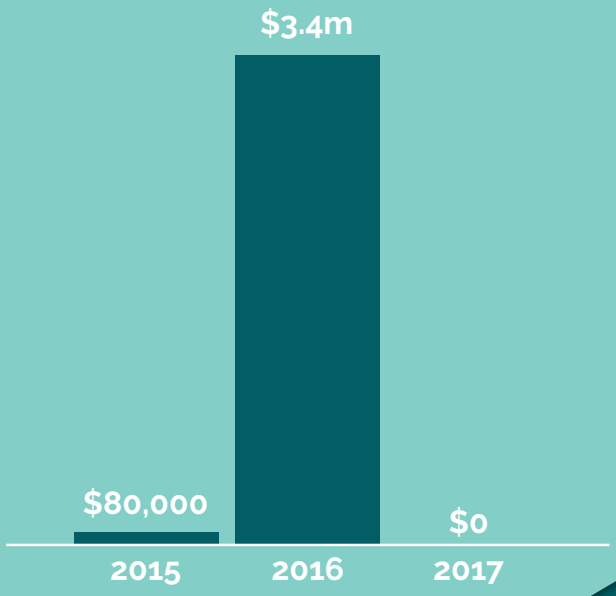
In contrast, Equity Crowdfunding contracted during 2017. Not one energy access business raised equity via Equity Crowdfunding in 2017; three businesses raised $3.4 million in 2016. This contraction appears to be relatively consistent with the lumpy nature of equity crowdfunding deals in the energy access space. In 2015, there was one equity campaign by Swedish debt platform TRINE (Case Study on pg X), which raised $80,000.

P2P Microlending | Top 5 Countries

Donation Crowdfunding | Trends 2015 – 2018



Equity Crowdfunding | Trends 2015 – 2018



Energy access related Reward Crowdfunding also contracted during 2017. Around 30 One-off Fundraiser campaigns were launched, however very few managed to reach or exceed their target (5 campaigns). The average campaign size was smaller than in previous years as no energy-access Mega-campaigns were launched during the year. The largest fundraiser in 2017 was a Crowd Power-supported campaign by Kitui Industries in Kenya, which raised around $25,000 to purchase biodiesel water pumps. In previous years, Mega-campaigns, which tend to raise $100,000 to $500,000 at once, bolstered figures.

Crowd-sourced Financing for Energy Access | 2015 – 2017 by Model

	Donation	Reward	Debt	Equity	Total
2017	$510,000	$75,000	$13,076,000	$0	$13.7 million
2016	$340,000	$335,000	$4,600,000	$3,400,000	$8.7 million
2015	$235,000	$551,000	$2,539,000	$81,000	$3.4 million

Note: Rounded to the nearest thousand with the exception of the Total, which is rounded to the nearest hundred thousand.

Top 5 Energy Access Companies Crowd-sourcing Finance | 2017

Company	Amount Raised	Country	Platform
Raj Ushanga House	$1,197,800	Kenya	TRINE
Azuri Technologies	$1,161,000	Kenya, Tanzania	Energise Africa
SimGas	$1,039,213	Tanzania	Lendahand
Sollatek	$607,986	Kenya	Energise Africa, Lendahand
SolarWorks!	$474,399	Mozambique	Energise Africa, Lendahand

THE 6 CAMPAIGN ARCHETYPES

Since we began exploring the role of crowd-sourced finance for energy access businesses and projects, we have observed six campaign archetypes across the thousands of energy access campaigns we analysed. The following section takes a granular lens to relevant energy access campaigns from 2015 to 2017 and provides a description of the archetypes, in addition to case studies from a range of businesses and non-profits in the sector.

We feature interviews with product distributors, foundations and financiers that have successfully crowd-sourced financing including: Tahude Foundation (Tanzania), Rafode (MFI), Solaris Offgrid (Tanzania), GravityLight Foundation (Kenya), Emerging Cooking Solutions (Zambia), Simusolar (Tanzania), Azuri Technologies (Kenya, Rwanda) and TRINE (Kenya). We also list relevant platforms to allow potential campaign-makers to identify the most suitable platforms for their needs.

The six archetypes explored in this section represent clusters of campaigns with similar characteristics. They raised similar levels of funding, for similar purposes, from funders with similar characteristics. The archetypes considered are below:

1. Partnership Model
2. One-off Fundraiser
3. Mega-Campaign
4. P2P Microlending
5. P2P Business Lending and Online Debt-based Securities
6. Equity Crowdfunding

We draw on these archetypes to outline the different applications of crowd-sourced financing in the energy access space. Crowd-sourced financing is often observed under one umbrella term – "crowdfunding" – although in reality there are three distinct models: non-investment models, debt models and equity models. Each of the archetypes we identify falls into one of these models. It is important to note that P2P Microlending is more nuanced; although debt is provided to the borrower, lenders typically make zero-interest, and for this reason we consider P2P Microlending as a non-investment model. Non-investment based models are typically unregulated and funders do not expect to receive a financial return. Debt and equity models (e.g. P2P Business Lending and Online Debt-based Securities) are regulated under existing or bespoke financial regulations.[3]

Debt models are generally considered lower risk than equity and non-investment models (e.g. donation crowdfunding), due to the fact debt capital is inherently lower risk than equity capital and because non-investment models are usually unregulated. It is important to consider that other factors (e.g. company profile, platform integrity and due diligence) impact the risk profile of individual campaigns.

The archetypes we observe form a template to understand how crowdfunding and P2P lending can be applied and leveraged by businesses and non-profits working to extend energy access in Sub-Saharan Africa and parts of Asia. With an understanding of these archetypes, we hope that businesses, non-profits, accelerators, philanthropists and practitioners develop an understanding of when and how to harness crowd-sourced finance to raise much needed capital.

NON-INVESTMENT MODEL	DEBT MODEL	EQUITY MODEL
PARTNERSHIP MODEL	P2P BUSINESS LENDING	EQUITY CROWDFUNDING
ONE-OFF FUNDRAISER	ONLINE DEBT-BASED SECURITIES	
MEGA-CAMPAIGN		
P2P MICROLENDING		

THE 6 CAMPAIGN ARCHETYPES

PARTNERSHIP MODEL 01

Use: Non-profits raise funds to supplement fundraising, through recurring campaigns

ONE-OFF FUNDRAISER 02

Use: Non-profits & businesses raise funds, for a specific goal or milestone, from family and friends

MEGA-CAMPAIGN 03

Use: A business raises funds, often in the form of pre-sales, to support a specific milestone, from a wide, engaged network

P2P MICROLENDING 04

Use: Micro-entrepreneur or consumer, which raises funds for working capital or an asset purchase. Often facilitated by a MFI or other financial intermediary.

P2P BUSINESS LENDING 05

Use: A business raises a loan (often in a series), usually in the form of working capital. The platform conducts due diligence on the borrower.

EQUITY CROWDFUNDING 06

Use: Business raises investment capital from equity platform members, which receive shares.

1

PARTNERSHIP MODEL

MODEL
NON-INVESTMENT MODEL

RELEVANT PLATFORM TYPE
DONATION

What is the Partnership Model?

This model allows non-profits and community organisations to become 'accredited' platform members, giving them the opportunity to raise funds periodically on the platform. The fundraiser is usually a local grassroots organisation, sometimes with an international network of donors, but typically these are relatively small organisations with modest operating budgets. While the organisation raising funds is responsible for outreach during the campaign period and building a donor based, the platform also plays a significant role in attracting donors. Organisations will often focus their efforts on 2-3 campaigns throughout the year and use donation crowdfunding to supplement their income from other donors and grants.

How much can you raise?

Grassroots organisations typically raise funds on a 'project' basis and put together a campaign for a specific undertaking, such as distributing 1,000 solar lights to families in refugee camps. Therefore the amount raised varies widely, although most campaigns tend to have targets of $5,000 to $30,000. It is important to keep in mind that the Partnership Model is used for recurring fundraisers and organisations often run 2 to 3 campaigns per year. The average campaign size on the GlobalGiving donation platform, which operates a Partnership Model, is $9,000.

Who is the Partnership Model suitable for?

The Partnership Model is most frequently used by non-profits. Social enterprises rarely utilise this model, which could indicate an underutilised opportunity for social enterprises to raise capital, particularly in the start-up phase of operations. Demonstrating milestones and impact implies the model may not be a natural fit for social enterprises with a long lead-time to making sales and demonstrating impact (e.g. companies in initial R&D phase). Social enterprises could utilise this form of donation crowdfunding for business projects that have a direct impact on communities, such as market testing a prototype. Currently, the main users of this model are locally based non-profits and grassroots organisations with an international donor network of some kind.

Relevant Platforms

GlobalGiving
Raisely, JustGiving, Generosity by Indiegogo, GiveNow

CASE STUDY
TAHUDE FOUNDATION

Photo: Tahude

COUNTRY: TANZANIA
PLATFORM: GLOBAL GIVING
RAISED: $35,000 (ACROSS MULTIPLE CAMPAIGNS)

Tanzania Human Development Foundation (TAHUDE Foundation) is a non-profit organisation working in rural Tanzania, headquartered in Arusha. It is a locally led community organisation founded by Tanzanian individuals whose ambition is to utilise 'the talents of men and women who wish to effect positive changes in the lives of people'. The organisation connects implementation partners with the communities they support.

Can you tell us about the status of TAHUDE Foundation prior to joining GlobalGiving?
TAHUDE Foundation did not have a track record before joining GlobalGiving, it was just a registered non-profit. The organisation could not solicit funds from potential sponsors due to an absence of a track record, which is why we turned to GlobalGiving.

How did you go about deciding to partner with GlobalGiving and to use crowdfunding to raise funds?
We found GlobalGiving online and were impressed by what they do, so we decided to partner with them. It was challenging to get an opportunity to be accepted on the GlobalGiving platform. To join, TAHUDE Foundation was required to raise $5,000 from 40 different contributors in a very short span of time (about a month) – but we did it! With time TAHUDE entered several crowd funding campaigns and has raised over $35,000 so far.

What have you achieved with funds raised?
The funding has really allowed us to scale. At the beginning TAHUDE Foundation was just working in a small village in rural Tanzania, called Gongali Village. But through the successful campaigns on GlobalGiving we have raised funds to reach more than 3,000 people with our services. We provide solar lanterns, biogas and water filters in rural communities.

Would you suggest donation crowdfunding to other non-profits looking to raise money?
Yes, I am strongly convinced that crowdfunding is the best approach to support start-up organizations and those who are determined to impact the lives of many people. We are so grateful to GlobalGiving and its partners, and encourage other organizations to consider joining the GlobalGiving platform.

2

ONE-OFF FUNDRAISERS

MODEL
NON-INVESTMENT MODEL

RELEVANT PLATFORM TYPES
DONATION
REWARD

What is a One-off Fundraiser?

A One-off Fundraiser can be held on a donation or reward crowdfunding platform and is a way for entrepreneurs to formalise the process of raising funds from their family, friends and broader network. Early-stage companies typically use one-off fundraisers to raise seed capital for a proof of concept. Unlike typical reward campaigns that rely on pre-sales of a product to attract funders, these campaigns rely largely on the founders' network and personal connection to secure funding. If the campaign is held on a reward crowdfunding platform, the reward is often intangible such as a thank you on the campaign-makers website.

How much can you raise?

The amount raised is usually a reflection of the capacity of the network of the founders to contribute, and the campaign target should be set to align with expected contributions from the network. There is a general misconception that 'the crowd' miraculously appears when a campaign is posted on a platform. While this may be the case for debt and equity based models, where platforms conduct due diligence and have a strong membership base, it is far less common for non-investment models like donation and reward crowdfunding, where funding is often motivated by a connection to the individuals raising funds. Our analysis of eight energy access-related One-off Fundraisers on donation and reward crowdfunding platforms over the past three years shows that the absolute majority of funders were personally connected to the founders raising capital. As a result we find the amount raised depends on the market in which the platform operates and where the campaign-backers (e.g. the founders network is located). Campaigns supported by Crowd Power raised between $5,000 and $50,000 from their networks, inclusive of match funding or a lump-sum contribution from UK aid.

Who are One-off Fundraisers suitable for?

A range of companies (local and international) has carried out successful One-off Fundraisers. Successful campaigns by local entrepreneurs have been in countries with a developed local crowdfunding market, such as Kenya and South Africa, where payment mechanisms like mobile money are widely utilized. Platforms in these countries focus on local market users and are therefore well suited to local businesses. Several platforms integrate features that appeal to international donors also, such as the conversion of monetary units from local currency into hard currency.

Companies with international management teams are more likely to use platforms that target funders in advanced economies – mostly in Europe and the USA. These platforms have limited payment options (some only accept credit cards), which restricts the participation of businesses with local teams and networks. There are several examples of fundraisers that have taken a 'dual-listing' approach, listing a campaign on two platforms – one local platform (e.g. M-Changa, Kenya) and one in an advanced economy (e.g. 1% Club, the Netherlands).

Relevant Platforms

Donation Crowdfunding
M-Changa, StartSomeGood, Charidy

Reward Crowdfunding
Indiegogo, Pozible, KissKissBankBank, Kickstarter, Thundafund

One-off Fundraisers for Energy Access | 2017

Platform	Campaign	Country	Amount Raised
M-Changa	Kitui Industries	Kenya	$30,000
M-Changa	Rafode MFI	Kenya	$18,300
Launch Good	Lighting Up Gaza	Palestine	$8,637
M-Changa	Eco Charcoal / Kisigua Tree Farm	Kenya	$5,472
StartSomeGood	Shiriki Hub	Rwanda	$1,055

WHEN CAMPAIGNS FAIL

In late 2014, infoDev piloted a 'crowdfunding boot camp' for entrepreneurs at the Kenya Climate Innovation Centre (KCIC) in Nairobi and supported six businesses to take their campaigns live (chosen from 73 incubatees at the KCIC).[4] All campaigns were to be launched on Indiegogo, a USA-based platform, and the entrepreneurs were selected based on a range of criteria, including 'the company's management team, legal status, maturity, business model (including value chain), current accounts, capital needs, crowdfunding aspirations, and social media presence'.[5]

While the above criteria may be plausible indicators of business success, they may not be useful proxies for crowdfunding success. All campaigns failed to reach their targets and several of the selected companies did not launch their campaigns following the failure of their colleagues' campaigns.

During Crowd Power we found the number one factor influencing success for one-off fundraisers on donation and reward crowdfunding platforms is the capacity of the fundraisers' network to contribute. This means the chosen platform, campaign target and outreach strategy should be based on the funders – where they are based, how much they are likely to contribute and how they wish to pay (e.g. mobile money, credit card).

The infoDev pilot appeared to be based around the 'Mega-campaign' archetype, although businesses were better positioned for a 'one-off fundraiser' on a Kenya-based platform. One-off fundraisers are focused on the entrepreneurs' network – the target and platform are set in alignment with this. Philanthropically motivated match funding or lump-sum payments can be another effective way to catalyse funding into campaigns that raise seed capital from the entrepreneurs' family, friends and network.

CASE STUDY
RAFODE

COUNTRY: KENYA
PLATFORM: M-CHANGA
RAISED: $18,300

Rafode is a non-deposit taking Micro-finance institution (MFI) based in Kisumu, Kenya that serves rural low-income earners. Rafode is a cashless bank, relying on mobile money to disburse loans and receive repayments. It supports rural low-income earners. It supports Micro and small businesses, energy access in off-grid rural communities and smallholder farmers through the provision of loans to access farm inputs and improve indigenous food production.

Can you tell us about the status of Rafode prior to launching your campaign on M-Changa?
Rafode launched the renewable energy programme in 2013, with funding from Hivos, a Dutch non-profit and in 2016 the US African Development Foundation funded the program to expand into other areas. The programme provides loans for solar home systems, pico solar products and energy efficient cookstoves.

How did you go about planning for the campaign? What was involved in launching and running a campaign?
We contacted our donors via SMS and WhatsApp and directed them to the website. We also sat down as a management team and came up with a list of potential contacts, emailing and calling to ask for contributions toward the fundraise.

What did you achieve with the funds?
The funds were important and enabled us to serve an additional 500 clients. The repaid funds are revolved to support more customers to access solar lamps and energy efficient cook stoves. Currently Rafode is working with over 2,500 clients who have taken out loans for renewable energy products.

Would you utilise crowdfunding again?
I would utilise crowdfunding again, but the challenge is the limited amount we can fundraise. We raised about $18,000 including match funding, but we need to raise at least $200,000 to build our renewable energy programme.

CASE STUDY
SOLARIS OFFGRID

Photo: Solaris

COUNTRY: TANZANIA
PLATFORM: KISSKISSBANKBANK
RAISED: €10,000 ($11,667)

Solaris Offgrid develops pay-as-you-go (PAYG) solutions to scale up affordable and sustainable energy access in off-grid areas. The company is one of the leading providers of cloud-based PAYG software, enabling solar manufacturers and distributors to integrate and track customer repayments. In 2014, Solaris Offgrid launched a reward crowdfunding campaign on French platform, KissKissBankBank.

Can you tell us about the status of Solaris Offgrid prior to launching your campaign on KissKissBankBank?

Back in 2014, Solaris Offgrid – the parent company of Solaris Tanzania – was just a small project called Eternum Energy. Our three co-founders carried out the project, with no employees, and only €50,000 ($56,500) in grant funding from the Kenya Climate Innovation Centre (KCIC). We were able to build a complete pilot around the newly formed "Pay-As-You-Go Solar" industry. We decided to raise funds through crowdfunding because it is complicated to finance a pilot through traditional capital providers, without track record.

How did you go about planning for the campaign? What was involved in launching and running a campaign?

There was video production and editing, PR and social media activity. We had one person working on the campaign, part-time, from 2 weeks prior to the launch through till the end of the 40-day long campaign. The campaign was funded by close to 100 contributors – about two-thirds were friends and family and the remaining third came from people visiting the KissKissBankBank platform and from people belonging to the networks of the first donors who were sharing their donation on social media. We ended up raising more than our €8,000 ($9,040) target, and over performed by 27%. We chose KissKissBankBank because it was one of the most popular in France and is social impact business oriented.

What did you achieve with the funds?

We managed to produce our first 100 units, buy a motorbike, hire our first technician and run market studies in Tanzania for a few months. Without such funding we wouldn't have been able to afford the

pilot and thus wouldn't have built Solaris Tanzania. We have now installed over 3,000 household solar systems and are supported by an ecosystem of over 100 people in Tanzania.

Would you utilise crowdfunding again?

Two years after our KissKissBankBank campaign we used Swedish P2P Business Lending platform, TRINE, for a debt campaign of €50,000 ($58,333). We are considering using a similar approach for an amount 6 to 10 times larger. While we are grateful for the funds collected during the reward campaign, and it was pivotal to the growth of our business, we would not revisit reward crowdfunding again given the amount of time it requires to raise such a limited amount – only €10,000 ($11,667). It takes as much effort to raise from professional investors, but for ticket sizes of hundreds of thousands of euros!

Photo: AngelList

The campaign was funded by close to 100 contributors – about two-thirds were friends and family and the remaining third came from people visiting the KissKissBankBank platform

3
MEGA-CAMPAIGN

MODEL
NON-INVESTMENT MODEL

RELEVANT PLATFORM TYPE
REWARD

What is a Mega-campaign?

The most commonly known form of crowdfunding, Mega-campaigns in the energy access space seek to replicate the success of technology driven crowdfunding campaigns that raise funds through pre-sales – these funders have been described as 'early adopters going shopping'.[6] Often funders are from beyond the campaign-makers' direct network and are usually directed to the campaign through the campaign-makers' outreach activities and/or the platform itself. Successful campaigns are those that have an innovative, novel product and technology that appeals to, largely, advanced economy based campaign-backers, combined with strong outreach materials and activities. In the social impact space, rewards that utilise a buy one-give one model are popular. For example, a campaign-backer may pay $100 to purchase two solar lights, one for themselves and one for a user in an off-grid community.

How much can you raise?

These campaigns are rare and difficult to scale and replicate; over the past 5 years, two companies in the energy access space – WakaWaka and GravityLight Foundation – have raised capital successfully through a Mega-campaign. Campaigns usually raise between $100,000 and $500,000 per campaign, although both companies have used Mega-campaigns multiple times, raising over $1 million each through the model. Given Mega-campaigns are based on honoring a pre-sales arrangement – where the campaign-maker agrees to ship the final product to the funder at an agreed point in time – it is important for those considering a campaign to calculate the costs associated with delivering the reward.

Who are Mega-campaigns suitable for?

There are few case studies of successful Mega-campaigns in the energy access space, which makes it difficult to analyse the profiles of successful campaigns. Between the two companies that have raised funding successfully, there are a number of commonalities – both developed innovative technologies in-house and own their intellectual property, they are each headquartered in Amsterdam and London, respectively, they had a well-developed outreach strategy and quality pitch materials during the campaign period. In reality though, few energy access companies are suitable for this type of crowdfunding and the model offers limited opportunity to replicate or scale.

Relevant Platforms

Reward Crowdfunding
Indiegogo, Kickstarter

4

PEER-TO-PEER (P2P)

MODEL
NON-INVESTMENT MODEL

RELEVANT PLATFORM TYPE
P2P LENDING

What are P2P Microloans?

P2P Microloans are small loans to individuals or groups that are funded by a group of individual borrowers that lend 'loan-parts' to a borrower through a microlending platform (e.g. Kiva). Microloan borrowers can post loans directly onto a platform (e.g. Zidisha) – true P2P lending – although this model is less common in the emerging market context. The typical P2P microloan model relies on financial intermediaries, such as microfinance institutions (MFIs), to originate loans, which are then funded through a partnership between the financial intermediary and the P2P platform. The financial intermediary usually submits the loan to the P2P lending platform, including the borrower's profile and loan terms, when it is then vetted by the platform and posted live. Microloans are often posted to the platform post-disbursement so funds raised on the platform reimburse the financial intermediary that initially provided the loan. P2P microlending platforms often have a philanthropic leaning and lenders may earn zero interest (like on the Kiva platform) to avoid financial regulation on interest-bearing instruments.

How much can a borrower raise?

The amount raised via P2P microlending platform varies from $20 to over $2,000. Microloan platforms that operate through financial intermediaries tend to have larger loan sizes than those on direct P2P Microlending platforms, which don't have an in-country intermediary (or representative) to assess credit worthiness.

Direct P2P Microlending platforms therefore tend to operate a ladder system of lending, where loans start small (e.g. $20) and gradually increase, for subsequent loans, as a credit record is established. P2P microlending platforms rely more on the credit assessment and loan terms of their financial intermediary partners that originate loans. The average loan size on microloan platform Kiva is approximately $250.

Who are P2P Microloans suitable for?

In the energy access context, P2P Microloans have two main applications:

1. **Asset-financing for customers.** Where a P2P microlending platform is used to raise funds for a borrower to purchase an asset such as a solar home system or energy efficient cookstove.
2. **Working capital for Micro-entrepreneurs.** Where a micro-entrepreneur, such as a distributor of pico-solar products or energy efficient cookstoves, borrowers funds to purchase inventory.

These applications are useful in certain situations. For example, early-stage companies may choose to offer consumer financing to their customers through a P2P Microlending platform. However, there are limits to the scalability of this model given the administrative burden of posting individual loans to the platform, along with the small size of the loans.

Relevant Platforms

DEBT
Kiva, Milaap, Zidisha

CASE STUDY
EMERGING COOKING SOLUTIONS

Photo: Emerging Cooking Solutions Zambia

COUNTRY: ZAMBIA
PLATFORM: KIVA
RAISED: $121,100

Emerging Cooking Solutions (ECS) is a social enterprise, based in Zambia, and sells solar home systems, clean cook stoves and sustainable fuel pellets. ECS targets low-income populations in urban areas, aiming to convert them from charcoal to sustainable fuel pellet cooking. ECS distributes Mimi Moto cookstoves and Greenlight Planet products.

How did ECS become involved in P2P lending?
Since our company was founded, we have struggled to balance the need to provide consumer financing – since very few people can buy our products upfront – while also saving precious working capital. We heard about KIVA at a conference and applied to become a partner. In essence, the KIVA partnership has increased our working capital, which has meant that we can extend favorable, interest free, financing to our customers.

Who are the borrowers you work with?
We mainly work with rural communities, both groups and individuals. Many are farmers, others are teachers in rural schools. We work with both men and women, in about equal proportions, as well as many young adults. We typically market our products by participating in events such as farmer trainings or savings group meetings, where people have already congregated. We light up our stoves, often cook some food as well, and show the solar products. Most of the time, it is the group's first exposure to clean cooking and renewable energy for the home.

How do you explain to borrowers that their loans are funded on a P2P lending platform?
Most of our customers are financially excluded. They do not have a bank account, nor a smartphone and they live a life far away from the internet. It is therefore not always easy to explain the concept of crowdfunding or P2P lending, but it often helps when we show pictures of some of the lenders and explain that it is similar to a group loan (a concept people are familiar with) except that it is a group of people lending rather than borrowing.

What are the advantages and limitations of P2P microloans?

Mobile money has changed our life as a company. Now all our transactions are cash-less, electronic, and directly and accurately tied to the right customer from the moment of payment, through our Management Information System (MIS). Before this, we struggled to know where some payments were coming from, which created a lot of confusion. We struggled tremendously and seriously considered phasing out these loans due to the administrative burden. We have now invested considerably in creating integration between this system and our accounting platform. By doing so, we can create a similar automated process for KIVA loans as well. So nowadays, the administrative burden of managing loans is much less and at an acceptable level.

We struggled tremendously and seriously considered phasing out these loans due to the administrative burden. We have now invested considerably in creating integration between this system and our accounting platform.

5

P2P BUSINESS LENDING & ONLINE DEBT-BASED SECURITIES

MODEL
DEBT BASED MODEL

RELEVANT PLATFORM TYPE
P2P LENDING

What is P2P Business Lending?

P2P Business Lending is where a business borrower obtains a loan from a group of individual investors via a P2P Business Lending platform. The borrower typically has a contractual agreement with the platform, which acts on behalf of investors. Loans can be secured or unsecured. In the energy access sector, solar home systems and other inventory is often used to secure the loan. Loans may rank senior, meaning they take priority over other unsecured debt, or it could be used to raise mezzanine or subordinated debt.

What are Online Debt-based Securities?

Online Debt-based Securities (DBS) are typically self-issued bonds sold at a fixed interest rate to retail and institutional investors via an online platform. In the energy access context, platforms act as a financial intermediary – originating the loans and performing due diligence on borrowers – before selling what are effectively 'business bonds' to platform members. Platforms are subject to financial regulation and borrowers are subject to high levels of due-diligence and disclosure.

How much can a borrower raise through these instruments?

Energy access companies accessing finance through P2P Business Lending or Online DBS have two options when raising capital:

1. **Zero-interest working capital loans.** Loans of $10,000 to $100,000 to social enterprises that can demonstrate adequate servicing and sales history. Currently Kiva is the only platform providing such loans. Initial loans are $10,000 to $50,000 and subsequent loans are $100,000.
2. **Commercial working capital facilities.** Facilities of $300,000 to $7 million, typically raised in tranches of $100,000 to $1 million. Borrowing is usually in hard currency, at commercial rates (10% p.a. – 15% p.a.). Online DBS may be issued and sold to investors.

Who are P2P Business Lending and Online Debt-based Securities suitable for?

These loans are suitable for companies with a proven track record that can demonstrate loan servicing. Zero-interest working capital loans are intended for earlier stage companies and allow borrowers to establish a track record with a debt provider, which can be leveraged to raise debt from a P2P Business Lending or Online DBS platform. Online DBS platforms are suitable for companies that have reached sufficient scale and require meaningful sums (typically a $500,000 – $1 million facility). These are usually companies with a 2 – 3 year track record, a robust back-end system tracking customer repayments and a sound repayment rate (e.g. low delinquencies) on the underlying portfolio.

Relevant Platforms

DEBT
Kiva Direct to Social Enterprise (DSE)

Online Debt-based Securities
bettervest, Energise Africa, Lendahand, TRINE

CASE STUDY
SIMUSOLAR

Photo: Simusolar

COUNTRY: UGANDA
PLATFORM: KIVA DIRECT TO SOCIAL ENTERPRISE (DSE)
RAISED: $50,000

Simusolar provides and finances productive use technologies to off-grid businesses in Sub-Saharan Africa. Energy-efficient equipment, such as solar irrigation systems and fishing lights, is designed to meet the needs of rural smallholder farmers and fishing communities.

Can you tell us about the status of Simusolar prior to launching your campaign on Kiva?
Simusolar had proven interest from funders, and impact in the market, with the help of a prior grant from the DOEN Foundation and investments from the founding team and friends, but the ability to grow was limited by a lack of working capital.

How did you go about planning for the campaign? What was involved in launching and running a campaign?
We shared it on personal and professional social media: Facebook, Linkedin, and Twitter being the primary vehicles. Facebook had the strongest impact as Marianne, our CEO, has many friends and followers.

How did you hear about the Kiva DSE pilot?
I had heard about it as I volunteered with Kiva at one point and have followed their work. Diligence was thorough, with numerous follow-up questions about our funding plan, risks, and risk-mitigation plans. The process was conducted via email with document sharing.

How has the campaign impacted the business? What financing gap (if at all) does the Kiva DSE address?
The campaign was critical in allowing us to continue to serve the market during the early stages. Funds were used to backfill working capital for loans we made to low-income clients to purchase solar fishing equipment and solar water pumps. The funds freed up capital to support staff and operations. More importantly, the funding was a stepping-stone to scalable commercial sources of finance, from other platforms that offer larger working capital facilities through the issue of securities to investors. Without Kiva, I don't know that we'd have been able to make that step. The DSE pilot is a critical stepping-stone.

Where is Simusolar at in the fundraising journey? Will you utilise P2P lending again?

We have signed loan agreements with other P2P Business Lending and Online DBS platforms Lendahand and TRINE to date. We are in the due diligence process with a large institutional investor for convertible securities, a precursor to equity. We would use Kiva again for pioneering products and markets – the high-risk areas that are harder for us to finance commercially. Loans via P2P Business Lending and Online DBS platforms are slower than some other sources, but the availability of funds makes up for it. Also, we appreciate the educational component of it – the fact that it allows a wide audience to learn about the ways businesses can address social issues.


Photo: Simusolar

The campaign was critical in allowing us to continue to serve the market during the early stages. Funds were used to backfill working capital for loans we made to low-income clients to purchase solar fishing equipment and solar water pumps.

CASE STUDY
AZURI TECHNOLOGIES

Photo: Azuri Technologies

COUNTRY: KENYA, TANZANIA
PLATFORM: ENERGISE AFRICA, LENDAHAND
CAMPAIGN TYPE: DEBT
RAISED: £2 MILLION ($2.56 MILLION) ACROSS MULTIPLE CAMPAIGNS

Can you tell us about the status of Azuri Technologies (Azuri) prior to launching your first campaigns?

Azuri launched its first campaign in 2017 and since then we have partnered with platforms TRINE, Energise Africa, and Lendahand to raise over £2 million ($2.56 million). These funds have enabled Azuri to deliver clean energy to over 100,000 people across sub-Saharan Africa. Azuri is an innovative company not just with our technology but also in finance. We previously developed financial solutions to fund our business through private investment and debt facilities, including our innovative off-balance-sheet debt financing program. Since Azuri began in 2012, we have sold over 150,000 systems in 12 countries across sub-Saharan Africa and generated over 5,000 jobs throughout the region.

Can you tell us about your activity on impact investment/debt-based security platforms to date?

Azuri and our local distribution partners have been using lending platforms to unlock scalable capital and supply pay-as-you-go (PayGo) solar home systems to off-grid households in Africa on a commercial basis. From this, we are able to manufacture a solar home system for less than the cost of the kerosene lamps and the mobile phone charging fees that it replaces. Access to alternative finance has allowed Azuri to remain at the forefront of the PayGo solar sector.

How has access to capital through platforms like Energise Africa, Lendahand and TRINE impacted Azuri's performance and growth?

Having access to capital through lending platforms like Energise Africa, Lendahand and TRINE has enabled Azuri to scale rapidly. From these funds, we are able to build our solar systems at a rapid pace and deliver them to market. Azuri has delivered solar home systems to 12 countries in sub-Saharan Africa and changed more than 750,000 lives in the process. Our innovative approach to financing ensures the cost of clean energy is affordable for the millions who lack access. Crowd-sourced finance is providing access to capital that helps drive the transformation of rural Africa and enables retail investors to support the sector while making a return on their investment.

What are the future plans for Azuri in terms of raising finance? Would Azuri ever consider other forms of alternative finance such as equity crowdfunding?

Azuri is a pioneer in the pay-as-you-go (PayGo) solar space and a thought leader in the development of innovative financial solutions. As a company, we have explored alternative finance and will continue to do so to stay at the forefront of the sector. Scalable capital is essential for accelerating growth, developing new technology and maximising social impact.

Azuri has delivered solar home systems to 12 countries in sub-Saharan Africa and changed more than 750,000 lives in the process.

6

EQUITY CAMPAIGN

MODEL
EQUITY BASED

RELEVANT PLATFORM TYPE
EQUITY

What is Equity Crowdfunding?

Equity Crowdfunding is the sale of securities, usually issued by a start-up, to investors via an equity crowdfunding platform. The platform acts as a fiduciary and conducts due diligence on potential investees. Platform members, who may be individual or institutional investors, purchase shares via the platform.

How much can a company raise?

The UK has one of the most developed equity crowdfunding markets worldwide and the top 3 equity crowdfunding platforms globally (Crowdcube, Seedrs, Syndicate Room). In these markets, the typical raise is usually somewhere between $500,000 and $1 million. The average campaign size on the world's largest platform Crowdcube was $900,000 in 2017. Few off-grid energy companies have raised funds through this method – six equity campaigns have been successful in the sector and the average amount raised is $450,000 per campaign.

Who is Equity Crowdfunding suitable for?

The regulatory treatment of Equity Crowdfunding is one of the biggest barriers to participation for off-grid energy companies. Companies looking to raise equity via crowdfunding typically need to have an entity domiciled in the country where the equity platform is based, such as in the UK or Europe. There are currently few equity crowdfunding platforms based in Sub-Saharan Africa, although anecdotally we understand regulators in some East African countries are open to the idea. Apart from getting over the regulatory hurdle, successful fundraisers tend to have a novel product, own their intellectual property and have a compelling narrative.

Relevant Platforms

Crowdcube, Seedrs, Syndicate Room, OurCrowd, Uprise Afric

Photo: TRINE

COUNTRY: SWEDEN
PLATFORM: FUNDEDBYME
CAMPAIGN TYPE: EQUITY
RAISED: €70,000 ($79,000)

TRINE is a Online Debt-based Security platform that facilitates loans to off-grid solar companies in Sub-Saharan Africa. In December 2015 they launched an equity crowdfunding campaign as a proof of concept, before launching their platform in February 2016. TRINE has raised over $10 million for off-grid energy businesses in the two years since their launch.

Can you tell us about the status of TRINE prior to launching the campaign on FundedByMe?
We had been working on the idea for a bit over a year. At that time we were a team of five people and the plan was to test the market with a simple way of investing, without coding and launching our own platform. FundedByMe was our first choice as they operate in Sweden and have a big crowd that invests in different campaigns. Our objective was to see if, and how fast, our campaign gets funded to decide if we should continue with that specific business idea. And the campaign went very fast; it was fully subscribed to after less than 24 hours.

How did you go about planning for the campaign?
We planned the campaign in-house and got a professional videographer to make a video for the campaign. In order to reach the campaign goal (€30,000/ $33,900) we needed a convincing story and narrative, as well as good marketing materials – like a video, infographics etc.

What did you achieve with the funds?
We ended up overfunding in 24 hours and ultimately raised €71,000 ($80,234). These funds were invested into a Special Purpose Vehicle (SPV) owned by TRINE, which lent to the borrower RVE. SOL to implement a solar project in Kenya. As the borrower repaid the loan, investors were repaid. The successful funding was for us the start of the real TRINE product and gave us the needed validity to raise a seed round in order to build the product and company.

Would you recommend equity crowdfunding to other start-ups looking to raise capital?

Equity crowdfunding is a good way for start-ups to raise capital where building a product for public use as you not only get equity capital, but ambassadors for your business that help you reach out to more early adaptors. In our case though we did not raise equity for the company (TRINE), we used the equity portal FundedByMe in order to raise money for a loan to a solar company. The equity investment was ultimately in the SPV, which provided the loan. So this was really a quasi-equity product in the end. If there would have been a platform where we could have raised debt easily for the campaign we would have preferred that – but this was a work around.

We ended up overfunding in 24 hours and ultimately raised $80,234. These funds were invested into a Special Purpose Vehicle (SPV) owned by TRINE

INTERVENTIONS TO CATALYSE FUNDING

Since 2015, the Crowd Power programme has co-funded over 250 campaigns with around £400,000 ($513,000) in grant funding from UK aid. Funding has been deployed using four main intervention types: match funding, lump-sum contributions, gift vouchers and first-loss guarantees. As the Crowd Power programme was intended to be an experimental programme, testing various intervention types on different platforms was an important component of the design. We assessed the crowd's appetite for various interventions and found preferences were correlated with the platform archetype.

Interventions explained

Match Funding
Where a funder matches donations or investments from the crowd. Funds are usually matched dynamically (i.e. live) for a specific window of time or up to a particular threshold, for example 25% or 50% of the campaign target.

Lump-sum contribution
A one-off lump-sum donation or investment into a campaign. The payment may be linked to a funding milestone, for example a $10,000 contribution is made when 50% of the campaign target has been reached.

Gift Vouchers
Often used to attract new platform members, this may be in the form of a coupon code, which can be redeemed upon investment (e.g. a bonus investment of $50, when you invest $200) or an electronic voucher with a specific value (e.g. $25).

First-loss Guarantee
A socially- and environmentally-driven credit enhancement provided by a donor or an investor, who agrees to bear first loss in an investment, in order to catalyse the participation of co-investors that otherwise would not have entered the deal.

We find the archetype used by the crowd-investor determines the preferred incentive type. The following table captures results from an Energy 4 Impact survey of over 900 respondents, and in-person interviews where aggregate quantitative data was unavailable.

Crowdfunding Archetype	Match funding	Lump-sum contribution	Gift Vouchers	First-loss guarantees
Partnership Model	●			
One-off Fundraiser	●			
Mega-campaign*	●			
P2P Micro-lending	●			
P2P Business Lending and Online Debt-based Securities				●
Equity		●		

* Data not available for this campaign archetype. This is an assumption based on data from respondents that contributed to One-off Fundraisers on reward crowdfunding platforms, combined with historical utilisation of match funding during Mega-campaigns

We find the archetype used by the crowd-investor determines the preferred incentive type.

Interventions were not applied under controlled conditions, meaning many variables were at play (e.g. campaign target, investment terms, seasonality), making it difficult to ascertain the impact of these mechanisms in isolation. The nature of crowd-sourcing is such that no two campaigns are alike – funding rates vary depending on the time of year and it is difficult to stabilise all variables (e.g. campaign timing, campaign target, platform, rate of return, company risk rating, country, impact) to assess the impact of a given incentive type.

Future research into this area of financing could focus on intervention design with the aim of implementing more controlled experiments; for example tracking the performance of different tranches (of the same size, with the same terms) of a loan by one borrower and applying a series of different interventions. The data we captured on interventions during the Crowd Power survey is based on recall, thus it would be interesting to test this in comparison to actual user behavior – perhaps through the use of simulations or by tracking investor/donor behavior through the use of codes. A number of archetypes, most notably P2P Microlending, P2P Business Lending and Online Debt-based Securities, are reaching sufficient scale in the energy-access market, allowing interventions to be deployed in a more controlled manner (rather than the relatively ad hoc applications to date) to test the impact of specific interventions.

Future interventions in crowd-sourced finance for the energy-access sector could look to explore new incentive types, beyond the four described above. Online DBS platform, TRINE, has experimented with 'bonus interest' for individual investments of €20,000 and €50,000 during some campaigns. Our analysis of the market shows outstanding loans to off-grid companies are denominated in hard currency (GBP, EUR, USD), while the income servicing these loans is typically denominated in local currency. Funders looking to support the role of crowd-sourced financing in the energy access sector could support the creation of local currency lending facilities. Possible interventions include funding set-up costs and/or providing a partial subsidy to local currency borrowers (in the form of a reduced interest rate).

There is also potential to explore the four existing interventions outlined above in a more granular fashion by examining the impact of match funding at particular intervals; for example, is match funding more effective when applied from the inception of the campaign as a cornerstone investment or as a bridge at the 50% raised milestone. The application of lump-sum payments to close campaigns, particularly for One-off Fundraisers and Equity Crowdfunding could also be explored, in addition to the role of the co-funders brand in market signaling. For example, does a lump-sum investment from a venture capital fund decrease time to fund and/or increase the average investment amount? There is still much to be explored and understood with respect to deploying interventions in a meaningful way – both in terms of value-for-money and the impact of the intervention on campaign success (as well as their role in long-run business success!).

Top 3 Recommendations for Future Research

1. **Invest in research design.** Reduce and control for variables as best (and as practical) as possible. Thorough intervention design allows platforms and funders to test the impact of different funding approaches on the crowd's behavior and assess value-for-money.
2. **Test actual vs. claimed investor behavior**. Test the crowd's actual behavior through the use of controlled simulations to compare survey responses to a real-life environment.
3. **Test more interventions and existing ones in new ways.** Experiment with existing, and create new, incentive types to better understand the impact and value-for-money proposition of different interventions.

CROWD POWER UPDATE

Crowd Power began in April 2015 and aimed to research the role of crowdfunding in the off-grid energy sector. Crowd Power has supported over 250 energy access related crowdfunding campaigns raise close to $4.5 million. UK aid provided £400,000 ($513,000) as direct support to energy access campaigns, in addition to budget to support the research agenda.

£400,000 deployed Crowd Power Direct Support By Campaign Type

252 campaigns supported

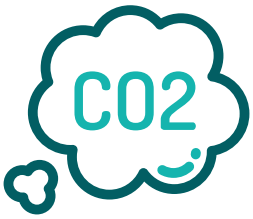
29 countries

Top 3 Countries – Kenya, Tanzania, Zambia

300,000+ individuals with access to clean energy

Co-funding leveraged 6X private capital

120+ jobs created



56,000+ tonnes CO2 reduced

Funds were deployed through four intervention types:

1. **Match funding.** Funder matches donations or investments from the crowd
2. **Lump-sum contribution.** One-off lump-sum donation or investment into a campaign
3. **Gift vouchers.** A coupon code or electronic voucher used to attract new platform members
4. **First-loss guarantee.** Credit enhancement provided by a donor or investor to catalyse participation of co-investors

Findings on the role and best application of each of these mechanisms are shared in Part 3 of this report, *Interventions to Catalyse Energy Access Crowdfunding.*

In September 2018, UK aid agreed to provide Energy 4 Impact with an additional £1 million ($1.28 million) as part of the Transforming Energy Access (TEA) programme [link], to support a next phase of action research into energy access related crowdfunding under the Crowd Power 2 (CP2) programme. CP2 will focus on four key areas:

1. To support early-stage start-ups raise seed capital from their networks via donation and reward crowdfunding platforms.
2. To encourage sustainable growth of P2P business lending through exploring increased provision of first-loss guarantees and the support of local currency lending.
3. To better understand the role of equity crowdfunding for energy access related start-ups and support eligible companies to explore this method of fundraising.
4. To broaden participation in energy access crowdfunding and P2P lending by targeting underrepresented groups such as millennials and diaspora.

Top 3 Learnings from Crowd Power

1. **Match funding levels should be set to an appropriate level.** The match level should be relevant to the platform type and the average campaign size. Match funding tends to be most suitable for donation and reward campaigns and likely delivers the most value-for-money when applied at around 25% of the campaign target.
2. **The 'multiplier' on funds – the amount the incentive catalyses in donations/ investments from the crowd – varies depending on the incentive type used.** Gift vouchers, where deployed effectively, tend to have higher multipliers than match funding for example, although there is still much to be understood on the impact of these interventions on campaign performance.
3. **Keep programme design agile and flexible.** Crowd Power's design was driven by research, market dynamics and strong platform partnerships. When working in the fast moving world of fintech enabled technologies, it is important to have a flexible, innovation-focused programme design. Strong partnerships, and an assumption that platforms know their market best, were integral to an innovative market-led design.

CONCLUSION

Crowd-sourced finance for energy access businesses and projects is growing in popularity, quadrupling from 2015 to 2017. Growth rates vary across platform types and the six archetypes we identified during the three-year Crowd Power programme. Debt based models, P2P Microlending, P2P Business Lending and Online Debt-based Securities had high growth rates over the period, while equity based models contracted and showed inconsistent growth. Non-investment models had varied performance; One-off Fundraisers and Mega-campaigns on Donation and Reward Crowdfunding platforms contracted, while Partnership Model campaigns on Donation Platforms, grew steadily (47% YoY growth), although it remains a small percentage of overall fundraising activity (~4%).

Archetype	Model	Suitable for	Typical Raise	Market Share 2017
Partnership Model	Non-investment based	Non-profits	$5,000 – $30,000	3%
One-off Fundraiser	Non-investment based	Companies, individuals, non-profits	$5,000 – $50,000	1%
Mega-campaigns	Non-investment based	Companies, non-profits	$100,000 – $500,000	0%
P2P Microlending	Non-investment based	Micro-entrepreneurs, individual and groups of consumers	$20 – $2,000	27%
P2P Business Lending and Online Debt-based Securitites	Debt based	Companies	$10,000 – $1 million, per campaign	70%
Equity Crowdfunding	Equity based	Companies	$500,000 – $1 million	0%

P2P Business Lending and Online Debt-based Securities popularity are growing at rapid speed – with less than $100,000 raised in 2015 and $9.4 million in 2017. P2P Business Lending and Online Debt-based Securities now account for 70% of all crowd-sourced financing for energy access businesses and projects; they accounted for 3% of crowd-sourced funds for energy access businesses and projects in 2015. P2P Microlending grew at an average annual rate of 48% from 2015 to 2017 with $3.7 million raised in 2017.

Powering the Crowd into the Future provides a deep-dive into six core energy access crowdfunding archetypes. These archetypes are helpful to understand growth trends and allow future campaign-makers to identify suitable crowdfunding and P2P lending opportunities. We find that reward crowdfunding activity (one-off fundraisers and Mega-campaigns) has contracted by an average of -58% in the two years since 2015. Only $75,000 was raised in 2017, compared to $550,000 in 2015. There were no equity crowdfunding campaigns in 2017, while $3.4 million was raised the previous year, reflecting the limited pipeline of energy access companies suitable for equity crowdfunding.

We expect P2P Business Lending and Online Debt-based Securities to continue to dominate crowd-sourced financing for energy access in the short to medium-term based on growth rates over the past two years and particularly given the announcement of portfolio guarantees on platforms like TRINE, which can protect over 60% of the amount invested by the crowd.[7] As P2P Business Lending and Online Debt-based Securities grow in popularity there is mounting interest from agencies, corporates and foundations to understand the role they can play in bolstering the market – Virgin Unite, Good Energies Foundation, Swedish International Development Cooperation Agency (Sida), GP Batteries, UNDP and UK aid are already active in the space, while many others are exploring it. There is also increased awareness of debt based models as viable fundraising tools for companies; 30 energy access companies utilised P2P Business Lending or Online Debt-based Securities in 2017 and raised $9.4 million. To put this into context, off-grid solar companies raised a total of $175 million debt in 2017.[8] We anticipate P2P Business Lending and Online Debt-based Securities will be an increasingly important component of debt financing for energy access businesses over the coming years. In the first four months of 2018, energy-access companies raised $10 million on Online Debt-based Security platforms alone.

There is still much information to be gleaned on the role and impact of interventions such as match funding, lump-sum contributions, gift vouchers and first-loss guarantees on campaign performance. With growing participation of funders in the space, we recommend a considered approach to interventions that monitor impact metrics (e.g. time to fund, private funds catalyzed, average investment size). The need for robust data should be balanced with the reality that crowd-sourced finance is part of the fast moving fintech world, where it is important to be agile and flexible in order to promote, rather than impede, innovation.

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