



# Lessons on Supporting Energy Access Enterprises

The most effective ways donors, investors, technical assistance providers and policy makers can support enterprises that provide access to clean energy.



**Azuri Technologies**

Azuri Technologies provides small solar home systems which bring good quality light and phone-charging to off-grid households and save them money. Usually the upfront costs of these systems render them out of reach for the people who would benefit most from them, but Azuri has developed a pay-as-you-go interface which allows households to pay for solar power as they use it with scratchcards, making them affordable to those who need them. Azuri currently has operations in East and West Africa.

**SolarAid/SunnyMoney**

SolarAid is a leading international charity that provides access to clean, affordable solar lights through their for-profit subsidiary SunnyMoney. Based in London and already working in Kenya, Malawi, Tanzania and Zambia, SunnyMoney sells a range of high quality solar lights. By catalysing the market and ensuring the availability of quality solar lights, SolarAid is replacing kerosene lamps with clean, safe and affordable alternatives.



**Cabeólica**

Cabeólica has harnessed Cape Verde's plentiful winds to help reduce diesel imports and increase energy security. The only business in our sample which feeds into the main grid, in the company's first year of commercial operation, 25.5 MW of wind farms have generated over a fifth of the electricity used across the four main islands, reaching more than 30% on two islands.

**d.light**

d.light designs high quality, low cost solar lanterns, phone-charging, and home systems which are sold across the developing world. Products cost between \$8 and \$200, making them affordable even to people with very low incomes. d.light has grown rapidly and has now sold over 6 million products which are improving health, safety, and educational opportunities.

**SolarNow**

SolarNow sells, installs and services high quality solar home systems for rural households and entrepreneurs in Uganda. Established in 2011, SolarNow has designed an innovative, modular product range that is distributed through a franchise network in rural Uganda. Clients benefit from 12 months credit and 24 months free maintenance and warranty. A state-of-the-art back office system ensures complete and correct client information is available in the field at all times.

**Zara Solar**

Zara Solar, a leading solar business in northern Tanzania, is providing people with high quality and affordable solar PV systems. In order to reach more remote areas, Zara Solar uses a network of trained local technicians that can service their own local customer base as well as providing customers with sufficient training to maintain the system properly once it is installed.

**Enterprises interviewed**

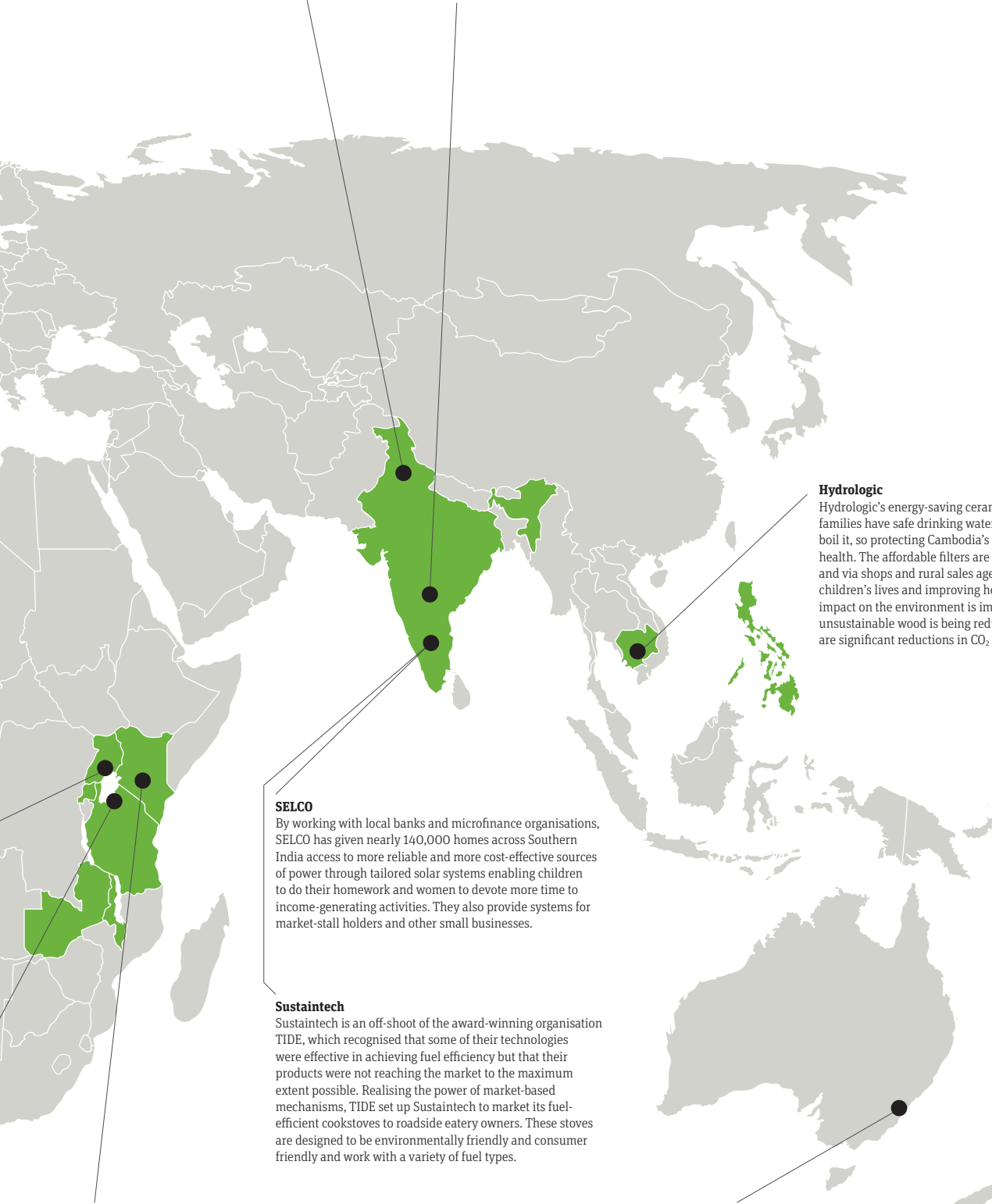
This map shows the location of the headquarters of the enterprises we interviewed. The countries reached by the interviewees' work are shown in green.

**Nishant Bioenergy**

Nishant Bioenergy designs and sells efficient stoves for use in businesses and schools. These stoves are fuelled by the crop waste produced by local farmers, which Nishant makes into pellets. The stoves cost around US\$180 each, and the saving on fuel (LPG) is around 50%. Nishant also arranges credit and provides training and maintenance.

**Noble Energy Solar Technologies (NEST)**

NEST is an Indian-owned business which has developed a small and practical solar lantern. Costing about US\$35 each, the lanterns are self-funding in one to two years depending on the kerosene saved. There is no subsidy involved, and NEST uses a network of independent dealers to maintain the lamps and organise the financing.



**Hydrologic**

Hydrologic's energy-saving ceramic water filters mean rural families have safe drinking water without using wood to boil it, so protecting Cambodia's precious forests as well as health. The affordable filters are sold to NGO programmes, and via shops and rural sales agents. As well as saving children's lives and improving household productivity, the impact on the environment is impressive: the use of largely unsustainable wood is being reduced and there are significant reductions in CO<sub>2</sub> emissions.

**SELCO**

By working with local banks and microfinance organisations, SELCO has given nearly 140,000 homes across Southern India access to more reliable and more cost-effective sources of power through tailored solar systems enabling children to do their homework and women to devote more time to income-generating activities. They also provide systems for market-stall holders and other small businesses.

**Sustaintech**

Sustaintech is an off-shoot of the award-winning organisation TIDE, which recognised that some of their technologies were effective in achieving fuel efficiency but that their products were not reaching the market to the maximum extent possible. Realising the power of market-based mechanisms, TIDE set up Sustaintech to market its fuel-efficient cookstoves to roadside eatery owners. These stoves are designed to be environmentally friendly and consumer friendly and work with a variety of fuel types.

**EcoZoom**

EcoZoom is a social enterprise that makes clean burning, portable wood and charcoal powered cookstoves. EcoZoom rocket stoves burn wood, charcoal, or solid biomass fuel efficiently while significantly reducing smoke output. Because EcoZoom stoves are so efficient, less dangerous smoke is inhaled by cooks, less natural resources are needed for fuel, and less time and money is spent gathering fuel. EcoZoom has an international office based in Nairobi, Kenya.

**Barefoot Power**

Barefoot Power is rolling out a wide range of affordable solar power products at speed across Africa, brightening up the lives of those with limited or no access to grid power. Products range from single desk lamps to complete kits for use by homes, clinics and schools. To reach large numbers of people, the company sets up and supports distributors in each country of operation, helping them build a sales and service network, and also works with microfinance organisations who can provide loans. Barefoot Power products are sold around the world.

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Photos courtesy of: **Ashden**, **Azuri**, **Cabéolica**, **SolarAid**, and **Martin Wright**.

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Solar-home system provided by  
Zara Solar used at an orphanage  
in Northern Tanzania.  
Credit: Ashden

## Introduction from Christian Aid

As International Director of Christian Aid I have seen first-hand how Christian Aid provides urgent, practical and effective assistance where need is great, tackling the effects of poverty as well as its root causes in over 40 countries.

Christian Aid believes that the world can and must be swiftly changed so everyone can live a full life, free from poverty and the private sector has a critical part to play in this – to escape poverty poor women and men need fair and inclusive markets that provide the income, goods and services they require. Enterprises that provide access to energy are a key part of this mix: the evidence for the positive developmental impacts of improved cook stoves and the opportunities created by access to solar lighting and mobile phone technology are irrefutable.

Christian Aid is pleased to have collaborated with Ashden on this key piece of research which further equips us and our peers to ensure the energy enterprises we work with are supported in the most effective way possible. Christian Aid works to transform markets for the benefit of poor producers and consumers in over 18 countries including work on improved cook stoves in Malawi, Mali, Ethiopia and Nigeria, solar lighting in India, and solar refrigeration in Sierra Leone.



Paul Valentin,  
International Director, Christian Aid

## Introduction from Ashden

This research draws on the experiences of organisations Ashden has rewarded for being the most successful at delivering sustainable energy at a local level. Ashden has rewarded over 170 programmes and enterprises in the UK and developing world, which are currently benefitting nearly 40 million people and saving over 5 million tonnes of CO<sub>2</sub> every year. Our award programme contributes to our wider mission to expand the use of local sustainable energy worldwide to bring social, economic, and environmental benefits.

This research is particularly pertinent to Ashden as it directly benefits our Support Programme. Ashden has been providing support to its international winners since 2008 to help them scale-up and replicate their work. This support goes beyond the prize money (£20,000–£40,000) and profile-raising associated with the Ashden Award itself, and is tailored to fit each individual winner. Rather than provide advice, training, or finance itself, Ashden provides support to winning enterprises through partners and introductions. Ashden helps match Award winners with support providers, and when a support plan has been agreed often finances the provision of this. Ashden also works with winners to understand their financing needs and introduce them to finance providers where appropriate.

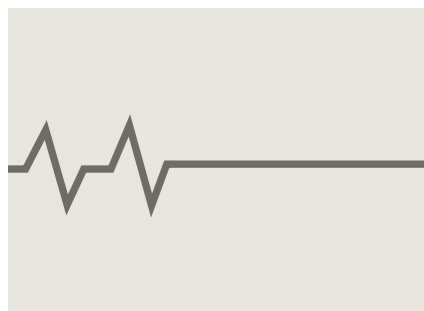
We believe this report will not only add value to the way Ashden supports its winners but will also enable those we partner with to support enterprises delivering energy access even more effectively.



Sarah Butler-Sloss,  
Founder Director, Ashden



**1.3 billion people**  
lack access to electricity



**4.3 million people**  
die prematurely every year from the  
effects of household air pollution

## Executive Summary

A lack of access to modern energy for those in the developing world is a factor that keeps families in poverty and slows economic development. 1.3 billion people lack access to electricity<sup>1</sup>, hindering the provision of health and education services and reducing quality of life. In addition many families suffer from having to collect fuel and cook over open fires or inefficient cook stoves; 4.3 million people die prematurely every year from the effects of household air pollution.

A growing number of enterprises are providing products and services to help address this lack of modern energy. The challenge to donors, investors, technical assistance providers and policy makers is to ensure that the support given to these enterprises really enables them to thrive. This shared research by Ashden and Christian Aid uses interviews with the leaders of energy access enterprises to provide guidance on how best to achieve this, with a focus on finance and technical assistance services.

The research has found that most enterprises delivering clean energy, especially at the small and medium end of the scale, have an unmet need for finance including grants, loans and equity. The need is particularly urgent for working capital<sup>2</sup>. More finance must be made available to meet this need, particularly types that can be accessed quickly and with minimal conditions, such as lines of credit. Long delays in receiving finance can place a huge strain on enterprises, and efforts should be made to speed these processes up where possible.

Participating enterprises have identified that when technical assistance<sup>3</sup> is provided to them via a business mentor or consultant, not only is it key that the provider has the right experience and expertise, but the assignment must be of sufficient duration – where a business mentor is placed with an organisation full time, our results suggest two months is the minimum if it is to yield significant benefits.

Impartial advice on financing options was identified as an unmet need; this need could be met by support providers, or individual advisors who do not offer finance. The same gap was identified regarding advice on how to reach investment-readiness; there is clearly space in the market for more impartial advice from businesses or individuals who are not selling a particular support product or service.

Support for sales and marketing is an area that the research has identified as important – those enterprises that had received good support in this area recognised it as vital for the organisation, and others keenly felt the lack of it. While mixing ‘business’ with serving the poor may be uncomfortable for some, for energy enterprises a focus on sales and marketing is vital.

Finally, management capacity is an essential factor for identifying the ability of an enterprise to absorb and make best use of support. Management capacity – including experience and relevant education – is often correlated with enterprise success and should be a major consideration. Related to this, management support for, and participation in, the support activity is key.

This research has found many examples where support has played a catalytic role in the development of energy enterprises, such as the flexible grants that led to the creation of SunnyMoney, now the largest seller of solar lights in Africa, or the advice that revolutionised Barefoot Power’s approach to sales and resulted in a ten-fold increase in their order book. These examples show that when support is designed and executed well, it can play a vital role in helping these enterprises bring modern energy services to the billions of people that need it.

<sup>1</sup> <http://www.se4all.org/our-vision/our-objectives/universal-energy/>

<sup>2</sup> Working capital is the capital of a business which is used in its day-to-day trading operations.

<sup>3</sup> Technical assistance is defined here as any support which helps organisations develop the expertise they need to run their enterprise effectively.



## Summary of recommendations

### Donors

- Use your resources and trusted brand to leverage working capital<sup>4</sup> for energy access enterprises.
- Implement a straight-forward, adaptable process for receiving and managing grants.
- Focus your grant finance on growth, new programmes, and innovation within the energy enterprise sector.
- Support your energy enterprise partners by brokering and funding technical assistance from experienced providers with appropriate expertise.
- Ensure management capacity is in place to make good use of your resources.

### Investors<sup>5</sup>

- Respond to the need of energy access enterprises for debt for working capital and negotiate repayment terms that enable them to thrive.
- Target social investment<sup>6</sup> at small and medium sized energy enterprises, helping them to improve their chances of securing commercial finance in future.
- Make financing decisions in good time.
- Maintain an open dialogue with the enterprise throughout the relationship, as this can mitigate risk.
- Publically champion how you have successfully managed the risk of investments in energy enterprises to draw more finance into the sector.
- Ensure management capacity is in place to make good use of your resources.

### Technical assistance providers

- Strengthen and raise the profile of your sales and marketing support services.
- Ensure top-level buy in for your support and the management capacity to maximise its impact are in place; recognise that the enterprise making a financial contribution to support is not always necessary to ensure success.
- Provide mentors to energy enterprises for sufficient lengths of time.

### Policy makers

- Put in place policies and support mechanisms for energy enterprises which create a conducive operating environment, including enabling energy enterprises to access finance.
- Develop proactive national strategies for energy access, including both positive mechanisms that enable energy enterprises to thrive and the responsible phasing out of policies that encourage unsustainable energy usage.

<sup>4</sup> Such as low interest loans and lines of credit.

<sup>5</sup> The term investors here refers to both social investors and commercial investors, including lenders such as banks.

<sup>6</sup> Investments which consider both social benefit and financial return.



Cabeólica's wind turbine blades arriving by truck  
Credit: Cabeólica

## Why are Ashden and Christian Aid interested in energy access and supporting enterprises that deliver it?

Both Ashden and Christian Aid recognise that lack of access to modern energy for those in the developing world is a factor that keeps families in poverty and hinders economic development. 1.3 billion people do not have access to electricity, which means families rely on dangerous and expensive kerosene to light their homes, agriculture remains inefficient, and health and education services are compromised. In addition many families suffer from having to collect fuel and cook over open fires or inefficient cook stoves which fill their homes with smoke. 4.3 million people die prematurely every year from the effects of household air pollution, including cooking smoke and kerosene fumes.

There are a growing number of energy enterprises which are working to solve these problems by delivering electricity, at household or community level, to those who live off the main grid or have unreliable access to grid electricity, or by selling improved cook stoves and fuels to make cooking cleaner and more efficient. Many successful energy access enterprises are Ashden Award winners, such as the solar business d.light and the clean water filter enterprise Hydrologic.

Most donors and investors have come to the conclusion that for provision of energy access products and services to be sustainable, they have to be delivered through market-based mechanisms. Years of experience have shown that when products are given away there is no feedback mechanism for the donor to understand the end-users' priorities, which means the products do not evolve to be truly useful and desirable. In addition, the structures that keep the products working are less likely to exist, particularly guarantees and trained repair-people. Donors, investors and other organisations are therefore interested to support enterprises in the delivery of energy products and services.

The aim of this research is to help technical assistance providers, donors and investors to identify the types of support that enterprises find most useful.

Support is needed because many obstacles stand in the way of enterprises that offer solutions to energy poverty. Often the markets for their products are underdeveloped – people are unaware that the products exist and a lot of work must be done to build up trust in them. Reaching remote rural customers is expensive, as customers are dispersed. In addition most customers have little purchasing power, so financing must be made available to enable customers to buy products. Technical knowledge and capacity is often lacking in the countries where these enterprises work, and those that run them sometimes come from a charitable background so lack business experience. Finally, commercial investors<sup>7</sup> are often wary of these businesses and the markets they operate in, regarding them as high risk.

There are many challenges facing energy enterprises but Ashden and Christian Aid believe they are not insurmountable. As organisations that work with these enterprises to help them survive and grow we have watched many succeed and some fail. We want to ensure that energy enterprises get support from donors, investors, policy makers and technical assistance providers that gives them the best chance of survival, because these enterprises have a huge role to play in ensuring women and men access the energy they need to thrive.

This research therefore seeks to answer the question: how can donors, investors, technical assistance providers and policy makers effectively support energy access enterprises to survive and grow? The people who have the first-hand expertise to answer this question are those who have experienced support – the enterprises themselves. The main evidence for the research was therefore obtained through interviews with the leaders of sustainable energy enterprises. The findings focus on the areas of finance and technical assistance.



A solar lantern being held by a happy customer.  
Credit: Steve Woodward/SolarAid



A family has clean water without having to boil it thanks to a Hydrologic water filter.  
Credit: Ashden



Women watch a clean-burning stove being demonstrated.  
Credit: Martin Wright

<sup>7</sup> Investors interested primarily in financial return.

## Methodology

To help us determine how energy enterprises can best be supported the research focused on four main questions:

**What types of support do energy enterprises need?**

**What organisational characteristics indicate that an enterprise is likely to be able to make use of support?**

**What other factors influence energy access enterprises' ability to survive and grow?**

**What are the characteristics of successful support?**

Christian Aid and Ashden identified 33 sustainable energy enterprises to interview, all of which are either Ashden Award winners or have been supported by Christian Aid. All of those selected to participate in the research are either registered as businesses or social enterprises, or take an enterprise-based approach within a not-for-profit organisation.

The leaders of all 33 enterprises were invited to an initial telephone call where we collected information on their business model, customer base and support experiences to supplement the information already held by Ashden. Based on this information the 14 enterprises which met Christian Aid and Ashden's criteria took part in a second interview which explored their financial and technical support experiences in detail. We will refer to these 14 enterprises collectively from this point forward as 'the enterprises'. Over 45 incidents of support were collected during the second interview phase.

To complement the findings from the enterprises, interviews were also completed with five support providers. These explored their experiences of providing support, which ranged from investment to sales advice. These interviews explored what had worked well, or not, and why.

It is often remarked that stories of failure are not shared often enough to enable others to learn from them. We wanted to capture both successes and failures in support provision, however we respect that disclosing failures can be damaging. We have, therefore, kept the examples we have used in this report anonymous.

## Limitations and considerations

As with all research there are factors to consider while reading this report:

- The pool of interviewees is not a random sample, as all are either Ashden Award winning enterprises or enterprises set up by the leaders of NGOs which had won an Ashden Award. Ashden undertakes a rigorous judging process and awards some of the best organisations in the sector – the sample is therefore biased towards more successful organisations and is not representative of the entire sector. Ashden Award winners are also chosen for the innovativeness of their work, therefore they also face particular challenges as a result of being pioneers in the sector.
- While every effort was made to include as broad a range of organisations as possible, in spite of our best efforts, no organisations based in Latin America have contributed to the research.
- We acknowledge that the sample size of the respondents in this research is relatively small. In addition, we were not able to discuss absolutely every incident of support for all organisations.
- Interview responses were coded and collated so that the results could be analysed. This necessitated a degree of subjective interpretation, however the themes identified in this report were clear.



Headmasters try out solar lanterns at a meeting with a SolarAid sales team in Tanzania.  
Credit: Ashden



Studying by the light of a Barefoot Power lantern.  
Credit: Barefoot Power



Making Hydrologic water filters.  
Credit: Ashden

## Introducing the enterprises and their support needs

The 14 enterprises interviewed consisted primarily of solar businesses – selling everything from lanterns to systems big enough to power several lights and appliances – and improved cook stove businesses. In addition there was one enterprise selling ceramic water filters, and another providing wind energy to the main grid in Cape Verde. This is the only enterprise in the sample working on grid-connected sustainable energy.

Ten out of the 14 enterprises interviewed are serving mainly rural customers, with only two, both businesses providing improved cook stoves, serving primarily urban customers. Most of the customers are households, though many of the enterprises also serve small and medium-sized enterprises (SMEs) and the public sector. A few also have industrial customers.

The interviewees' domestic customers have incomes ranging from less than US\$2/day to over \$20/day, with most falling between \$2/day and \$20/day.

The interviewed enterprises identified financial support as the most common type of support they had received<sup>8</sup>. This included debt, equity, grants, overdraft facilities, and carbon finance.

Technical assistance received<sup>9</sup> was mostly consultancy, business mentoring and staff secondments, and also training and education in six cases.

The types of support and their providers are summarised in Figure 1 (right).

The research did not show any correlation between the stages of the enterprises' development and the types of support received. This could be because of the sample size or because there is no linear development pattern for this type of energy enterprise, potentially because they are innovative and experimental, and because some start off within NGOs.

Two measures were used to judge the success of the support that the enterprises received. First, we asked if it fulfilled its original aims. We then asked the interviewees to rate its usefulness on a scale of 1–4, with 4 being very useful and 1 not useful at all.

When asked to judge the success of the support received, financial support scored highly in fulfilling its original aims, and technical assistance had a lower rate of success. However when asked to identify how useful the support was, the scores were similar. This indicates that success does not automatically correlate with usefulness. This could be because the support was useful in unintended ways, outside its original aims.

<sup>8</sup> 28 instances of financial support were identified by the interviewed enterprises.

<sup>9</sup> 20 instances of technical assistance were identified by the interviewed enterprises.

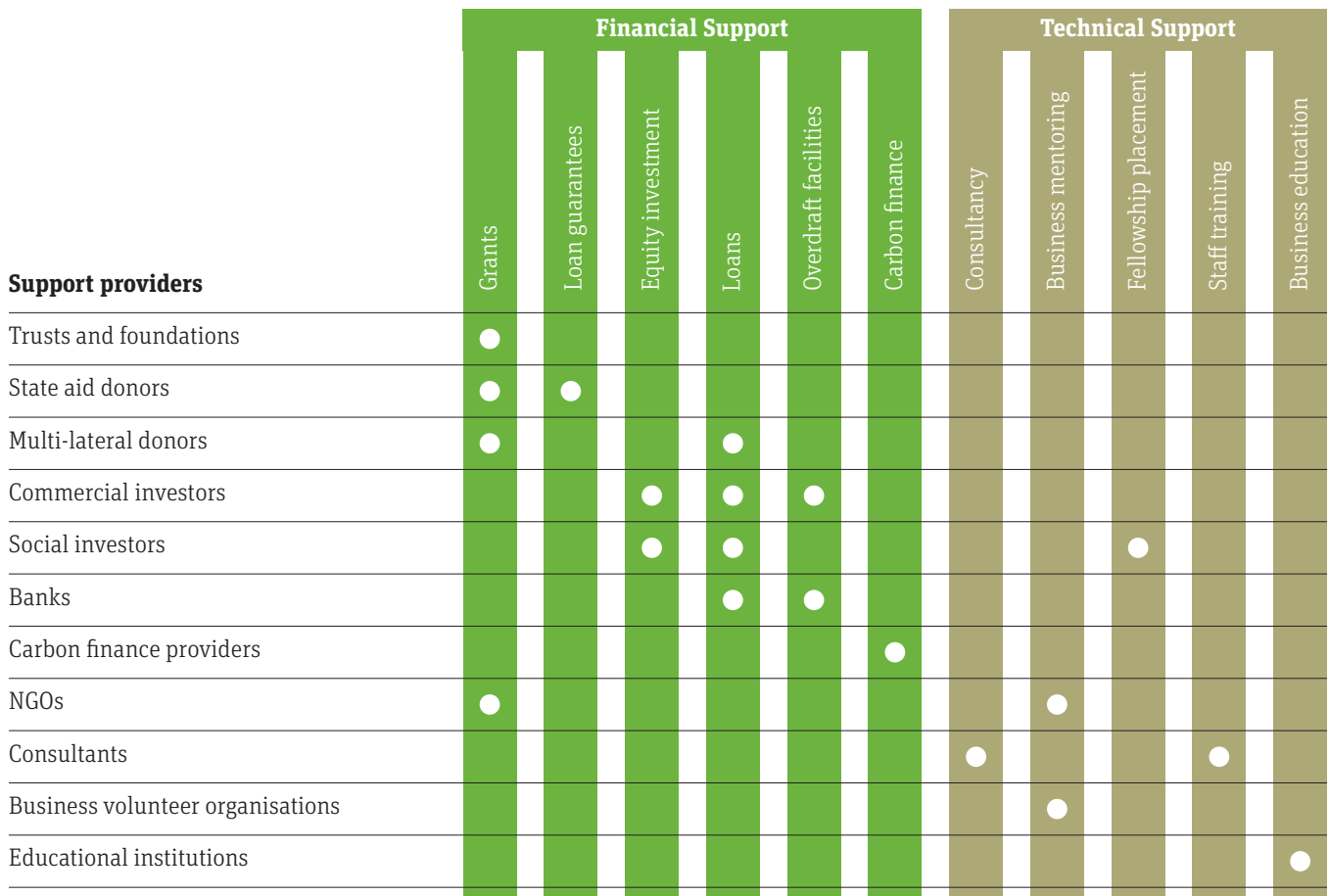


Figure 1. Types of support received and the support providers delivering it.



Woman and SELCO solar light.  
Credit: Ashden



## Lessons on supporting energy access enterprises: finance

### Working capital is king

The aim of more than half<sup>10</sup> the financial support the enterprises had received was to provide working capital. This was the most frequently mentioned aim in the financial category. It was followed by funding for innovative finance for end users and distributors.

In spite of the fact that a high proportion of the financial support discussed was for working capital, many enterprises identified that they still struggled to have enough working capital to manage day-to-day operations. Further finance to expand and have a wider impact was a secondary need.

Energy enterprises are therefore accessing finance, but not enough: when asked if there was anything they were looking for but couldn't secure, over half<sup>11</sup> of the enterprises still operating<sup>12</sup> cited some type of finance. Most were looking for debt finance to use as working capital, and several were seeking equity investment.

### Small enterprise, larger unmet financing needs

The research showed a correlation between unmet financing needs and size: a higher proportion of larger organisations by revenue report having no unmet financing needs.

Looking at organisations at the smaller end of the scale by revenue, only one reported having no unmet financing needs (this was Hydrologic, a wholly-owned subsidiary of the international charity iDE). The financing needs of small and growing energy enterprises have been noted and much discussed in other literature, and an in-depth analysis of this question is beyond the scope of this paper. However a good summary of these issues is provided in a briefing by the International Institute for Environment and Development on investment in low-income energy markets<sup>13</sup> which lists small returns, high ratio of transaction costs to investment size, political and economic instability, pricing, tax and subsidy regimes, and contract enforcement as barriers to investing in energy access enterprises. It is clear that in spite of the attention this problem has received, these issues are still barriers to small energy enterprises accessing finance.

### Grants for innovation

There were eight instances of grant support discussed for the research. These took the form of straight grants and a grant/repayable grant<sup>14</sup> combination. Grants are playing a significant role in enabling energy enterprises to innovate; for example, all the experiences of support for innovative financing models were provided by grants, such as in the case of the solar producer d.light working with the solar asset financing company M-KOPA to provide pay as you go solar systems, which was supported by USAID.

Flexibility in grant-giving can also be a key to success. One of the most successful grant experiences was particularly useful because of the flexibility allowed by the donor. In 2008–2009 the solar charity SolarAid received two grants of over £1m each from Barclays and MAN Group. Although the original agreements included commitments that SolarAid would manufacture solar lanterns in Africa and do large solar installations in schools, community centres and health clinics, the donors allowed SolarAid to change their approach. This was a 'pivotal' moment which enabled SolarAid to experiment with enterprise-based approaches, leading to the establishment of the social enterprise SunnyMoney, now the largest seller of solar lights in Africa.

**“We are starved of working capital.”**

CEO, large solar business

### Types of financial support experienced:

1. Grants
2. Social investments of debt
3. Social investments of equity
4. Grant/re-payable grant combination
5. Commercial equity
6. Commercial loans
7. Overdraft facilities
8. Carbon finance
9. Commercial loans leveraged with a loan guarantee



Pay-as-you-go solar systems for homes.  
Credit: Azuri Technologies

<sup>10</sup> Out of 28 recorded instances of financial support, 15 were for working capital.

<sup>11</sup> 9 out of the 14 enterprises interviewed.

<sup>12</sup> All the enterprises interviewed are still operating with the exception of ToughStuff.

<sup>13</sup> Wilson, Emma and Symons, L. International Institute for Environment and Development Briefing: Stimulating quality investment in sustainable energy for all. May 2013. <http://pubs.iied.org/pdfs/I7156IIED.pdf>

<sup>14</sup> A grant where the capital must be repaid, usually interest free.

### Example: Overly ambitious finance

One large solar enterprise shared that they received a large investment from a state-backed investment company. However the high returns expected pushed the enterprise to expand into multiple countries at the same time, before it was ready. The leader of this work said the investment “was crippling”.

### Example: Finance that starves

There were two examples of investment finance that had such exacting terms that they became a drain on the company. One of these was a loan provided to a small solar lantern company by a national bank. The reasons given for why it has not helped the company as intended are that the bank is not patient enough, the interest rate is too high and the repayments are eating into operational budgets.

### Unlocking local finance for working capital

Most enterprises interviewed recognised that most donors are not in a position to give money for working capital and they seek this either through social investors or through commercial finance.

There are however obstacles to small and medium-sized energy enterprises accessing finance from local banks such as requirements for collateral and life insurance, high interest rates, and the banks being unfamiliar with the sector and business models. Donors can help energy enterprises overcome these obstacles by leveraging their own financial collateral or trusted brand to reduce the risk factors that make commercial finance providers wary of investing.

An example of this was in 2012 when a state aid agency provided a loan guarantee of over US\$1m to a solar business operating in East Africa. This enabled the business to receive a loan from a local bank in local currency, which was beneficial as it did not leave them vulnerable to exchange rate fluctuations. The Managing Director says that without this guarantee they never would have received the loan from the local bank, as these banks tend to be very conservative.

### Terms and conditions for growth

Although innovative and beneficial the example above had some challenges – the interest rate charged by the local bank was high at 24%, and the money was dispersed in tranches, with subsequent tranches being released only once repayments had been made. This prevented the organisation being able to take advantage of the benefits of having a large amount of cash, such as discounts for large orders.

To address these types of challenges, there is also a role for donors providing leverage to negotiate favourable terms, particularly with patient investors who may be more open to lower interest rates and more flexible repayment structures.

The enterprises identified that the key factors that led to success in receiving financial support were those that had straight-forward processes for accessing the finance, where the finance provider was ‘hands off’ with the enterprises’ operations, and where reasonable interest rates were applied<sup>15</sup>.

The experiences where finance was not successful highlight a number of key issues for energy enterprises, investors and donors. First, the lack of choice of available finance can push enterprises to accept unworkable terms, or overly ambitious return schedules. Also, investors should recognise that maintaining an open dialogue and working in partnership with enterprises will mitigate financial risks – in the ‘overly ambitious finance’ example on the left, the investor expressed that they could have adjusted the terms if the enterprise had discussed their needs, however the enterprise did not think this was an option at the time.

### The need for speed

Of the four instances where financial support was not successful, speed was identified in two cases as the reason why. In one case a loan from a government investment agency simply took too long to be useful to the enterprise; it took two and a half years for the loan to be agreed, by which time the enterprise was in considerable difficulty. Another enterprise had not yet received a grant/repayable grant combination for which they had been approved 18 months previously because the giving organisation was so slow to respond to the enterprise, taking over six months to reply regarding a disagreement in the terms of the contract.

Even for financial support that was successful, speed was cited three times as something that could have been better. This is particularly important because delays can impose extra costs on an organisation. For example one solar company had to take a bridging loan to tide them over until their equity investment came through. Several organisations also reported that being short of cash meant having to buy stock in small amounts so missing out on bulk discounts.

<sup>15</sup> The term ‘reasonable’ is obviously open to interpretation, and is a balance between being low enough that the loan is not a burden on the enterprise and being high enough that established finance markets are not undermined.

Again, these experiences point to a shortage of appropriate finance: if opportunities were not so few and far between, it is probable that the need for speed when opportunities do arrive would not be so vital. There is a need for all investors to move more quickly, and for more agile investors to move into the sector, supporting energy enterprises with speedier finance. For example, the leaders of two solar companies said that their experience was that private individual investors have been the best to work with, and would like more introductions to family investment offices. One organisation criticised social investors, saying they “suffer from not having a time imperative to work in”.

### Appropriate levels of due diligence

Related to this issue of speed is the due diligence process<sup>16</sup>, which can be very slow and was cited four times when asked what could have been better about financial support. In spite of finding due diligence painful (“excruciating” was how it was described by one organisation), most of these organisations seem to feel that the process was worth it, and most still gave the financial support the maximum score for usefulness. There was one exception to this, regarding a social investment of approximately a quarter of a million US dollars. The receiving organisation gave this a usefulness score of 3 rather than the maximum of 4 because they felt that spending so long doing due diligence meant that they might have missed out on other opportunities.

There is of course a strong argument in favour of a rigorous due diligence process from the investor’s point of view. This must be balanced with not placing too much of a burden on the recipient, however, particularly if it means the process takes so long or takes up so much capacity that it causes the enterprise to miss other opportunities or to sign up to a financial product which becomes a drain on the organisation. A good due diligence process will strengthen an enterprise, not weaken it.



A Barefoot Power entrepreneur at work.  
Credit: Ashden



Demonstrating a Nova D.Light at a stall  
in Chamieyani, India.  
Credit: Ashden

<sup>16</sup> Investigating the company’s sales, financials, and market.



Training new SolarNow retailers.  
Credit: Ashden

## Lessons on supporting energy access enterprises: technical assistance

Technical assistance identified in the interviews ranged from support to improve sales and marketing to building capacity in staff and management<sup>17</sup>.

When asked how useful technical assistance had been even the enterprises that rated support as unsuccessful often endorsed the support as useful. This is likely to be because although the original aims were not always achieved, there were unexpected benefits.

One example of this comes from when Ashden enabled a business mentor to be sent for two weeks to one of its Award winners. The initial aim of the support was to help the for-profit subsidiary of the NGO to operate more effectively. Although this aim was not achieved, the support experience helped the leader to realise that a new organisation would be needed. He eventually set up EcoZoom, which is now a thriving business selling improved cook stoves in East Africa.

### Niche sector, specific needs

A number of the respondents had transitioned from a charity to an enterprise, and they identified that they had been offered a lot of support during this transition but that this had met with mixed success. This is a specific requirement in this sector where some energy enterprises begin as charitable operations. In some cases this support was not successful because the recipients themselves were not sure what they needed. To avoid this, experienced technical assistance providers could explore needs in more depth and provide more guidance during the initial discussions to design the support. It could also be that a certain amount of trial and error at this phase must be accepted.

### Wanted: independent advice

One enterprise identified a lack of independent financial advisors with relevant expertise and understanding for energy access enterprises. They wanted an advisor who could look at their needs and their offering, identify the type of finance that they needed, and suggest who they should approach for financing. This enterprise identified lack of independent financial advice as a significant unmet need.

It was also noted that most providers of financial advice who help enterprises identify their needs have some vested interest in selling a particular product or service – especially with regard to reaching investment readiness and finding appropriate financing. Increasing the visibility of available independent advice in the sector would benefit energy enterprises.

### Expertise and experience: no space for compromise

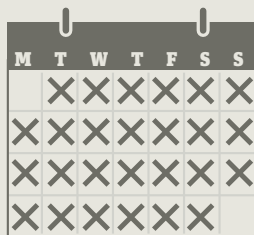
Enterprises said that a key element of successful technical assistance was individuals who brought the right experience and expertise. This sounds obvious but in a niche sector, where the availability of such expertise and experience is limited, technical assistance providers and enterprises can be tempted to compromise.

One example of the successful technical assistance support is that given to the improved cook stove business Sustaintech by the Indian social enterprise incubator Villgro. Now that the business is past the start-up phase, Villgro are providing advice during the scale-up phase, for example on issues such as computerisation and management information systems. This advice is provided over the phone or via email, and has been on-going since 2010. Svati Bhogle, Founder and MD of Sustaintech, said it works because “They meet our needs, and they listen to our needs. They are supportive but don’t impose. They have a good pool of people whom they make available with different competencies. They are local and understand our situation.”

## Energy enterprises technical assistance requirements:

- Impartial financial advice
- Independent advice on achieving investment readiness
- Social enterprise training for those without business experience
- Sales and marketing advice
- Enough time for business mentor placements, usually at least a few months
- A good match between the enterprise’s needs and expertise/experience of mentors and consultants

<sup>17</sup> Other aims were: separating two parts of an organisation, on-going legal advice, improving business structure and processes, variable (adjusted to fit secondees’ skills), increasing donations, reviewing salary levels, growth/implementing business plan.



**Duration of support**  
is a key factor in the success  
of technical assistance



**Availability of sales and  
marketing advice needs  
to increase**



Clean cook stoves being sold in Goma, DRC.  
Credit: Martin Wright

### Successful advice takes time

The length of time devoted to an assignment emerged as an important factor in determining whether or not business mentoring and consultancy meets its aims. Having enough time was the third most cited reason for what made technical assistance successful, after the experience and expertise of the consultant. Duration was also the only reason cited more than once for why advice support did not work.

The significance of duration seems most important when looking specifically at times when a business mentor is placed with an organisation full time. Of the four incidents of this type, those that lasted for two or three weeks were unsuccessful, while those that lasted for two or three months were judged a success. This is backed up by the interviewee from Challenges Worldwide, an organisation which places experienced business volunteers with organisations, who said that length of assignment is a key factor in determining success in this type of support.

### Sales and marketing matter

Support for sales and marketing is an area that the research identified as important – those enterprises that had received good support in this area recognised it as vital for the organisation, and others keenly felt the lack of it.

While many working in organisations dedicated to serving the poor may feel uncomfortable with a focus on sales, for enterprises to succeed good sales and marketing is vital. A lack of training in sales and marketing was cited as a problem by a solar company, and an improved cook stoves business said it could not find finance to invest in sales and marketing. Outside this research, other sustainable energy enterprises have also expressed a keen interest in receiving sales and marketing advice. The Whitten and Roy Partnership case study below is an example of successful technical assistance in this area.

## Barefoot Power and Whitten and Roy Partnership

Whitten and Roy Partnership is a consultancy that teaches organisations how to sell their products effectively. They have a distinct philosophy and technique behind their approach, and work for both purely commercial and social enterprises. They are the only support provider Ashden has worked with that specifically advises enterprises on how to sell products.

Whitten and Roy Partnership received outstanding feedback from the two organisations interviewed that have used their services, and both of these organisations have undertaken multiple pieces of work with Whitten and Roy's consultants, investing significant amounts of time and their own resources in the work.

Ashden introduced Barefoot Power to Whitten and Roy Partnership in 2012, and helped to fund the initial piece of work between the two organisations. Since then Barefoot Power has continued to work with Whitten and Roy Partnership, with fantastic results – the value of their order book has gone up tenfold.

Rick Hooper, CEO of Barefoot Power, said of the work: “There has been a cultural change... Before we were a group of 100 starry-eyed recent graduates who were going to change the world. Now we have professionals who know how to position us in the market.”

**Links between payment and support success**

It is commonly thought that in order for technical support to be owned by an enterprise, it is necessary that the enterprise has a stake in the support, normally by making a financial contribution. If we look at who paid for the support and how this relates to the success rate, we see that there were no unsuccessful incidents where the receiving organisation fully paid, which supports the common view.

However, most instances of pro-bono advisory support were also successful and the instances when a third party paid were nearly evenly split between successful and not successful. How the advice was financed was not identified by the interviewees as one of the factors for success, and there were common factors across experiences regardless of who paid.

The results on whether money buys ownership of technical assistance are therefore inconclusive. They do show, however, that technical assistance given pro bono or wholly funded by donors or investors can be a success, and therefore a financial contribution from the receiving organisation is not always essential.

**Training and education**

In the area of training and education, two thirds of the support experiences were for business training for the enterprise founder and the remainder were for staff training. The majority of the respondents in this area had run charities and wanted to set up for-profit entities, and felt they needed more business training to do this successfully.

Three of the reported instances of education were Ashden Award winners attending the INSEAD social entrepreneurship course in order to learn how to transition from running an NGO to setting up a social enterprise. Ashden offered and paid for the leaders of these enterprises to attend the course, and all found that the experience achieved its aim of educating them about running a social business. Willem Nolens, Managing Director of SolarNow said: "It motivates, gives energy. I am very enthusiastic about it. A year later I sent my colleague to it and we paid for it ourselves."

## Lessons on supporting energy access enterprises: picking winners

Energy access enterprises work in an innovative, challenging space where successful business models are not always proven and their dual aims of being for profit and for social good can create additional challenges. The success of an energy enterprise is not, however, just about its business model. This research asked five financial and technical assistance support providers to identify what criteria are important in determining whether they will provide support to an organisation, and how they decide which enterprises are the most likely to be a good investment of their time and resources. Two clear themes emerged: management capacity and ownership of support.

### Management capacity

Among providers of both finance and technical assistance, the characteristic that was most cited as likely to lead to success was the management capacity of the receiving organisation. A report by the Enterprise and Industry Directorate-General of the European Commission<sup>18</sup> defines management capacity as including “understanding the running of the business and of the potential opportunities or threats, including visions for further development of activities” alongside capacity to lead on “human resource management, accounting, financing and marketing”.

The definition above refers mainly to the skills required by successful managers. Our research findings reflect this view as the evidence of these skills lies in a track record of success and the capability (including appropriate education) of management, which were the key factors identified by the support providers interviewed as indicators of sound management capacity.

### Ownership of support

After management capacity, the next most-cited indicator that support providers look at is the extent to which the people who work at the enterprise, particularly at the top level, are willing to participate in the support programme and be open to implementing new ideas.

There were several instances where enterprises receiving technical assistance said that there were things they were responsible for that led to the experience not being successful, or contributed to it not working as well as it could have done. For example Barefoot Power said that their initial experience of working with Whitten and Roy Partnership could have been even more successful if they had had all of the leadership team involved from the beginning.

<sup>18</sup> Enterprise and Industry Directorate-General of the European Commission, ‘Management Capacity Building’. September 2006. [http://ec.europa.eu/enterprise/policies/sme/files/support\\_measures/mcb/mcb\\_en.pdf](http://ec.europa.eu/enterprise/policies/sme/files/support_measures/mcb/mcb_en.pdf)





Cooking dosas on an efficient TIDE stove.  
Credit: Ashden



Cooking on an EcoZoom stove.  
Credit: EcoZoom

## Lessons on supporting energy access enterprises: additional factors that influence the ability of energy access enterprises to thrive

We also asked the enterprises what factors other than their own access to finance or technical assistance were holding them back and three key themes emerged: operational challenges, particularly finding and retaining the right staff; customer purchasing power; and the wider business operating environment.

### Operational challenges – the right people are key

Alongside the challenges identified above, the most commonly cited issue holding the enterprises back was staffing, including finding the right staff and high staff turnover. This was mentioned by half the enterprises interviewed.

None of the organisations interviewed seemed to be receiving any support to help them address these staffing issues. It is likely that poor education and training in the countries where the enterprises are operating is a factor contributing to this problem. While the enterprises cannot rectify this, more could be done to help them identify individuals with potential and provide effective training, and also to identify what kind of incentives could improve staff retention.

Other barriers that were mentioned were being able to find and manage the right distributors in Africa, distribution partners' access to finance, and counterfeits or substandard products which damage consumers' trust in the technology.

### Customer purchasing power

Customer purchasing power and customer access to finance were each mentioned once as barriers to customer purchases. It is surprising that so few respondents highlight this issue given the sector is specifically targeting people with low incomes – many assume customer finance is a key issue for energy enterprises. It is interesting to note that the two organisations that did cite this as a problem are the only two which are selling relatively high-value goods (US\$150+) to domestic customers and which neither provide customer financing themselves nor have a partnership with an organisation that does.

That so few respondents identified customer purchasing power as a barrier indicates that schemes to address customer financing are generally working where they are in place, and for high-value goods there is a need for them where they do not exist. Continued financial innovation is, however, still needed by energy enterprises for their products to become accessible to the most marginalised and vulnerable.

**The business operating environment**

Three of the 14 interviewed enterprises identified that national government policies were an external factor that affected their ability to thrive. Specific policies mentioned included kerosene subsidies, taxes and import duties.

Like all businesses, energy enterprises need an enabling operating environment if they are to be successful in the long term. An enabling operating environment is made up of policies, regulations and initiatives which create space for energy enterprises to grow and address energy poverty. There is a clear role for policy makers to play in putting in place national strategies for energy access that include both incentives for energy enterprises and disincentives for unsustainable energy practices.

The information provided in this report on finance identifies the need for changes in the operating environment to allow energy enterprises more opportunities to access finance for working capital, for example by building confidence in these enterprises among local financial institutions.

All stakeholders in the energy enterprise sector can play a role in encouraging policies and practices that enable energy enterprises to grow. For example policy influencers can advocate for a conducive operating environment and investors can showcase how they have successfully managed the risks of their energy enterprise investment, opening the space up to new investors.



Azuri's IndiGo unit is paid for in installments using scratchcards.  
Credit: Azuri Technologies

## Conclusions

While many energy enterprises are serving significant numbers of people, 1.3 billion people still have no access to electricity, and nearly three billion cook over open fires or with inefficient cook stoves. Supporting enterprises that are delivering clean energy access lifts people out of energy poverty – it enables women and men to access better health, education, and economic opportunities.

The conclusions below relate specifically to the findings of this research and the following recommendations identify how, with consideration of Ashden and Christian Aid's broader experience, we believe donors, investors, technical assistance providers, and policy makers can be part of the solution to the problem of energy poverty.

### **What types of support do energy access enterprises need?**

This research has found that energy access enterprises have an on-going need for financial and technical assistance support. The greatest financial need is for working capital in the form of debt (loans and credit lines). Need for this kind of finance is greatest amongst small and medium sized energy enterprises.

Grants are also needed, particularly to support innovation. Also, although donors are not necessarily well placed to provide working capital, there is an opportunity for them to use their resources and reputations to leverage working capital, with favourable terms, for energy enterprises.

The technical assistance needed by energy enterprises ranges from assistance for transitioning from a non-profit to a for-profit to more support with sales and marketing. Impartial finance and business development advice has been identified as a significant gap in the sector at present which could be filled by both technical assistance providers and independent advisors.

### **What are the characteristics of successful support?**

Unsurprisingly successful technical assistance is based on a good match of experience and expertise; this sounds obvious but in a sector with such specific needs it can be tempting to compromise. Alongside this, time given to technical assistance is directly linked to its impact.

More financial support needs to be available that is low cost, flexible and agreed without lengthy delays. Due diligence processes, partly used to identify risk, need to be rigorous but not so lengthy and onerous that they undermine the capacity of the enterprise concerned. Given the innovative nature of the energy enterprise sector, investors can better manage the risk and return of their investment if they have an open, constructive dialogue with the enterprise concerned.

### **What organisational characteristics indicate that an enterprise is likely to be able to make use of support?**

The research identified that management capacity to act on any technical support is essential for long-term impact and management ownership of the support is essential for buy-in. Although not conclusive, the report does show instances where enterprises have not paid for their support yet it has still been successful, challenging the view that it is necessary for the enterprise to contribute financially to ensure buy-in.

**What other factors influence the ability of energy access enterprises to thrive?**

The research participants identified securing and retaining the right staff as a key challenge for their enterprises.

Customer purchasing power was not identified as a challenge by the majority of respondents, however those selling higher value products and not offering customer financing did cite it as a problem. Energy enterprises need to continue to innovate so that their products become financially accessible to the most vulnerable and marginalised.

The business operating environment was also identified as a key area which can promote or undermine the long term growth of energy enterprises. All stakeholders in the sector have a role in encouraging the development of conducive environments for energy enterprises. This could be through encouraging national strategies for energy access, or showcasing successful investments that will encourage other investors to support these enterprises.

Energy access enterprises face many challenges but this research shows that where financial and technical assistance support is delivered well it is playing a catalytic role in their development. This is shown in the flexible grants that led to the creation of SunnyMoney, now the largest seller of solar lights in Africa; the social business education that helped the leader of Rural Energy Foundation set up the business SolarNow; and the advice that revolutionised Barefoot Power's approach to sales, leading to a ten-fold increase in their order book. By learning from these successes, investors and technical support providers can lift significantly more people out of energy poverty by ensuring, through energy enterprises, that they can access the modern energy services they need to thrive.

## Recommendations

### Donors

**Your grants are making a difference to energy access enterprises. They are helping them innovate and expand to further reduce energy poverty. You could have an even greater impact if you:**

- Use your resources and trusted brand to leverage working capital for energy enterprises, for example through loan guarantees. You can also help to negotiate reasonable terms for this finance that enable energy enterprises to thrive.
- Implement a straight-forward, adaptable process for receiving and managing grants that does not place disproportionate burdens on the energy enterprise.
- Focus your grant finance on growth, new programmes, and innovation within the energy enterprise sector.
- Support your energy enterprise partners by brokering and funding technical assistance from experienced providers with appropriate expertise.
- Ensure management capacity is in place to make good use of your resources.

### Investors

**Your investments are making a difference to energy access enterprises, they are providing vital working capital and finance for expansion. You could have an even greater impact if you:**

- Respond to energy enterprises' need for debt for working capital and negotiate terms that enable them to thrive.
- Target social investment at small and medium sized energy enterprises, helping them to improve their chances of securing commercial finance in future.
- Make financing decisions in good time.
- Maintain an open dialogue and work in partnership with the enterprise throughout the relationship, as this can mitigate risk.
- Publically champion your experiences of how you have successfully managed the risks of investing in energy enterprises, so as to draw more investment into the sector.
- Ensure management capacity is in place to make good use of your investment.

### Technical assistance providers

**Your advice, training, expertise and experience have already made a huge difference to many energy access enterprises. The impact of your technical assistance on energy enterprises could be increased if you:**

- Strengthen and raise the profile of your sales and marketing support services.
- Ensure top-level buy in for your support and the management capacity to maximise its impact are in place; recognise that the enterprise making a financial contribution to support is not always necessary to ensure success.
- Provide mentors to energy enterprises for sufficient lengths of time (typically two months minimum for a full-time role).
- Consider whether you could help to deliver much needed impartial financial and business development advice to energy enterprises.

### Policy makers

**An enabling environment that creates space for energy enterprises to thrive is essential in bringing an end to energy poverty. You can contribute to this if you:**

- Put in place policies and support mechanisms for energy enterprises that create a conducive operating environment. This should include enabling energy enterprises to access finance, such as debt and equity from local and international investors
- Develop proactive national strategies for energy access; these must include both positive mechanisms that enable energy enterprises to thrive, and the responsible phasing out of policies that encourage unsustainable energy usage (e.g. kerosene subsidies).



A student in Zambia with an s1 solar light  
Credit: Steve Woodward/SolarAid

## Appendix A

### Energy access enterprises interviewed

#### Azuri Technologies

Azuri Technologies provides small solar home systems which bring good quality light and phone-charging to off-grid households and save them money. Usually the upfront costs of these systems render them out of reach for the people who would benefit most from them, but Azuri has developed a pay-as-you-go interface which allows households to pay for solar power as they use it with scratchcards, making them affordable to those who need them. Azuri currently has operations in East and West Africa.

#### Barefoot Power

Barefoot Power is rolling out a wide range of affordable solar power products at speed across Africa, brightening up the lives of those with limited or no access to grid power. Products range from single desk lamps to complete kits for use by homes, clinics and schools. To reach large numbers of people, the company sets up and supports distributors in each country of operation, helping them build a sales and service network, and also works with microfinance organisations who can provide loans. Barefoot Power products are sold around the world.

#### Cabéolica

Cabéolica in Cape Verde off the West Coast of Africa has harnessed the country's plentiful winds to help reduce diesel imports and increase energy security. The only business in our sample which feeds into the main grid, in the company's first year of commercial operation, 25.5 MW of wind farms have generated over a fifth of the electricity used across the four main islands – reaching more than 30 percent on two islands.

#### d.light

d.light designs high quality, low cost solar lanterns, phone-charging, and home systems which are sold across the developing world. Products cost between \$8 and \$200, making them affordable even to people with very low incomes. d.light has grown rapidly and has now sold over 6 million products which are improving health, safety, and educational opportunities.

#### EcoZoom

EcoZoom is a social enterprise that makes clean burning, portable wood and charcoal powered cookstoves. EcoZoom rocket stoves burn wood, charcoal, or solid biomass fuel efficiently while significantly reducing smoke output. Because EcoZoom stoves are so efficient, less dangerous smoke is inhaled by cooks, less natural resources are needed for fuel, and less time and money is spent gathering fuel. EcoZoom has an international office based in Nairobi, Kenya.

#### Hydrologic

Hydrologic's energy-saving ceramic water filters mean rural families have safe drinking water without using wood to boil it, so protecting Cambodia's precious forests as well as health. The affordable filters are sold to NGO programmes, and via shops and rural sales agents. As well as saving children's lives and improving household productivity, the impact on the environment is equally impressive: the use of largely unsustainable wood is being reduced and there are significant reductions in CO<sub>2</sub> emissions.

#### Noble Energy Solar Technologies (NEST)

NEST is an Indian-owned business which has developed a small and practical solar lantern. Costing about US\$35 each, the lanterns are self-funding in one to two years depending on the kerosene saved. There is no subsidy involved, and NEST uses a network of independent dealers to maintain the lamps and organise the financing.



**Nishant Bioenergy**

Nishant Bioenergy designs and sells efficient stoves for use in businesses and schools. These stoves are fuelled by the crop waste produced by local farmers, which Nishant makes into pellets. The stoves cost around US\$180 each, and the saving on fuel (LPG) is around 50%. Nishant also arranges credit to enable the schools to invest in the plant and provides training and maintenance.

**SELCO**

By working with local banks and microfinance organisations, SELCO has given nearly 140,000 homes across Southern India access to more reliable and more cost-effective sources of power through tailored solar systems enabling children to do their homework and women to devote more time to income-generating activities. They also provide systems for market-stall holders and other small businesses.

**SolarAid/SunnyMoney**

SolarAid is a leading international charity that provides access to clean, affordable solar lights through their for-profit subsidiary SunnyMoney. Based in London and already working in Kenya, Malawi, Tanzania and Zambia, SunnyMoney sells a range of high quality solar lights. By catalysing the market and ensuring the availability of quality solar lights, SolarAid is replacing kerosene lamps with clean, safe and affordable alternatives.

**SolarNow**

SolarNow sells, installs and services high quality solar home systems for rural households and entrepreneurs in Uganda. Established in 2011, SolarNow has designed an innovative, modular product range that is distributed through a franchise network in rural Uganda. Clients benefit from 12 months credit and 24 months free maintenance and warranty. A state-of-the-art back office system ensures complete and correct client information is available in the field at all times.

**Sustaintech**

Sustaintech is an off-shoot of the award-winning organisation TIDE, which recognised that some of their technologies were effective in achieving fuel efficiency but that their products were not reaching the market to the maximum extent possible. Realising the power of market-based mechanisms, TIDE set up Sustaintech to market its fuel-efficient cookstoves to roadside eatery owners. These stoves are designed to be environmentally friendly and consumer friendly and work with a variety of fuel types.

**Zara Solar**

Zara Solar, a leading solar business in northern Tanzania, is providing people with high quality and affordable solar PV systems. In order to reach more remote areas, Zara Solar uses a network of trained local technicians that can service their own local customer base as well as providing customers with sufficient training to maintain the system properly once it is installed.

## Appendix B

### Support providers interviewed

#### Nicola Armacost, Arc Finance

Arc Finance is a global non-profit that brings together practitioners, funders, pro-poor enterprises, and end-users to develop solutions for access to finance for clean energy and water. Their expertise is in providing the tools, technical services, catalytic investment, and linkages that allow these diverse groups to find common opportunity and achieve mutual benefits.

Nicola Armacost, Co-Founder and Managing Director, has over 17 years' experience in microfinance throughout Africa, Asia, Latin America and Eastern Europe. Prior to founding Arc Finance in 2008, she served as the Director of Linkages and Learning at Women's World Banking. Niki serves as an advisor to several start-up companies and NGOs around the world.

#### Eoghan Mackie, Challenges Worldwide

Challenges Worldwide supports entrepreneurs and enterprises to strengthen their skills and abilities, by delivering quality services that would otherwise be difficult for small- and medium-sized enterprises to access. CWW has a network of professionals who have in-depth experience of the private sector and provide their expertise and services on a pro-bono basis, and CWW engages and manages these individuals to deliver the brief specified by the clients.

Eoghan Mackie, Chief Executive, has over 10 years' experience working with social enterprise and SME development in emerging economies.

#### Emma Caddy, ERM Foundation Low Carbon Enterprise Fund

The Low Carbon Enterprise Fund is an initiative of the ERM Foundation. It provides finance, technical and management support for small low carbon social enterprises in the developing world. To date, the Low Carbon Enterprise Fund has invested in eleven low carbon businesses in Africa, Latin America and Asia and has provided pro-bono technical and management support for many more.

Emma Caddy, Development Director has extensive experience in pro-poor, climate and biodiversity-friendly investing and business development in developing countries. She joined the LCEF in 2008 and has been responsible for origination, due diligence, deal structuring and execution of investments into the fund.

#### Peter George, GVEP

GVEP International is a non-profit organisation working to alleviate poverty in developing countries through increased access to sustainable, renewable energy. To achieve this goal, GVEP supports the development and growth of small and medium-sized enterprises that deliver energy products and services to the poor.

Peter George, Head of Advisory Services, joined GVEP in 2010. Prior to this he was an associate at ArcLight Capital Partners, an energy-focused private equity firm based in Boston, and also has experience as a senior investment banking analyst in the Global Energy & Power Group at Merrill Lynch.

#### Roy Whitten and Scott Roy, Whitten and Roy Partnership

Whitten and Roy Partnership provides sales advice and training to both purely commercial and social enterprises. They aim to change attitudes to sales, and teach sales people to address their customers' needs.

Roy Whitten, partner, has extensive experience in both the for-profit and non-profit sectors including sales, strategic planning, marketing, board directorship, and the design and delivery of performance training.

Scott Roy, partner, has over 35 years' experience developing excellent leaders and building sustainable, high-performance teams, organisations and companies in for-profit, non-profit and development contexts.

## Organisations that provide support to energy access enterprises

## Appendix C

(including but not limited to those mentioned by interviewees)

**Acumen** [www.acumen.org](http://www.acumen.org)

**Advocates for International Development** [www.a4id.org](http://www.a4id.org)

**African Development Bank** [www.afdb.org](http://www.afdb.org)

**African Enterprise Challenge Fund** [www.aecfafrica.org](http://www.aecfafrica.org)

**Arc Finance** [www.arcfinance.org](http://www.arcfinance.org)

**Bamboo Finance** [www.bamboofinance.com](http://www.bamboofinance.com)

**Barclays Corporate Banking** [www.barclayscorporate.com](http://www.barclayscorporate.com)

**Carbon Neutral Company** [www.carbonneutral.com](http://www.carbonneutral.com)

**Challenges Worldwide** [www.challengesworldwide.com](http://www.challengesworldwide.com)

**Deutsche Bank** [www.db.com](http://www.db.com)

**ERM Foundation Low Carbon Enterprise Fund** [www.ermfoundation-lcef.com](http://www.ermfoundation-lcef.com)

**European Investment Bank** [www.eib.org](http://www.eib.org)

**FMO Funds** [www.fmo.nl](http://www.fmo.nl)

**Good Energies Foundation** [www.goodenergies.com/foundation](http://www.goodenergies.com/foundation)

**Grey Ghost Ventures** [www.grayghostventures.com](http://www.grayghostventures.com)

**Greater Impact Foundation** [www.greaterimpactfoundation.com](http://www.greaterimpactfoundation.com)

**GVEP International** [www.gvepinternational.org](http://www.gvepinternational.org)

**International Finance Corporation** [www.ifc.org](http://www.ifc.org)

**Impact Finance** [www.impact-finance.com](http://www.impact-finance.com)

**Impact Growth Advisers** [www.impactandgrowth.com](http://www.impactandgrowth.com)

**INSEAD** [www.insead.edu](http://www.insead.edu)

**IP Group** [www.ipgroupplc.com](http://www.ipgroupplc.com)

**Lemelson Foundation** [www.lemelson.org](http://www.lemelson.org)

**McKinsey** [www.mckinsey.com](http://www.mckinsey.com)

**MyClimate** [www.myclimate.org](http://www.myclimate.org)

**Nexus Carbon for Development** [www.nexus-c4d.org](http://www.nexus-c4d.org)

**Norfund** [www.norfund.no](http://www.norfund.no)

**Omidyar Network** [www.omidyar.com](http://www.omidyar.com)

**Partners Group** [www.partnersgroup.com](http://www.partnersgroup.com)

**Rianta Capital Artha Platform** [www.arthaplatform.com](http://www.arthaplatform.com)

**Santa Clara University Global Social Benefit Institute** [www.scu.edu/socialbenefit/entrepreneurship/gsb](http://www.scu.edu/socialbenefit/entrepreneurship/gsb)

**Shell Foundation** [www.shellfoundation.org](http://www.shellfoundation.org)

**UNDP** [www.undp.org](http://www.undp.org)

**USAID** [www.usaid.gov](http://www.usaid.gov)

**Villgro** [www.villgro.org](http://www.villgro.org)

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