

Report from Uganda

CASE STUDIES OF IMPROVED COOKSTOVE COMPANIES

AEST

Awamu Biomass Energy

Green Bio Energy

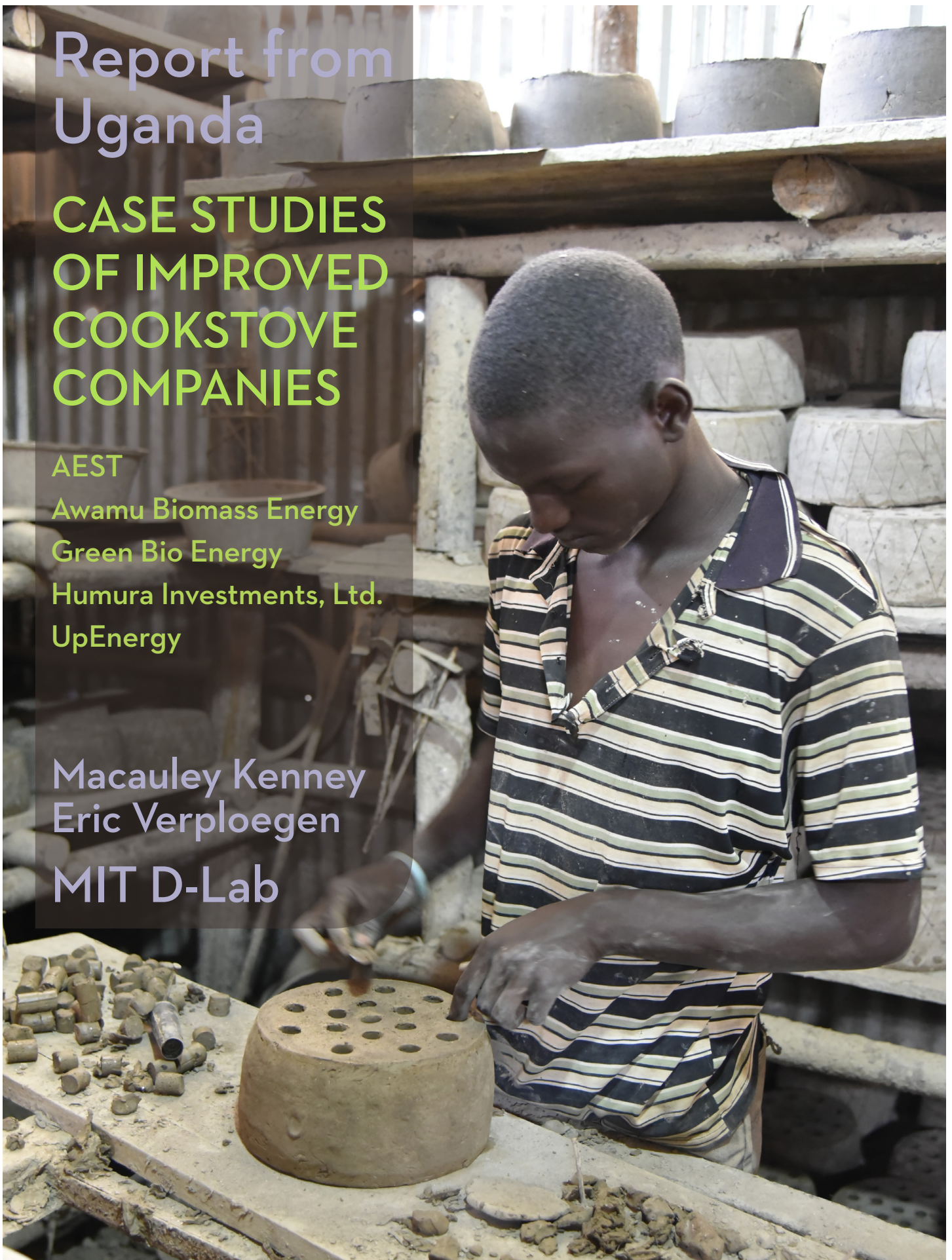
Humura Investments, Ltd.

UpEnergy

Macauley Kenney

Eric Verploegen

MIT D-Lab



Acknowledgements

This research was conducted out of the Off-Grid Energy group in the MIT D-Lab. D-Lab is a Cambridge-based initiative that works in communities around the world to combat global poverty challenges. The organization has been involved with in clean cooking technologies since the early 2000s, and has conducted extensive research on Improved Cookstove technology in East Africa.

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Related Content

These case studies are a part of D-Lab's research effort on scaling Improved Cookstove (ICS) companies, which investigates what resources are necessary for low-risk growth and how leaders of ICS companies can obtain these resources.

The full research report can be found at: <https://d-lab.mit.edu/off-grid-energy/scaling-cookstove-companies>

D-Lab



Appropriate Energy Saving Technology

Company at a Glance

Operational Since: 2013

Number of Employees: 15

Primary Product(s): Improved charcoal stoves, briquettes

Manufacturing Process: Manufactures stoves entirely in-house

Distribution Process: Distributes through networks of female micro- entrepreneurs

Stoves Sold as of December 2016: 11,595

Company Mission

“Appropriate Energy Saving Technologies (AEST) LTD is woman-led social enterprise that creates livelihood opportunities for women in the cook stove and fuel value chain in Eastern Uganda. It was founded in June 2012 in response to the increasing scarcity of firewood and wood charcoal in Uganda, and the need for clean sustainable alternative sources of cooking fuel .The enterprise aims to eradicate over dependence on wood fuel in Uganda by making organic charcoal for cooking from agricultural waste as an alternative to wood fuel among households and institutions in urban and peri urban areas in Eastern Uganda”(http://aestug.com)

Company Origin

Sisters Betty Ikalany and Helen Ekolu founded AEST together in 2013 with the goal of creating a women-centric enterprise that sold charcoal briquettes. The two grew up around inefficient and emission-emitting charcoal and wood-burning cookstoves and, after hearing about energy-efficient charcoal briquettes, they recognized the impact the products could have on the health and wellbeing of women when cooking. At the time Betty was completing her master's abroad in the Netherlands, but upon her return to Uganda they began Teso Women Development Initiatives (TEWDI), a non-profit dedicated to poverty alleviation and gender equality, and began producing briquettes.

Neither of them had experience with briquette creation, and they initially struggled with production and material selection and faced criticism and ridicule from the community. Early mentorship from The Charcoal Project and MIT's Development Lab (D-Lab) smoothed out the briquette production process and inspired the sale of improved cookstoves. This mentorship was paired with financial support, which allowed for Betty to transition to working full time on the venture. Appropriate Energy Saving Technology (AEST), a for-profit company selling briquettes and cookstoves, arose from their efforts, and Betty and Helen incorporated AEST in 2014 and TEWDI as an affiliated non-profit in 2014.

Betty and Helen now split their time between TEWDI and AEST, and continued successful operation and international attention has changed the public mindset to one of support. Betty is the CEO of AEST and an active member in the local community of Soroti, and the international clean cooking sector. Helen designs new features for improved cookstove models, and is working with the Global Alliance for Clean Cooking (GACC) on a training program to assist female entrepreneurs through pre-recorded audio lessons.



Left to right: Accountant Everlyne, sales manager Mary Josephine, and co-founder Betty Ikalany in front of AEST

Manufacturing

AEST's production facility, which includes, stove-making facilities, briquette extruders, and drying racks, is adjacent to the homes of Betty and Helen. At the onset briquette production was done by hand, but grant funding and machinery donations have advanced the manufacturing process so that it is now performed by human and diesel powered mechanized devices.

Stove production has always been by hand, and remains so. AEST produces its cookstoves entirely in-house, including sourcing the clay and firing the liner. Metal sheets are pounded into shape by the production workers, and the clay liner is fitted within the metal shell after firing. AEST workers form an assembly line, with each individual specializing in one aspect of production.

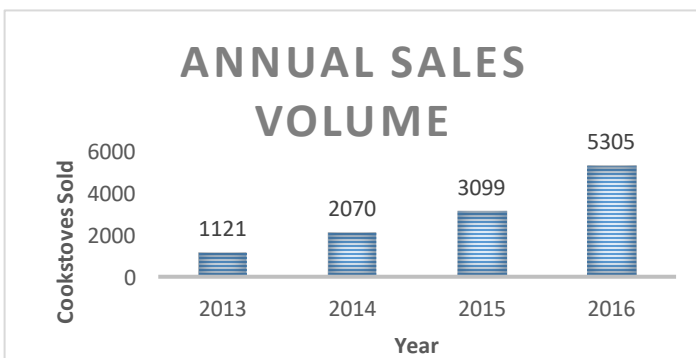


Makaa stoves and metal shells in the AEST production facility

Distribution

At first AEST sold its products through kiosks, but quickly realized maintaining the stalls was too expensive. Today AEST is marginally involved in direct door-to-door sales and tradeshows, but primarily rely on micro-entrepreneurs for product distribution. In keeping with the AEST mission of increasing female empowerment, most of these entrepreneurs are women. Although originally inspired by empathy, the company quickly learned to be more pragmatic when targeting who to invite into their distribution program, and it now tries to partner with women who demonstrate strong personal initiative and have an existing platform or business from which to sell the stoves and briquettes. Stoves are sold to micro-entrepreneurs at wholesale prices, and the company recommends the entrepreneurs set retail with a profit of 3,000 UGX. Sales manager Mary Josephine travels to nearby urban areas to onboard more entrepreneurs. Currently she stays within a 15km radius during these trips, but the company is actively looking to increase their geographic coverage, and its marketing, in the upcoming year, although they anticipate encountering language barriers as they do so.

Once a partnership has been formed the micro-entrepreneurs can begin selling immediately. AEST sees female empowerment and leadership as a critical factor to the success of the micro-entrepreneur, and the success of the company as a whole, and offers training for their micro-entrepreneurs to participate. Thus far the trainings have focused on improving professional and leadership skills and reached 55 individuals, and the company plans to host more training opportunities in the future.



TRAINING FOR SUCCESS

The AEST founders see training as a valuable component to a successful business, and have participated in many training opportunities to build their own business experience and technical knowledge. They pass along these lessons, and the lessons of their experiences in trainings within the clean cooking sector, and within the company network of micro-entrepreneurial distributors. AEST has trained 22 and 33 entrepreneurs over 5 and 3 days, respectively, on business skills and sales techniques and plans to host more training programs in the future.



Metal embosser used to brand the Makaa label on the stove



Completed Makaa stoves waiting for sale

MAAKA STOVES AND BRIQUETTES

AEST sells improved cookstoves (ICS) and charcoal briquettes under the brand Maaka. The Maaka Stove is a charcoal-burning ICS with a clay liner and metal shell. Three different sizes are available, and they sell for 18,000-55,000 UGX (\$5-\$15 USD), depending on the size in question. Maaka briquettes sell for 700 UGG (0.20 USD) per kg.



Challenges

Both Helen and Betty identify funding as the largest challenge to their current operations. AEST has seen some profits from its stove sales, but requires larger and more regular purchases to see similar gains in their briquettes. Margins are thin for both stoves and briquettes, and minor disruptions in the supply chain, such as equipment malfunction, can produce extended delays in production. External grants and fellowships have been critical to supporting operations for the past three years, and the company is currently seeking additional funding to establish a larger factory nearby and expand its marketing and sales operations. Carbon financing is not a viable option due to the high cost membership fees and time-intensive operational requirements, neither of which AEST can satisfy at the moment.



Briquette drying racks at the AEST factory. Briquettes are laid out and dried for 2-3 days before being bagged for sale.

Awamu Gasifier Stove



60,000/=



- ✓ 90% smokeless
- ✓ Cooks faster
- ✓ Saves 50% energy
- ✓ Makes charcoal

Uses:



Manufactured by:
Awamu Biomass Energy

Tel: 0700-398985 / 0776-346734

  awamubiomass | www.awamu.ug

Company at a Glance

Operational Since: 2013

Number of Employees: 8

Product: Improved gasifier stoves

Manufacturing Process: Manufactures stoves entirely in-house

Distribution Process: Distributes through end user sales and micro-distributors

Stoves Sold as of December 2016: 3,850

Company Mission

***Our mission** is manufacture clean and affordable cookstoves while creating employment, saving household incomes, reducing indoor air pollution and mitigating climate change.*

***Our vision** is become Africa's preferred brand of biomass stove"*

(<http://awamu.ug>)

Company Origin

Awamu Biomass Energy is the result of a partnership between Paul Anderson and Nolbert Muhumuza. Paul is a retired America professor who has been actively involved in the design and advocacy of top-lit updraft (TLUD) cookstoves since the early 2000s. In contrast, Nolbert is Ugandan with an educational background in computer science and limited prior exposure to improved cookstoves (ICSs). In 2009 he was looking for a career change, and was introduced to the Centre for Research in Energy and Energy Conservation (CREEC), an organization that works with ICSs.

The two men met at a Global Alliance for Clean Cooking conference in Uganda in 2009. They became involved in a two-year project for the Biomass Energy Initiative for Africa (BEIA) centered around TLUD cookstoves. At the end of project Paul and Nolbert felt that there was a market for greater TLUD adoption, and together they formed Awamu Biomass Energy. Their vision was to create a company that sold affordable TLUD stoves to last mile customers. Paul supplied the initial seed funding to jump-start operations, and the fledgling company relied upon CREEC for office space, mentoring, and internet access.

From the onset, Nolbert assumed the role of company CEO and managed all in-country operations. He is actively involved in the Ugandan clean cooking sector and chairs Biomass Energy Efficient Technologies Association (BEETA), a non-profit organization dedicated to the support and proliferation of renewable technologies. Paul has always been based remotely, and initially took an active role in refining the stove design. Today he primarily as an advisor to Awamu and engages with other companies and non-profits around the globe to promote TLUD uptake



Awamu CEO Nolbert Muhumuza

Manufacturing

Awamu is based in Kampala, and the company currently rents land from a local church for its production and office facilities. Its eight employees spend most of their time on ICS production, which is done entirely by hand, and have a production capacity of twelve stoves per day. While this style of manufacturing has been effective, Nolbert would like to gravitate away from human-powered, artisanal, manufacturing and towards mechanized production.



TOP LIT UPDRAFT (TLUD) STOVE

Awamu's primary product is the TLUD stove, which makes up 70% of the company's sales (remaining 30% of company sales come from biomass fuel and custom institutional stoves). Made almost entirely out of metal, the TLUD stove uses biomass (such as firewood) for fuel and can produce charcoal from that biomass when operated correctly. It sells at 60,000 UGX (\$16 USD) from retailers and 50,000 (\$14 USD) if bought directly from the company office. Since 2013 the Awamu TLUD stove has seen several different models, and the company plans to release its newest design (not pictured) in 2017. The current model has been tested for efficiency by CREEC, and the results are available on the company website (<http://awamu.ug/downloads>).

Awamu marks each stove with a serial number and keeps a record of its customers to make post-sale calls on customer satisfaction and product durability. Staff members attempt to contact customers via call or SMS once every two months to see if the stove requires servicing. A warranty is not currently included in the sale, but low-cost repairs at <5,000 UGX (\$1.50 USD) are available.



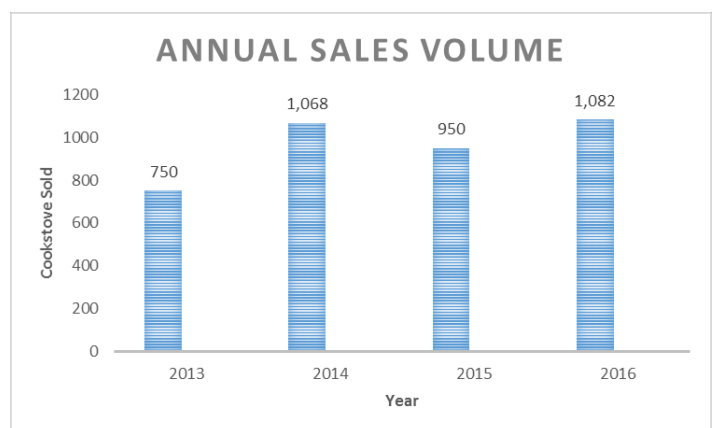
Distribution

Awamu utilizes two distribution strategies: trade fairs and exhibitions (40% of total sales), and a networks of micro distributors (60% of total sales). These micro distributors are usually local, entrepreneurial, business owners who have an existing store and can include Awamu's stoves into their product base. Originally Awamu provided stoves to its distributors on credit, but it quickly transitioned to a monthly payment system.

Distributor networks are located outside of Kampala in the central and eastern parts of Ugandan, and the company is attempting to penetrate the western regions in 2017. Distribution networks have not been established in Kampala because sales can be made directly from the production site, and because of the limited number of potential customers. The target customers for Awamu's flagship product, the TLUD stove, are peri-urban or rural households who still rely on wood as a source of fuel, and thus are unlikely to be found in the capital city.



Old models of Awamu TLUD stoves



Challenges

When interviewed, Nolbert identified two critical challenges to scaling Awamu: labor and marketing. Currently Nolbert is the sole officer for Awamu, overseeing all daily company operations and long-term strategy. Both he and Paul Anderson would like to bring on another manager, either on the ground in Uganda or remote, to help shoulder this burden, but have not been able to find the right candidate. Additionally, there is a need for more skilled labor in the production facility, but the company does not have the financial resources to bring on experienced staff.

Marketing is also another pressing need. Current marketing is limited to occasional paper flyers and the maintenance of the company website, but Nolbert would like to develop more promotional material if additional funds are provided to the company. The company saw a boost in sales following the publication of an article Awamu, and Nolbert believes that additional marketing would have a similar effect and greatly improve sales.

The common theme in these two challenges is a lack of financial resources: money is needed to hire additional employees, and to increase marketing activities. Awamu is supported by a combination of grants, debt, equity, and revenue, and is looking to take on more capital in order to increase its operations. The strategy for this is through additional grants, but Nolbert expressed some interest in raising venture capital in the future.



Nolbert displaying an old model of the Awamu TLUD stove in the production facility





Green Bio Energy

Company at a Glance

Operational Since: 2011

Number of Employees: 110

Primary Product(s): Improved charcoal stoves, briquettes

Manufacturing Process: Manufacture stoves entirely in-house

Distribution Process: Sell wholesale to large distributors

Stoves Sold as of December 2016: 47,101

Company Mission

“Green Bio Energy (GBE) is a Kampala-based socially-oriented business whose primary focus is the promotion of green energy through innovative and self-sustaining solutions aimed at continuously improving the local population’s quality of life.”

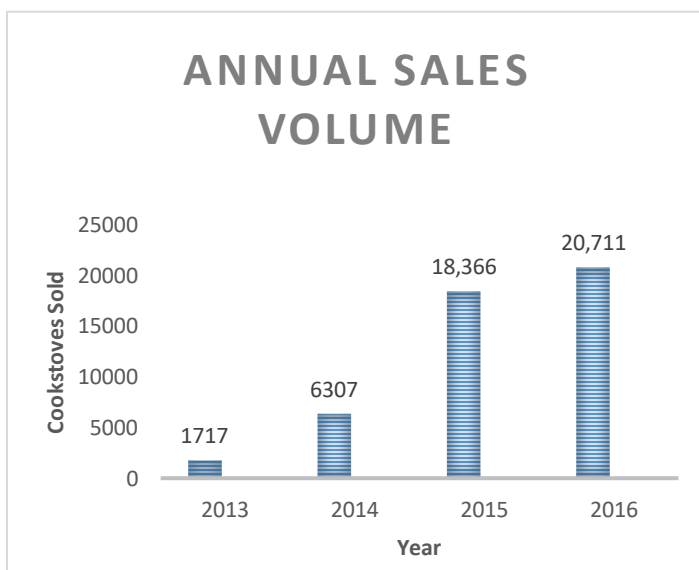
(<http://greenbioenergy.org>)

Company Origin

Vincent Kienzler was performing research for his PhD in Uganda in 2011 when he met Alexandre Laure, a program manager at the French embassy. Neither had experience with charcoal briquettes or ICSs at the time, but Alex had the idea to create and sell charcoal briquettes, and invited Vincent to join him in forming a company. Unconvinced of the market potential for briquettes, Vincent saw the opportunity as a learning experience and together he and Alex registered GreenBio Energy in 2011. They had grown to a company of 20 in 2012 and were selling carbonized briquettes under the brand Briketi when they were joined by David Gerard, a French national who had finished his master's and applied on a whim for the role of business manager, intending to only stay six months. Alex left the company in 2013 to pursue other opportunities, and David stepped up to assume the role of Deputy Managing Director. That same year Green Bio Energy began producing its own line of improved charcoal cookstoves (ICSs) to sell alongside its briquettes. Today the company acts as a supplier of ICSs for large distributor and a manufacturer and distributor for briquettes. David remains Deputy Managing Director and handles the company's daily operations, and Vincent serves as CEO and advisor.



*Top: Green Bio Energy CEO Vincent Kienzler,
Bottom: Deputy Managing Director David Gerard*



Manufacturing

All of the stove and briquette production is done in-house at either the original company factory in Mukono or the recently opened factory in Mbale. Briquette production is done by diesel powered machines, but stove production remains entirely manual. A recently created design team is working to mechanize the stove production process without incorporating imported machinery, which David feels are expensive and difficult to find skilled employees for. GreenBio Energy employs over 100 people, primarily Ugandan, across its two factories and its Kampala office space, and has a monthly production capacity of 2500 stoves.

Distribution

When GreenBio Energy began operations it sold its products to small local distributors and end users. Vincent and Alex found their target customer, the urban household, difficult to approach due to language and education barriers, and felt that there was more space in the ICS market for manufacturers. They transitioned their company away from distribution activities and began focusing on forming sales partnerships with large distributors. A French contact introduced them to the UpEnergy Group, an ICS distributor, in early 2014, and it became GreenBio Energy's first regular B2B client. Today, UpEnergy Group orders make up 75% of Green Bio Energy's annual sales volume.

GreenBio Energy managers found B2B partnerships to be an easier approach to ICS sales, and one that provided larger, more regular orders. They increased their distributors partnerships to include Living Goods and BRAC, and also began supplying stoves to medium-large businesses such as restaurants, orphanages, and grocery shops. The company maintains a few kiosks and displays in convenience stores (known as "cages"), for end user sales but those purchases are a small percentage of annual ICS sales. Briquette distribution, on the other hand, is still primarily performed by GreenBio Energy as the company attempts to develop customer demand for the product.

FRANCHISING FOR SUCCESS

David envisions a franchise model for GreenBio Energy in the future, with numerous production sites operating semi-independently around Uganda and, eventually, other countries in East Africa. GreenBio Energy currently has two production factories, and there are plans to open a third site in 2017. Production sites stay in touch with the main office in Kampala through group communication via WhatsApp and twice weekly phone calls, which minimizes the need for frequent travel to supervise the operations. Each factory is registered under its own label (Mukono factory ICS production is Clean Cooking Solutions, briquette production in Mukono is Fuel from the Earth, Mbale ICS production is Cash Savings Solution), but all are subsidiaries of Green Bio Energy.



Green Bio Energy production facility

Challenges

While GreenBio Energy has found its niche in the Ugandan ICS market as a manufacturer, its leaders see briquette marketing and sales to be an ongoing challenge. Briquettes were the initial flagship product of GreenBio Energy, but the company has seen that consumer adoption of briquettes requires a change in behavior and does not feel that it has discovered the appropriate marketing technique yet to be successful in briquette sales. David also highlighted the general informalities of the market as a reoccurring barrier, and the need for a substantial amount of working capital in order to be operational. He stressed that perseverance and patience have been critical for GreenBio Energy's growth as the company evolves in a "difficult and slow" market.

CHARCOAL BURNING COOKSTOVES

GreenBio Energy's two primary products are carbonized charcoal briquettes (40% of total sales revenue) and charcoal/briquette burning ICSs with a clay liner and a metal shell (50% of total sales revenue). The remaining 10% in revenue comes from trainings and workshops. The company initially sold its briquettes alongside ICSs sourced from a local manufacturer but, after doubting the stove's quality, it began production of its own ICSs. GreenBio Energy sells some of these stoves under its Briketi brand, but the vast majority of its products are sold at wholesale to large distributors. The ICSs retail for 27,000 UGX (\$7.50 USD) (wholesale price differs), and a 50kg bag of briquettes is priced at 40,000 UGX (\$011.00 USD). Some of the distributors participate in carbon financing, and GreenBio Energy does offer a warranty on the products involved in those programs. Thus far, however, very few customers have requested repairs.





Humura Investments Ltd.

Company at a Glance

Operational Since: 1991 (began selling household ICSs in 2001)

Number of Employees: 7

Primary Product(s): Improved charcoal and solar stoves and ovens

Manufacturing Process: Performs most of the product manufacturing in-house

Distribution Process: No distribution process, customers pick up the product at the facility or exhibitions

Stoves Sold as of December 2016: 20,000 (estimated)

“Durable, Affordable & Convenient Selina Cooking Stoves”

Located at Lweza off Entebbe Rd (Before Kajjansi near Lweza Clays Factory)

PO Box 25770, Kampala Uganda

+256 712 800727

info@humurainvestmentsltd@gmail.com

Company Origin

Fred Rwashana was inspired to start an improved cookstove company by a government awareness initiative on deforestation and climate change. In 1991 he began designing and installing improved institutional cookstoves at his company FK Rwashana Associates and selling them to nearby schools and orphanages. Fred benefited from Makerere University and the Gatsby trust, from who he received a few pieces of machinery and business training. After a decade of work with institutional stoves Fred felt that he had saturated the market in the area surrounding his factory, and began to focus on the development of household improved stoves and ovens. The company has continued to expand its work in household cooking devices, and today they are the most popular product in its catalog.

Throughout its sixteen years of operation the company has remained a family business. Company ownership changed in 2010, and Fred's daughter Adeline Muheebwa assumed role of CEO. This transition in leadership was also a time of rebranding, and FK Rwashana Associates became Humura Investments Ltd. Fred remains involved as the Technology Manager, and Adeline's husband serves as the Finance Manager. Her teenage son, Josh, has begun to explore marketing opportunities on social media. In addition to her role as Humera's CEO she works as a private gender and development consultant and chairs the Association of Uganda Professional Women in Agriculture and Environment (AUPWAE).



From left to right: Fred Rwashana (CTO), Adeline Muheebwa (CEO), Josh (Adeline's son) standing around a solar-enabled Selina improved cookstove at the Humura factory site

Manufacturing

All of Humura's products are made to order after advance payment from the customer, save for a small inventory of charcoal burning household stoves is kept on hand for exhibitions and tradeshows. The company has a production staff of four who work on contract, and will call these employees into the factory when there is an order. Manufacturing duties include the production of briquettes and metal shells for household stoves, and the assembly of stoves and ovens. Inclusion of advanced features (ex: phone charging ports) is done separately by Fred, and clay liners and bricks for the charcoal burning stoves and ovens are sourced nearby. A small inventory of charcoal burning household stoves is kept on hand for exhibitions and tradeshows.



CEO Adeline Muheebwa in front of a charcoal-fueled Selina improved cookstove



Distribution

Humura does not currently engage in any distribution activities. Customers can order and pick up household products at the factory, or at one of the three annual trade shows the company attends. Institutional cookstoves are built at the client's organization. Both Fred and Adeline expressed interest beginning door-to-door distribution, but capital constraints currently prevent any substantial action on that front. Years ago Humura trialed displaying its household products at grocery stores and kiosks, but found there was little customer interest without a sales person on site to explain product technology. When at trade shows Fred and Adeline are sure to have a demonstration available for potential customers, and Adeline hosts women in her home to observe the functionality of her Humura oven. Adeline dreams of one day owning a showroom to display and demonstrate a vast assortment of Humura products, but for now marketing is limited to demonstrations in her home and at exhibitions.

SELINA STOVES AND OVENS

Humura Investment products are expensive, high-tech, clean cooking technologies designed for upper income customers. These technologies include: institutional stoves, energy-efficient briquettes, household stoves, and household ovens. The latter two products (cookstoves and ovens) can be made to run on charcoal, or solar, or briquettes. These household stoves range from 60,000-350,000 UGX (\$16-\$100 USD) depending on the size of the model and the number of accessories (solar lighting, phone charging, etc.) and the ovens from 900,000-1.5 million UGX (\$250-\$400 USD). None of the products have been formally tested for energy efficiency due to the associated costs (\$300 USD).

Fred has spent years refining cookstove designs and innovating new products, and continuously looks for new ways to advance Humura's products. He is experienced in metal fabrication, consults a local craftsman and a retired lecturer from a vocational school on technological specifications.



Challenges

Lack of financial resources is the most pressing challenge facing Humura today. The stoves and ovens currently sell at a high margin, and the company is profitable, but sales volume is relatively low. The company would like to scale its operations by increasing marketing and distribution activities, but does not have the working capital to do so. Unlike many other companies in the ICS industry Humura has not received any substantial external funding and is limited to the personal resources of its managers and the revenue from sales. Neither Fred nor Adeline want to take out a loan, citing high interest rates and seasonality of Humura's sales, and they are both skeptical of the carbon crediting market. Grant applications have been unsuccessful, save for a few travel subsidies, and Adeline suspects this may be because the company is seen as being too old and too "advanced" for scale-up grants.

LEAN BUSINESS OPERATIONS

Humura's operations are designed to require very little working capital and to scale with customer demand. Its chief executive, financial, and technical officers (all immediate family members) do not rely exclusively on company profits for livelihood, and its four production workers are contracted when needed. Distribution activities are not performed, and marketing expenses are limited to trade show entrance fees. This structure allows for the company to have very little fixed costs, and thus shelters it from any fluctuations in sales.



Fred Rwashana demonstrating the water boiling process on a Selina cookstove using Humura-made briquettes





Company at a Glance

Operational Since: 2011

Number of Employees: 24

Primary Product (s): Locally-made improved charcoal stoves and imported improved firewood and charcoal stoves

Manufacturing Process: The company does not engage in manufacturing

Distribution Process: Door to door sales and networks of distributors

Stoves Sold as of December 2016: 76,335

Company Statement

“UpEnergy brings aspirational clean energy and health products within reach of low-income customers. UpEnergy customers rely on us for the best efficient cookstoves, water filters, and solar lights.”

(<http://www.upenergygroup.com>)

Company Origin

UpEnergy Group, a Ugandan distribution company specializing in improved cookstoves (ICSs), was founded by five young professionals from the United States in 2011. Two of the co-founders, Matt Evans and Nicole Ballin, had attended the MBA program at the Hass School of Business together, and Berkeley together (Evan for a master's in science and Matt and Nicole for an MBA), and a third, Evan Haigler, had graduated with his master's from the University of Berkeley three years earlier. Evan had done his master's research on carbon financing for clean cookstoves, and used that knowledge to found the carbon financing partner Impact Carbon in 2007.

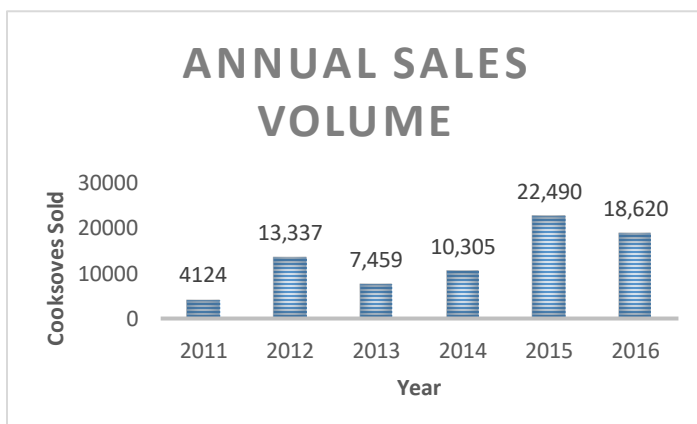
Impact Carbon had been operational in Uganda and working with several ICS companies, the most notable of them being Ugastove, when the UpEnergy co-founders saw the opportunity for a new company to partner with Impact Carbon and use carbon financing to sell ICSs. Alex Rau, an investor in the company, and Erik Wurster, a former carbon finance manager, joined Matt, Nicole, and Evan to form the venture. Impact Carbon and UpEnergy Group were closely affiliated during UpEnergy's first two years, and the former facilitated in UpEnergy's carbon financing project. Erik served as UpEnergy's CEO until late 2015, when he stepped into a director position. The daily activities of the company are currently managed by Operational Director Moses Amone, a Ugandan professional with experience in solar product sales. All five co-founders serve as either directors or advisors, and are occasionally called upon to take an operationally active role in the company.



UpEnergy Group Operational Director Moses Amone

CARBON FINANCING

Carbon financing is a critical component of UpEnergy Group's operations. The company has registered as a Gold Standard project to produce voluntary emissions reductions (VERs) and with the UN Clean Development Mechanism to produce UN certified carbon credits (CERs). Credits are generated by the use of an ICS, and ICS customers sign over their right to the carbon credits their stove generates to UpEnergy during the sale transaction. UpEnergy then sells those credits to generate additional revenue for the company. Previously the money from carbon financing was used to subsidize the cost of stoves, but it is now put towards operating and marketing expenses.

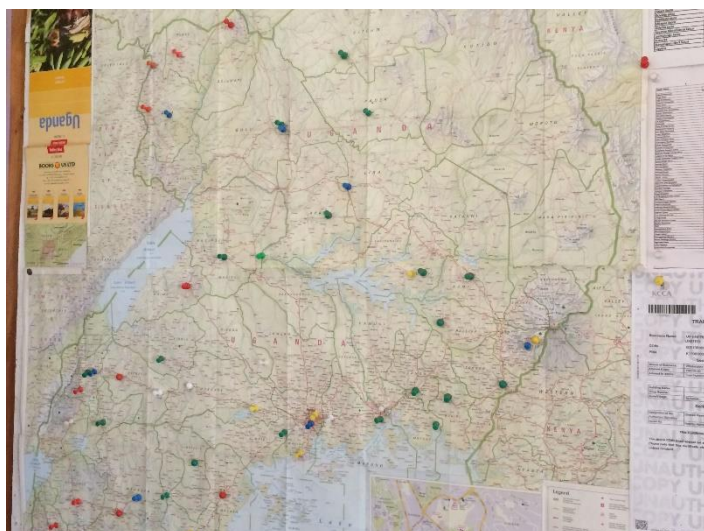


Distribution

Distribution and sales of UpEnergy product are done out of six regional hubs across Uganda and the flagship office in Kampala. The company has an in-house sales staff, totaling 24 employees; this staff also manages the hundreds of distributors that are contracted by the regional hubs. A portion of sales are made to retailers, NGOs, and other large partners, but the foundation of the UpEnergy distribution model is end user sales. Sales staff and contractors travel to towns and villages and go door to door with the product.

Challenges

Operating manager Moses Amone expressed that the company struggles with a lack of business knowledge among its distributors. UpEnergy tries to train the distributors working with the company, but does not have the time and resources to hold an extensive training program. Additionally, consumers demonstrate a lack of awareness of the benefits of ICSs, which makes the company's distribution activities more difficult because there is not an established demand for its products. UpEnergy has attempted to build customer demand by demonstrating the stove in use, publishing print marketing for new products, and emphasizing ICS fuel-saving benefits in the sales pitch, but customers are intent upon product pricing and are often unwilling or unable to pay the higher upfront cost for an ICS.



Map of UpEnergy distribution points in Uganda

IMPROVED COOKSTOVE PRODUCTS

UpEnergy Group distributes both locally-made and imported models. At the start of the businesses the company sold only imported stoves, primarily wood burning Envirofit stoves, but soon found that the product price point of 55,000-210,000 UGX (\$15-\$58 USD) was too high to reach their desired sales volume. The company pivoted and introduced locally produced, charcoal burning, stoves at a lower price point of 15,000-27,000 UGX (\$4-\$7 USD) into their catalog. Today that stove, manufactured by GreenBio Energy and sold under the Smarthome brand, makes up the lion's share of UpEnergy's ICS sales. Their full catalog includes five stove models (EZYStove, Ecozoom, AES Stove, Biolite, and Smarthome) and a smaller subset of water filters and solar lights. All stoves are part of a carbon financing project and, as per project requirements, are tested for emission and efficiency, branded with a serial number, and come with a free one-year warranty.

