

BURN Manufacturing



burnstoves.com



The Care Economy
Knowledge Hub

the-care-economy-knowledge-hub.org

Profiling Businesses in the Care Economy

The care economy consists of paid and unpaid labor and services that support caregiving in all its forms. In Africa, Asia and Latin America, women spend between three to five times as many hours on unpaid care and domestic work as men. This represents 80 percent of a household's total hours devoted to unpaid care work.

Care economy businesses can help recognize, redistribute, reduce and reward – also known as the 4 Rs – unpaid and paid care and domestic work in the following ways:



Recognize: Initiatives that increase visibility and recognition of paid and unpaid care and domestic activity as "productive" work that creates real value and contributes to economies and societies.



Redistribute: Services and initiatives that redistribute care work from individuals to public and private sector entities, and redistribute care and domestic work within the household.



Reduce: Products and initiatives that reduce the time spent on and burden of unpaid care and domestic work.



Reward: Products, services and initiatives that ensure that care and domestic workers are paid fairly and have professional growth potential. This provides them with financial reward and security.

The Care Economy Knowledge Hub aims to address the knowledge gap around care businesses by showcasing various business models and creating a resource base for relevant stakeholders. It also aims to raise awareness and increase knowledge of the state of impact-driven care economy business models and attract a broad range of funders to invest in care economy solutions by showcasing opportunities. These business profiles are intended to showcase said potential investment opportunities. They have been created from information and data provided by the business itself.

This project is supported by Canada's International Development Research Center, in partnership with the Soros Economic Development Fund at the Open Society Foundations. Building on their track record and commitment to transforming the care economy and mobilizing finance for gender equality, they have jointly launched this action research program to help transform the care economy through impact business and investment.

Executive Summary

Reduce

BURN Manufacturing is a Kenyan for-profit enterprise that designs, manufactures, and distributes fuel-efficient cooking appliances. BURN products reduce deforestation, indoor pollution, and household energy expenditure for its customers. The products likewise reduce the burden of unpaid care work (mostly undertaken by women and girls), as they spend less time on sourcing firewood and cooking activities. Since its inception, the company has sold over 2.3 million stoves and saved households an estimated US\$ 520 million in fuel costs.¹ Further, since 2013 it has created over 1,000 indirect jobs via its production, supply chain, distribution networks, and retail points. In 2021, BURN Manufacturing generated US\$ 11,466,282 in revenue. It has 2,614 employees, 43% of whom are women.

Enterprise Stage:
Scaling/expansion stage

Year Established:
2013



Enterprise Type:
For-profit enterprise

Women Owned/Led:*

- This enterprise is not women owned or led.

Enterprise Contact: Michael Golomb, michael.golomb@burnmfg.com

Founder's Contact: Peter Scott, [LinkedIn Profile](#)

*According to 2X "women entrepreneurship" and "women leadership" criteria; [2X Challenge Criteria](#)

¹ BURN Stoves. (n.d.). *Our Impact*. <https://burnstoves.com/impact/impact>

1. About The Enterprise

1.1 Problem

In Kenya, 72% of the population lives in rural areas (an estimated 39 million people).² Only 10% of Kenyan rural households have access to clean cooking technologies, with the majority relying on biomass-based (traditional) cookstoves.³ These traditional stoves consume a large amount of fuel, with households spending a reported US\$ 500 a year on charcoal. Further, WHO data suggests that smoke and indoor pollution have resulted in an estimated 23,000 deaths in Kenya in 2020 alone.⁴ Traditional wood or charcoal cookstoves are thus not only inefficient, but contribute to deforestation and health costs for both rural and urban families.⁵ In rural Kenya specifically, 9 out of 10 households use firewood for both cooking and heating, due to its affordability and availability.⁶

In Sub-Saharan Africa, 31% of rural households are headed by women, as men often migrate to urban areas to pursue income-generating opportunities.⁷ Thus, women spend a reported 20 hours per week collecting firewood and an estimated 4 hours a day preparing meals.⁸ Fuel collection also increases the risk of gender-based violence for women and girls, as they are often in secluded forests during the firewood gathering process, making them vulnerable to attacks.⁹

In addition, there is a greater burden of care on women and girls, who spend nearly 5 hours per day on domestic care activities (compared to 1 hour for men).¹⁰ Evidence suggests that using clean energy sources (or improved energy technologies) reduces this burden. For example, a study by Oxfam showed that access to time and labor-saving equipment (such as fuel-efficient stoves, water tanks, or solar lamps) made unpaid care tasks less time-consuming.¹¹

² The World Bank. (2018). *Rural population (% of total population) - Kenya*. <https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?locations=KE>

³ Energy Sector Management Assistance Program (ESMAP). (2019). *Multi-Tier Energy Access Tracking Framework Global Survey 2016-2018*. The World Bank. <https://microdata.worldbank.org/index.php/catalog/3703>

⁴ Chasant, M. (2020). *Air Pollution In Kenya Causes, Effects and Solutions*. ATC Mask. <https://www.atcmask.com/blogs/blog/air-pollution-in-kenya#:~:text=Air%20pollution%20is%20linked%20to%20more%20than%2018%2C000%20premature%20deaths,a%20WHO%20report%20has%20revealed>

⁵ Acumen. (2022). *BURN Manufacturing: Producing and distributing affordable, highly efficient cookstoves to bring clean cooking solutions to East Africa's low income families*. <https://acumen.org/?investment=Burn-manufacturing>

⁶ Njega, M. Gitau, J.K. & Mendum, R. (2021). *Women's work is never done: Lifting the gendered burden of firewood collection and household energy use in Kenya*. <https://www.sciencedirect.com/science/article/pii/S221462962100164X>

⁷ Food and Agriculture Organization. (n.d.). *Women: The Key to Food Security*. <https://www.fao.org/3/x0171e/x0171e00.htm#TopOfPage>

⁸ The Cooking Alliance. (2015). *Women spend 374 hours each year collecting firewood in India, study finds*. <https://cleancooking.org/news/05-05-2015-women-spend-374-hours-each-year-collecting-firewood-in-india-study-finds/>

⁹ Groots Kenya. (2019). *Women and Girls are also Vulnerable when Gathering and other cooking fuels...* <https://grootskenya.org/29376-2/>

¹⁰ Global Center for Gender Equality at Stanford University. (2022). *Unpaid Caring and Domestic Work in Kenya*. <https://med.stanford.edu/content/dam/sm/gender-equality/documents/UCDW%20Kenya%2011-11-21.pdf>

¹¹ Oxfam. (2019). *Gendered patterns of unpaid care and domestic work in the urban informal settlements of Nairobi, Kenya: Findings from a Household Care Survey 2019*. <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/620910/rr-nairobi-kenya-household-care-survey-191119-en.pdf;jsessionid=60FF0E64D05C9263AFF2FCF9A2205B10?sequence=1>

A regional analysis found a positive correlation between the introduction of efficient cooking stoves and female workforce participation. While there is low short-term impact, long-term analyses indicate that enhanced time efficiency leads to women participating in the formal workforce.¹²

However, the adoption of labor-saving technologies is currently limited, due to a lack of awareness regarding benefits, the high costs of adoption, traditional beliefs, and a lack of after-sales services. In Kenya specifically, low-income households have limited financial capacity to procure energy technologies, labor-saving equipment, or to access a grid connection and/or LPG cylinder.¹³

1.2 Solution

BURN Manufacturing designs, manufactures, and distributes cookstoves. BURN's products use clean fuels and are therefore more efficient than traditional cookstoves, resulting in a 50% reduction of fuel consumption. In addition to their environmental impact, BURN's products likewise result in reduced health risks and expenditure for households. BURN's modern, fuel-efficient, and time-efficient cookstoves use wood, charcoal, and LPG to reduce the amount of smoke emitted during their operation. The enterprise currently manufactures 3 types of charcoal stoves, 4 types of wood and briquette stoves, and 1 LPG stove. BURN has 2 production facilities in Kenya and its products are available in 8 countries throughout Africa.

BURN stoves are sold through online retailers, physical supermarkets, and social distributors.¹⁴ The enterprise has established a network of 1,500 distribution partners throughout Africa and BURN Manufacturing has partnered with microfinance institutions and credit cooperative societies, to provide financing to its customers. BURN Manufacturing also provides delivery and after-sales services, including repair, warranty, and replacement. Current warranties cover customers for up to 1 year.

In addition to revenue generated from the sale of clean cookstoves, the enterprise also generates revenue from the sale of carbon credits. As BURN cookstoves result in the use of less fuel (i.e. wood and charcoal), they consequently reduce carbon emissions. The resulting carbon credits are certified and sold to institutions and individuals. Carbon credits from the enterprise are issued under Gold Standard and it is estimated that the enterprise has 15 million carbon credits available annually.

¹² Uchenna, E., & Oluwabunmi, A. O. (2020). *Cooking technology and female labor market outcomes in sub-Saharan Africa*. *African Development Review*. doi:10.1111/1467-8268.12468

¹³ Malonza, R., & Fedha, M. (2015). An assessment of gender and energy in Kenya: the underlying issues. *International Journal of Scientific and Technology Research*, 4(9), 137-153. https://genderandsecurity.org/sites/default/files/Malonza_Fedha_-_An_Assessment_of_G_Energy_in_Kenya_0.pdf

¹⁴ Refers to social enterprises and NGOs that distribute BURN manufacturing products.

1.3 Customer Segment

Customer Segment	Product / Service Provided	Paid / Unpaid
Rural, low-income, and urban low and middle-income households	<p>Charcoal, wood, and LPG cookstoves</p> <p>Charcoal and LPG cookstoves are distributed in urban areas. Wood-based and fuel-efficient cookstoves are distributed in rural areas. Household customers purchase cookstoves from supermarkets, distributors, MFIs, and authorized retailers.</p>	<p>Paid</p> <p>The price for BURN cookstoves ranges from US\$ 24 - US\$ 76. In 2023, BURN will provide firewood cookstoves to rural customers at a subsidized price. This will be achieved through the sale of carbon credits.</p>
Individuals interested in offsetting their carbon footprint	<p>Carbon credits</p> <p>BURN sells carbon credits to individuals, who can then make a one-time purchase, or opt for a monthly subscription.</p>	<p>Paid</p> <p>Individuals can make a one-time purchase of US\$ 30. Subscription plans range from US\$ 30 - US\$ 150 per month.</p>
Businesses	<p>Commercial cookstoves that use charcoal as fuel</p> <p>BURN manufactures commercial-scale charcoal stoves (known as the Jikokoa Pro) for businesses like restaurants, hotels, and churches. Businesses purchase the stoves from supermarkets and approved retailers.</p>	<p>Paid</p> <p>The price for cookstoves ranges from US\$ 50 - US\$ 70. The customers do not receive any subsidies.</p>
Corporations and institutions	<p>Commercial carbon credits</p> <p>BURN sells carbon credits to corporations and institutions.</p>	<p>Paid</p> <p>Businesses subscribe to a monthly plan for carbon credits.</p>

1.4 Team And Governance Structure

BURN Manufacturing has 534 full-time employees, 399 contracted employees,¹⁵ and 1,681 casual employees¹⁶ (across 8 countries in Africa). Currently, 34% of full-time employees, 27% of contracted employees, and 46% of casual employees are women. The management team consists of 24 team members, including 5 women. BURN’s board consists of 7 members, 2 of whom are women.

1.5 Enterprise Policies

Policy	Yes / No
Overall HR Policy	Yes
Equal pay for equivalent work policy	No
Non-discrimination / Equal employment opportunity / Diversity and inclusion policy (gender, LGBTQ, PWD, etc.)	Yes
Anti bullying and sexual harassment policy / Respectful workplaces	Yes
Whistleblower policy / Employee grievance mechanism	Yes
Maternity / Paternity leave policy	Yes
Safeguarding policies for vulnerable groups (children, elderly, PWDs)	No
Safeguarding policies for the environment or to reduce detrimental impact on the environment (covers reducing carbon footprint, reduced water consumption etc.)	No

¹⁵ Contracted employees have a contract for a specific time period and work 40 hours a week.

¹⁶ New employees join the enterprise as casual employees, then become contracted employees after 3 months. Casual employees sign a casual form in order to join BURN Manufacturing.

2. Impact

2.1 Mission Statement

BURN Manufacturing's mission is to increase access to clean cooking solutions in under-served communities across Sub-Saharan Africa.

2.2 Intended Impact

BURN Manufacturing is impacting households and businesses by **reducing** time spent on firewood collection and cooking, as well as by providing energy and time-efficient cookstoves. It is likewise reducing the risk of health complications for women and girls, by enabling access to smokeless cooking solutions.

2.3 Monitoring And Measurement

BURN Manufacturing tracks, measures, and records key indicators to represent the impact of the business on its customers and the environment. These indicators capture social and economic impacts, livelihoods, as well as climate action.

BURN Manufacturing measures its reach using the following indicators:

- Number of products (cookstoves) sold
- Number of warranties claimed
- Revenue from cookstove sales

So far, 2 external impact studies have been completed. BURN uses the Gold Standard¹⁷ and VERA¹⁸ to guide its monitoring activities (related to carbon standards for carbon credits). BURN also tracks indicators related to livelihoods, cost-savings, and the environmental impact of its products. The following indicators are currently tracked:

- Savings (per household) resulting from use of BURN stoves
- Reduction in carbon emissions

¹⁷ BURN's carbon credits are certified as Gold Standard. Gold Standard for the Global Goals is a standard that sets requirements, to design projects for maximum positive impact in climate and development. They also measure and report outcomes in the most credible and efficient way. Further details can be found [here](#).

¹⁸ The Verified Carbon Standard (VCS) Program is a greenhouse gas (GHG) crediting program. Further details can be found [here](#).

2.4 Results To Date

This section provides an overview of the enterprise's results, as of December 2021. In addition, it provides information from 2 research studies assessing BURN's impact.

- Number of cookstoves sold: 2,318,740
- Number of jobs created (since 2013): 1,000
- Reduction in CO₂: Approximately 11,612,562 tons
- Amount of wood saved by using efficient cookstoves: 6,560,769 tons
- Increased disposable income for households (using BURN Manufacturing cookstoves rather than traditional cookstoves): US\$ 494,809,383
- Results from the randomized control trial (RCT) study show that users of BURN's Jikoko stove (charcoal stove) experienced a 39% decrease in charcoal consumption
- BURN Manufacturing products have improved safety, with 99% of Kuniokoa users reporting the stove has reduced risks of burns
- Results from a recent impact assessment indicate that 97% of respondents using the Kuniokoa stove (BURN wood stove) strongly increased their opportunities for income generation, due to a decrease in the time spent cooking

BURN Manufacturing is aligned with the following Sustainable Development Goals (SDGs):



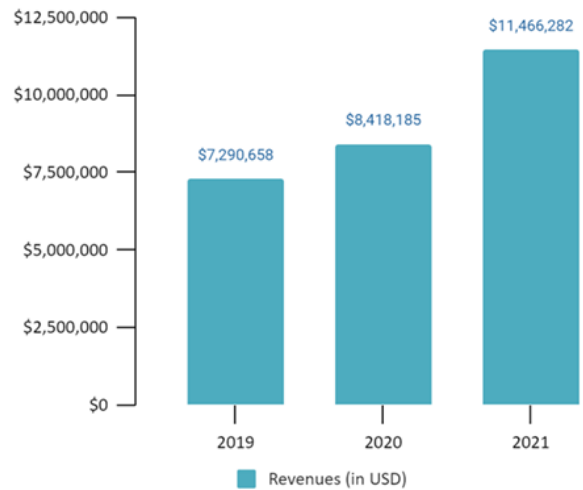
3. Financials

3.1 Financial Status

Please contact the enterprise directly for further information.

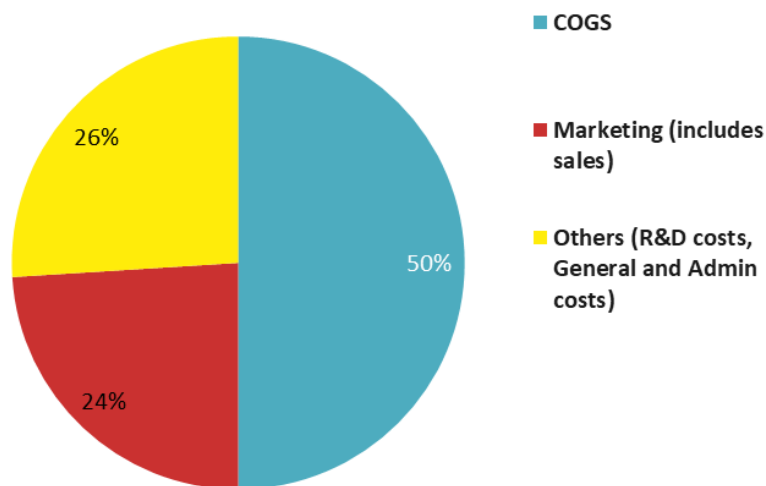
3.1.1 Revenue Streams

BURN Manufacturing generates revenue from the production and sale of cookstoves and stove accessories, as well as through stove distribution fees. Currently, 61% of its revenue comes from cookstoves and related fees, while 39% comes from the sale of carbon credits. BURN Manufacturing also receives grants and donor funding.



3.1.2 Expenses

The following pie-chart provides an overview of the enterprise’s expenses in the year 2021.¹⁹



¹⁹For BURN, personnel costs are covered under COGS, marketing, and other costs.

3.2 External Funding Sources (Past and Current)

BURN Manufacturing has received the following debt and equity investments:

- In 2022, BURN Manufacturing received a grant of US\$ 2.1 million from Development Innovation Ventures, to expand its operations in Ghana and Nigeria.²⁰
- In 2022, BURN Manufacturing received US\$ 4 million in the form of long-term and quasi-equity instruments, from Spark+Africa Fund.²¹ The purpose of these funds was to increase the capacity of BURN's manufacturing facility in Nairobi and to finance the expansion of its business in new markets, including Somalia, Ghana, Nigeria, Mozambique, and the Democratic Republic of Congo (DRC).
- In 2021, BURN raised US\$ 100,000 in debt financing from Bettervest GmbH.
- In 2019, BURN Manufacturing received an undisclosed amount of funding from Yunus Social Business.

3.3 Challenges Faced In Accessing Capital

- **Limited funding availability:** The enterprise has observed significant competition in obtaining funding for clean cookstove businesses.

4. Path To Scalability

4.1 Potential Avenues For Growth

- **Increase production capacity at production facilities in Kenya:** The enterprise's solar powered production facility has the capacity to produce 250,000 units per month. By 2025, the enterprise aims to quadruple its production to 1 million units per month. The enterprise also aims to set up an additional production facility in Kenya. This will not only increase its revenue, but also create more jobs.
- **Geographical expansion to other countries:** BURN Manufacturing intends to set up production facilities in other countries in Sub-Saharan Africa. It is targeting expansion in Tanzania, Ghana, Uganda, Zambia, DRC, and Nigeria. By 2025, the enterprise plans to establish 3 assembly points in the DRC, Nigeria, and Ghana.

²⁰ Div Portal. (n.d.). *Scaling Clean Cooking - BURN Manufacturing West Africa Expansion*. <https://divportal.usaid.gov/s/project/a0gt0000001pbLoAAI/scaling-clean-cooking-BURN-manufacturing-west-africa-expansion>

²¹ Clean Cooking Alliance. (2022). *Spark+ Invests US \$4 Million in BURN to Accelerate Its Multi-Country Expansion Across Africa*. <https://cleancooking.org/news/spark-invests-us-4-million-in-BURN-to-accelerate-its-multi-country-expansion-across-africa/>

- **Product innovation:** BURN Manufacturing intends to launch 5 new products, potentially increasing sales and creating more jobs. The entity is also investigating the incorporation of all fuel types in its business model. By 2024, the enterprise aims to launch LPG and electric cookstoves for both household and business customers.
- **Enhance operations:** BURN is piloting an app to manage direct sales and inventory in Kenya. It will track inventory until it is in the hands of customers and fully paid for. This will be used for information management.

4.2 Risks And Challenges

- **Operational challenges (customers):** In 2022, BURN began selling directly to customers. As this was new for the entity, it has been working on improving this process. Thus, BURN commenced B2C sales, as this enables the enterprise to have more control over data collection and carbon registrations from the end-user. However, BURN has experienced challenges related to data collection and inventory, such as the tracking of serial numbers.
- **Competition (pricing, barriers to entry):** BURN Manufacturing is facing logistical challenges in delivering products to different countries. It is working to overcome the costs of shipping, custom clearances, as well as marketing the products to new markets. Counterfeiting has become an issue due to these challenges. Counterfeit products (that local players in new markets sell) have greatly impacted BURN's revenue.
- **Social norms:** The enterprise has observed rooted cultural beliefs on how food must be prepared in Kenya. There is a preference for using charcoal, as it gives the food a certain taste. This impedes the mass uptake of clean cookstoves.

4.3 COVID-19 Impact On The Enterprise

Sales were not negatively impacted during COVID-19 and instead increased by 10%. During the COVID-19 lockdowns, BURN Manufacturing implemented a work-from-home policy for office staff, to combat any operational lags that could impact production. Factory operations continued according to government restrictions. The enterprise observed social distancing and other COVID-19 protocols (such as masks and hand washing) in its factory. The entity also set up a COVID-19 Feeding Program, where it provided cookstoves and fuel (for free) to organizations that provided meals to vulnerable children in Nairobi.

4.4 Support Received To Date

The enterprise has received support from the following institutions:

- BURN Manufacturing is a portfolio member of The Clean Cooking Alliance Venture Catalyst. The enterprise has received extensive support, including industrial development, gender diversity through women's empowerment, research, evidence and learning, systems strategy advocacy, and communication.²²
- In 2015, BURN Manufacturing was recognized by the Ashden Clean Energy for Women and Girls Award. The enterprise won for its accomplishments in improving the health and economic livelihoods of girls and women, by promoting the widespread adoption of more efficient cookstoves in Kenya.
- In 2018, the enterprise received recognition from Bloomberg New Energy Finance Award for being the world's leader in clean energy solutions.
- IN 2018, BURN Manufacturing's pitch won the Swiss Energy and Climate Summit award (SWISSECS Award) at Switzerland's leading conference for energy and climate issues.
- In 2020, the enterprise won the Affordability Prize Award in the Global LEAP Awards Electric Pressure Cooker Competition, for the ECOA cookstove.
- The enterprise has received support from Yunus Social Business, which conducted an impact performance study of BURN's Kuniokoa wood stove.

4.5 Inputs Required For Growth

Financial

BURN Manufacturing is seeking debt of US\$ 25 million, equity of US\$ 25 million, and carbon project finance of US\$ 100 million.

- Funds will be used to up-scale operations and distribution across SSA
- Debt and equity capital will be invested into scaling the company's manufacturing capability and distribution networks
- Carbon project financing will allow BURN to deliver more life-saving cooking solutions (at affordable rates), while allowing investors to participate in carbon emissions reduction sharing

Non-Financial

The enterprise does not currently require non-financial support.

²²Clean Cooking Alliance. (n.d.). *Venture Catalyst*. <https://cleancooking.org/venture-catalyst/>