2022

ATEC

ATEC

atecglobal.io

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

ATEC is a for-profit enterprise headquartered in Australia that provides clean cooking solutions to rural, semi-rural, and urban households in Bangladesh and Cambodia. ATEC supplies electromagnetic induction stoves (branded 'eCook'), as well as biodigesters that convert livestock manure into biogas. Both the biodigesters and eCook stoves are connected to Internet of Things (IoT) technology, which generates real-time, verifiable, and Gold standard carbon credits. ATEC deploys a pay-as-you-go ("PAYGO") consumer finance model. Founded in 2016, the enterprise has served over 32,475 customers and has 70 full-time employees. In FY 2021, ATEC's revenue was US$470,440.

Enterprise Stage:
Growth

Year Established:
2016

Enterprise Type:
For Profit

Women Owned/Led:*
At least 30% women in senior leadership (executive level/ C-suite positions)

Company Contact
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Founder's Contact
Ben Jeffrey
LinkedIn Profile

*According to 2X "women entrepreneurship" and "women leadership" criteria: 2X Challenge Criteria

1. About The Enterprise

1.1 Problem

Four billion people, or half of the global population, lack access to clean, modern, cooking energy.[1] This issue particularly affects women and girls, who devote nearly 13 hours per week to cooking with biomass.[2] Moreover, the smoke inhaled during cooking with biomass is harmful, leading to almost 4 million deaths per year.[3] To put this number in perspective, inhalation deaths are more than 3 times traffic accident deaths, worldwide.[4] Thus, biomass cooking comes with a heavy cost to the world's economy: approximately US$2.4 trillion annually due to the adverse impacts of the fuels on public health, climate, and general livelihoods.[5]

Currently, 80% of the rural population in Cambodia do not have access to clean cooking devices or fuels.[6] As of 2018, Bangladesh has the lowest clean-cooking access in South Asia, with an estimated 80% of the country's 35 million households without access to clean-cooking alternatives.[7] Almost 74% of the rural population cook with biomass fuels, which include: straw, leaf, husk, bran, jute stick, wood and bamboo.[8] A 2020 study by the World Health Organization (WHO) revealed over 70,000 people in Bangladesh die annually from diseases related to indoor air pollution.[9]

Families (mainly women and girls) spend about 3-7 hours on cooking and cooking related tasks, due to these inefficient, traditional, cooking methods.[10] Furthermore, farmers in both Bangladesh and Cambodia are relying heavily on chemical fertilizer use in order to achieve short-term results. However, this is at the cost of long-term soil health. More specifically, high chemical deterioration (roughly 62% of the total land area) has been observed in Bangladesh.[11] Decline in soil fertility and fuelwood harvesting are the main contributors of deforestation in Bangladesh, which currently has just 10% of its initial forest cover.[12]

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[1] The World Bank. (2020). Nearly Half the World's Population Still Lacks Access to Modern Energy Cooking Services.. https://www.worldbank.org/en/news/press-release/2020/09/24/nearly-half-the-worlds-population-still-lacks-access-to-modern-energy-cooking-services

[2] Dave, R., Keller, S., Koo, B. B., Fleurantin, G., Portale, E., & Rysankova, D. (2018). Cambodia: Beyond Connections - Energy Access Diagnostic Report Based on the Multi-Tier Framework. The World Bank

[3] (2022, July 26). Household air pollution and health. World Health Organization. https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health

[4] (2020, December 14). Road Traffic Injuries and Deaths—A Global Problem. Centers for Disease Control and Prevention. https://www.cdc.gov/injury/features/global-road-safety/index.html

[5] (2020, September 24). Nearly Half the World's Population Still Lacks Access to Modern Energy Cooking Services. The World Bank.

[6] : IEA, IRENA, UNSD, World Bank, WHO. (2022). Tracking SDG 7: The Energy Progress Report. https://trackingsdg7.esmap.org/data/files/download-documents/sdg7-report2022-full_report.pdf

[7] Climate Policy Initiative (2020). Energizing Finance: Understanding the landscape. https://www.seforall.org/system/files/2020-12/EF-2020-UL-Bangladesh-SEforALL.pdf

[8] Climate Policy Initiative (2020). Energizing Finance: Understanding the landscape. https://www.seforall.org/system/files/2020-12/EF-2020-UL-Bangladesh-SEforALL.pdf

[9] Climate Policy Initiative (2020). Energizing Finance: Understanding the landscape. https://www.seforall.org/system/files/2020-12/EF-2020-UL-Bangladesh-SEforALL.pdf

[10] Khandker, S., Ahmad, S. A., Mollah, A., Parvez, F., & Khan, M. (2015). Comparison of Respiratory problems among Women and Children of Rural Households using Improved Cook Stove and Traditional Cook Stove.

[11] FAO and ITPS. (2015). Status of the World's Soil Resources (SWSR) – Main Report. Food and Agriculture Organization of the United Nations and Intergovernmental Technical Panel on Soils. https://www.fao.org/3/i5199e/i5199e.pdf

[12] UN-REDD Bangladesh National Program. (2016). Drivers of Deforestation and Forest Degradation in Bangladesh: Final report. https://www.researchgate.net/publication/319653168_Drivers_of_deforestation_and_forest_degradation_in_Bangladesh_Final_Report

1.2 Solution

ATEC's products seek to address limited access to affordable, clean, and modern cooking facilities in rural, semi-rural, and urban households in Bangladesh and Cambodia. ATEC provides two off-grid and on-grid cooking products: (i) electromagnetic induction stoves and branded eCooks, that are more efficient than stoves that use Liquified Petroleum Gas; and (ii) biodigesters, branded ATEC BIO, which are prefabricated digesters that convert animal manure and farm waste into biogas.

ATEC makes its products affordable for customers through the 'PAYGO' model of financing. ATEC has developed and patented their own biodigesters and induction stoves that are PAYGO enabled. In this model, ATEC enters into a financial contract with the customer, breaking up the total payment cost into 27 monthly installments. ATEC does not charge interest within the allotted time frame and takes no collateral. In case of customer defaults, mechanisms are in place to cease the functioning of the product until the payment is made.

In addition, ATEC's products are pre-installed with a GSM sim and PAYGO functionality that enable ATEC to capture live user data regarding cooking habits, fuel consumption, location, etc. The system automatically calculates carbon credits and uploads them to ATEC's server, which can then be monetized to earn additional carbon credit. ATEC is currently a registered, Gold Standard,[13] carbon credit provider in biogas.

ATEC also offers after-sales logistical and technical assistance through a dedicated teleservice and customer care team. The team is available every day to provide information, as well as to troubleshoot problems for the customers. Customers can also order products online; the products are then distributed via eCommerce partners.

[13] Gold Standard was established in 2003 by WWF and other international NGOs, to ensure projects with reduced carbon emissions featured the highest levels of environmental integrity. It does so by setting standards and verifying impact through a robust process. https://www.goldstandard.org/about-us/vision-and-mission

1.3 Customer Segment

Customer Segment	Product / Service Provided	Paid / Unpaid
Rural households involved in farming and animal husbandry	**Biodigesters that provide biogas and fertilizers:** ATEC offers two variants of portable biodigesters, based on the quantity of manure available. Households can then use biogas, generated from the digesters for daily cooking needs. Customers can also buy twin-gas stoves, rice cookers, hoses, and PAYGO boxes - all bought and assembled by ATEC. The products come with a 3-year warranty, which includes installation and maintenance support. ATEC biodigester systems have a 25-year expected lifespan. The digesters also generate slurry, which can be used as a fertilizer. Given the biodigesters require manure, it is generally bought by households that have access to livestock.	**Paid** Rural households can either pay the full cost upfront, or via PAYGO. PAYGO allows for more customizable finance options. Bio-digesters can be purchased for US$ 700-US$800.
Low and middle income households in rural, semi-rural, and urban areas	**Electromagnetic induction stoves (eCook):** ATEC offers single and double stoves. A 48-hour, free delivery service is also offered. The products come with a 3-year warranty period, as well as installation support.	**Paid** Customers can pay either full cost, or in installments, through the PAYGO model. Payment can be made via mobile application, or at nearby kiosks. E-cooks can be purchased at US$270-US$350.
International carbon credit buyers	**Carbon Credits:** Buyers can access credit projects that are verified through the Gold Standard system (to which ATEC is registered). ATEC's server consolidates product-usage data, using inputs from individual products that are equipped with IoT. ATEC has signed an agreement with Engie, in order to sell the resulting carbon credit. To date, ATEC has received US$34.6m in carbon credit purchase offers. These credits will eventually be transformed into revenue, as biodigesters are distributed in Cambodia over the next 10 years.[14]	**Paid** International buyers can procure carbon credits through the Gold Standard mechanism.

[14] The long term agreement with Engie will enable Engie to purchase high quality carbon credits from ATEC over an estimated period of 10 years. This is done through the project ' Accelerating clean cooking solutions in Cambodia,' which has already received certification from Gold Standard.

1.4 Team And Governance Structure

The enterprise currently has 70 full-time employees. Of these, 7 employees are based at the Australian headquarters. The Bangladesh and Cambodia teams together have 14 Managers. ATEC also has 28 Assistant Managers, with 14 working in customer service, 7 in sales, and 7 in technical services. The remaining 21 employees are working under the Assistant Managers.

ATEC's governance team consists of 8 members, 2 of which are women. It also has an advisory board of 7 members, 2 of which are women.

1.5 Enterprise Policies

Policy	Yes / No
Overall HR Policy	Yes
Equal pay for equivalent work policy	Yes
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)	Yes
Safeguarding policies for the environment or to reduce detrimental impact on the environment (covers reducing carbon footprint, reduced water consumption etc.)	Yes

2. Impact

2.1 Mission Statement

ATEC's mission is to solve challenges presented by a lack of access to clean cooking (and the resulting climate change implications), through offering modern, technology-enabled, cooking solutions. ATEC's goal is to be the global leader in clean cooking by 2030.

2.2 Intended Impact

ATEC'S intended impact is directed toward one of the four Rs:

- The enterprise aims to **reduce** the time spent by women on household work. Access to clean cooking solutions **reduces** the drudgery associated with collecting firewood for daily cooking.

2.3 Monitoring And Measurement

ATEC tracks all data through its central 'Impact Dashboard,' which includes the following indicators:

- Number of biodigesters and eCook units sold on a monthly basis
- Number of units installed on a monthly basis
- Number of active and inactive users of eCooks
- Estimated quantity of organic fertilizers produced monthly, based on output of each biodigester
- Customer satisfaction, checked through customer calls
- Total number of beneficiaries

In addition to business indicators, ATEC collects user information via the built-in GSM sim. The sim collects real-time data related to cooking use, time, product health, tampering, and location.

ATEC also monitors multiple indicators on a yearly basis. These indicators include:

- Number of hours given back to women. According to an Impact Outcome Assessment (2017) conducted by Shujog IIX, biodigesters in Cambodia generated an average time-savings of 3 hours per day (cooking), and 19 days per year (fuel collection) for each farming household.[15]
- Total tons of GHG emissions reduced. This is based on the estimation that each eCook reduces greenhouse gas emissions by 1.5 tons/year. Thus, through one biodigester, 4 tons of carbon is abated per year.
- Total tons of forest wood conserved. ATEC calculates that they have conserved 2, 168, 161 tons of forest wood.
- Total amount of money saved per household. Based on an internal study, it was revealed that a biodigester saved US$43/month for customers in Cambodia. Surveys likewise indicated that eCooks energy costs by 50%, compared to Liquefied petroleum gas (LPG) and wood.

[15] ATEC (2017). ATEC Biodigesters International. http://www.globalsolutionssummit.com/uploads/3/1/5/5/31554571/atec_biodigesters_strategy.pdf

2.4 Results To Date

- Number of eCook and Biodigester systems sold: 6,500+
- Number of beneficiaries from clean cooking solutions: 32,775
- Quantity of organic fertilizers generated from the biodigester: 14,000 tons
- Quantity of Greenhouse gasses reduced: 30,000 tonnes
- Quantity of forest wood conserved: 2 million tonnes
- Number of hours saved given back to women: 7,009,521 hours[16]

ATEC's work has positively impacted the livelihoods of the customers it serves, reducing their fuel and fertilizer costs by approximately US$521 per year, per household. Further, organic fertilizers have improved soil productivity, with an estimated 32% increase in crop yields. For home-stage farms (typically managed by women), these additional crops can then be sold in local markets, or used within the household to further reduce expenses.

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

[16] The hours saved is based on measurements that show that eCooks save 1.5 hours/day/user and biodigesters save 3 hours/day/user. The time saved is due to faster cooking time and related chores (cleaning). Additionally households spend 1.5 days/month on collecting or buying cooking fuel, such as wood, charcoal, etc. http://www.globalsolutionssummit.com/uploads/3/1/5/5/31554571/atec_biodigesters_strategy.pdf

3. Financials

3.1 Financial Status

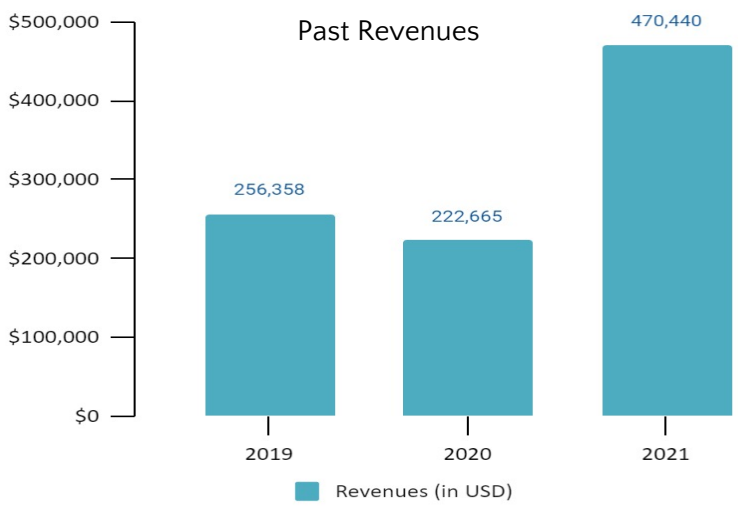
ATEC aims to be financially profitable in the next 3 years.

(Amounts in US$)	FY 2019	FY 2020	FY2021
Total Revenue	256,358	222,665	470,440
Total Expenses	656,834	847,721	1,251,332
EBITDA OR Profit/Loss	-139,751	-585,569	-326,806
EBITDA Margin	-55%	-263%	-69%

Revenue figures shown are only from the sale of the products, and do not include grants. Revenue is from Cambodia and Bangladesh combined.

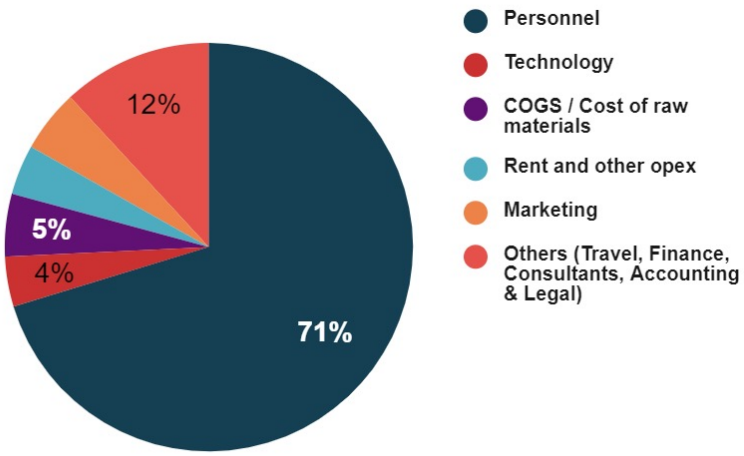
3.1.1 Revenue Streams

ATEC's revenue is generated from sales of biodigester systems and eCook units. Revenue from the sale of carbon credits will be realized over a period of 10 years, significantly increasing ATEC's revenue. ATEC does receive some grant support, which is less than 20% of the total revenue.



3.1.2 Expenses

The following chart displays the expenditure estimates of ATEC in the year 2021.



3.2 External Funding Sources (Past and Current)

ATEC has received US$3.6m in equity seed investment from the following: Elea, Schneider Electric, Engie RDE, Fondation Ensemble, Small Giants, Yajilarra, Phitrust, Beneficial Returns, Red Hat Impact, and Impact Capital Holdings. In 2022, ATEC raised US$1.3m in a bridge convertible note round to support the carbon credit market capability. ATEC has also received debt financing from SIMA and KIVA. In 2016, ATEC won the Google Impact Challenge prize. ATEC has also received grants and technical support from the Clean Cooking Alliance.

3.3 Challenges Faced In Accessing Capital

Availability: Climate finance from institutions such as Green Climate Fund and the United Nations Environment Program are channeled mainly through government institutions. These funds are provided directly to governments, who then award funding to local institutions. While ATEC focuses on providing clean cooking solutions with a climate impact, it cannot directly apply for climate finance and has to apply for climate finance from member governments, which is competitive.[17] Thus, It is difficult to access financing solutions and obtain subsidies from the Bangladesh government.

[17] As per UN Convention, climate finance is directly allocated to member countries.

4. Path To Scalability

4.1 Potential Avenues For Growth

ATEC intends to build a customer base of 3 million by 2030, through market penetration and geographical expansion. ATEC's plans include:

- **Geographic Expansion:** ATEC plans to expand, via distributor partners across Asia and Africa. Target countries include: Nepal, Zambia, Kenya, and Rwanda. ATEC will also scale-up existing operations in Bangladesh and Cambodia.
- **Product Development:** ATEC plans to develop a smart phone application, through which customers who use eCooks can track their meter and fuel consumption. A beta version of the application has been created and will be implemented by the end of 2022. The application will likewise enable increased automated data and payment flow between household products and carbon/capital markets.
- **Carbon Credits Partnership:** ATEC aims to achieve US$34.6m in carbon credit deals at the term sheet (or proposal phase) from January 2023 onwards. This will be realized through the clean cooking biodigester project, which is already registered through Gold Standard Methodology. In addition, ATEC intends to build carbon credit partnerships for eCooks. Each stove will produce 2-7 tons/year, for up to 15 years, from the date of installation, thus generating Annual Recurring Revenue. ATEC then seeks to use digital carbon credit partnerships to achieve the scale.

4.2 Risks And Challenges

- **Operational Challenges:** ATEC must spend considerable time educating customers about why its products are safe, beneficial, and cost-effective. Rural households are often initially reluctant to shift from conventional methods to new products. There is also an issue with product tampering,[18] for which ATEC has to ensure extensive logistical support to address customer problems.

[18] Tampering is when: (i) users don't follow the instructions and guidelines and over-use a system or do not keep it clean, reducing efficiency; (ii) when vermin such as rats eat through wires; and (iii) when there is breakage or damage to the system for other reasons.

4.3 COVID-19 Impact On The Enterprise

- **Need for Online Communication Strategies:** On the customer side, ATEC had to adapt its outreach and sales strategies to increase digital marketing and online communication. Many customers, specifically new ones, were hesitant to meet ATEC's sales agents in person. ATEC thus focused on growing its call center, which had been piloted in 2019 and already had a fully functioning telesales team.
- **Decrease in Rural Household Incomes:** With fewer financial opportunities for farmers, as well as declines in the tourism, garment manufacturing, and construction industries, many rural households saw their incomes decrease substantially. In response, ATEC implemented a sales promotion offering new customers a three-month free trial, prior to any purchasing commitments being made.
- **Customer Defaults:** Many farmers who had already purchased the products faced difficulties in continuing with monthly payments, as laid out in the PAYGO model. As discussed above, many customers had no extra income, and/or had to sell their homes, due to the pandemic. In such cases, ATEC provided a grace period and temporarily suspended monthly payments, until the situation improved. Presently, no such problems regarding customer defaults due to COVID-19 remain.

4.4 Support Received To Date

- ATEC received technical and financial assistance from Clean Cooking Alliance.
- ATEC received technical assistance from We4F, a funding partner of USAID, in terms of gender- based knowledge support, investment, and partnership engagement.
- ATEC received technical assistance and impact assessment support from IIX, to increase investment readiness.

4.5 Inputs Required For Growth

ATEC requires US$6.5m in Series A funding in order to expand its market reach. This funding will also be used to further develop its products and carbon technology stack, to capture both stove and carbon markets.

- 40% of the capital will be used for geographic expansion across Asia and Africa
- 40% will be used for product development
- 20% will be to drive scale through digital carbon credit and PAYGO partnership development

Series A funding will further set up ATEC to forecast US$15m in Series B funding in 2024. ATEC is also actively searching for grants and debt financing to fund its growth plans. As such, the enterprise is seeking support from investors and donors, as well as carbon credit buyers, within the voluntary carbon market.