Enable clean cooking and improve crop yields

Anticipated transaction impact
Increased disposable income for Cambodian & Bangladeshi farmers; improved cooking conditions for bottom of pyramid households.

Impact score	Pass (24/28)
Credit score	Pass (22/28)

Loan Overview

Loan amount	USD 300k; drawdown in 2 tranches of USD 150k
Tenor and structure	27 months, monthly amortizing loan
Interest rate	8%
Collateral	Unsecured

Financial Overview

2021 Revenue	USD 1.23 M
2022 Maturing loans	None
Net assets as of Dec 2021	USD 657 k

Company Information

Legal name	ATEC Australia-International Pty Ltd
Incorporation date	2 August 2016
Corporate address	Australia
Nature of business	Clean Cooking and Agriculture
Website	www.atecbio.com

Shareholders

Name	Status	Share (%)
Live & Learn	NGO	23.7
Engineers w/out Borders Australia	NGO	23.7
Engie	For-profit	23.6
Yajilarra Trust	Foundation	12.1
Fondation Ensemble	Foundation	6.6
Small Giants	Foundation	3.1

Company management

Name	Nationality	Position
Ben Jeffreys	Australian	CEO
Phillip Barrow	New Zealander	CFO
Lachlan Harris	Australian	Lead Engineer

Recommendation

Approval of a USD 300,000 facility given adequate capitalization, growing sales, and strong PAYGO portfolio metrics.

ATEC

Business overview

ATEC is an Australian company that designs and sells biodigesters and electric cookstoves (eCook) to small-scale farmers and families in Cambodia and Bangladesh. It was founded with a vision of providing clean cooking solutions to bottom of pyramid (BoP) households beset by the ills of smoked-filled cooking with biomass. It began operations in Cambodia in 2016 and expanded to Bangladesh in 2020.

ATEC has yet to be operationally profitable. It has managed to grow revenues in the preceding years apart from FY 2020 when revenue growth was interrupted by COVID-19. In FY 2021, product revenues grew 111% YoY, and total revenues, including other income, grew 158%. It has funded its expansion thus far through two main channels – equity capital to fund the bulk of its operations and debt capital to finance working capital and accounts receivables.

As sales continue to grow, particularly with the successful introduction of its eCook stoves in 2021, ATEC is seeking more working capital to finance this growth. Almost all customers pay ATEC over time through a Pay As You Go (PAYGO) model.

Impact Background

According to the World Health Organization, around 2.6 billion people worldwide still cook using solid fuels such as wood and charcoal. In Cambodia, only 33% of households have an emission-safe cookstove; up to 62% rely on firewood, and the balance 5% on charcoal for cooking. Each year, close to 4 million people globally die prematurely from conditions related to household air pollution caused by inefficient cooking. Fine soot particles released from cooking with solid fuels penetrate deep into the respiratory systems of household inhabitants. The top causes of death are pneumonia, stroke, heart disease, and lung cancer. Women and girls are particularly vulnerable due to the time they spend around the hearth.

With a population of over 16 million, Cambodia remains one of the poorest countries in Southeast Asia. 9.9% of its employed population lives on less than the international poverty line of $1.90 per day. Around 75% of Cambodia's population live in rural areas, with agriculture accounting for 20.7% of GDP and 31.2% of total employment in 2019.

Bangladesh mirrors many of those statistics but has 10 times the population at 163 million. It has made great strides in poverty reduction from 43.5% in 1991 to 14.3% in 2016, based on the same poverty threshold of $1.90/day.

Agriculture is the largest employment sector in Bangladesh, making up 14.2% of its GDP in 2017 and employing about 42.7% of its workforce.

The common reliance on agriculture and the still high incidence of biomass cooking in these countries make them especially suitable for ATEC's products. Agriculture generates substantial waste, in particular manure and residue from crops. Yet this "waste" makes for precious resource in a biodigester, that converts organic waste into fertilizer and biogas – valuable resources, particularly for smallholder farmers.

Even when a product such as a biodigester exists to close the loop in converting waste to resource, families can ill afford to make the purchase. Notwithstanding the reduction in extreme poverty rates in both countries, the general population continues to get by with little more than a mere subsistence level of income - GDP per capita is roughly similar, at ~$1,750. The one-time outlay of $700 for a biodigester is prohibitively expensive for most families in these countries. While an eCook stove that comes with a non-stick pot and a wok pan costs less at $270, it is still more than what most families can afford if an instalment plan isn't available to spread out the financial burden of the purchase.

Impact Delivery

Biodigesters use a biological process in which naturally occurring microorganisms break down organic waste such as animal manure and farm residues to generate methane. The methane output is then piped into kitchens and used for cooking, replacing wood fires. The biological process within a biodigester leaves behind bio-slurry, which can be used as fertilizer to improve soil health and promote plant growth. This replaces inorganic fertilizers that are costly and leachable and that pollute waterways. In all, biodigesters enable circularity within farming households that saves them money and improves human and soil health.

Figure 1 A farmer pouring waste into a biodigester

Figure 2 A biogas stove linked to a PAYGO panel

However, many Cambodians and Bangladeshi families reliant on biomass stoves are not farmers and don't have agricultural waste to upcycle. A study[1] on air pollution in homes cooking with biomass stoves estimates that fine particulate matter concentrations rise to 13 times the WHO guideline and 10 times the WHO recommendation for carbon monoxide. To address this obstacle, ATEC has designed an eCook stove. eCook stoves work on heating elements that are powered by electricity. Besides lowering health risk for users, each eCook stove is forecasted to reduce

[1] Air pollution dispersion from biomass stoves to neighboring homes in Mirpur, Dhaka, Bangladesh | BMC Public Health | Full Text (biomedcentral.com)

greenhouse gas emissions by ~1.3tons a year. Compared to cooking with LPG, studies in Cambodia and Bangladesh have shown a 50% reduction in running costs.

To tackle the hurdle of affordability, ATEC has equipped its biodigesters and eCook stoves with Angaza technology. This permits ATEC to remotely monitor the use of its products, to bill and collect payments on a monthly basis via mobile money, and to disable the products if customers are delinquent. Biodigesters cost $30 per month, while eCooks cost $10/mo for 27 months (refer to Figure 7 for portfolio performance).

Industry Overview

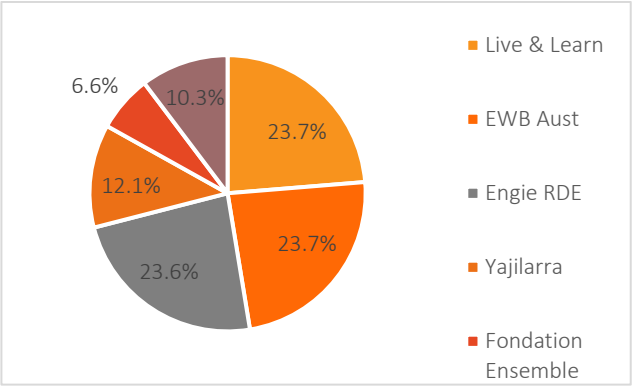
Globally, up to 800 million households have yet to be connected to clean cooking solutions. Out of this, over 70% of households have grid access, making eCook a viable solution where biodigesters are not. In Cambodia and Bangladesh, the total addressable market (TAM) is estimated at 33.7 million households. Of this number, ~20 million households are connected to the grid but cook with biomass.

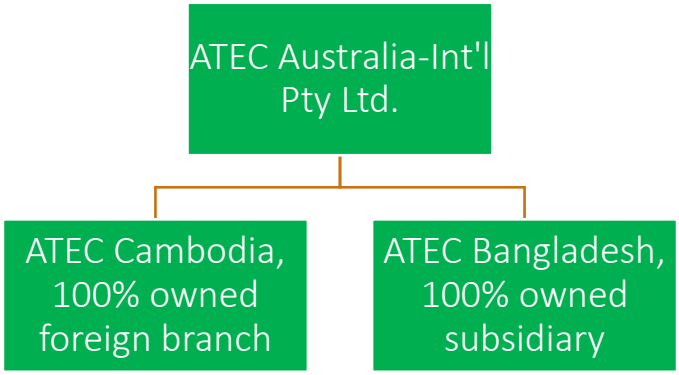
An ancillary benefit of providing clean cooking solutions is the accumulation of carbon credits. With carbon neutrality increasingly a focus of companies and nations, there will likely be an upward pressure on the price of carbon credits. While ATEC has yet to monetize its stock of carbon credits, it should increasingly constitute a significant revenue stream for the company going forward.

Company Overview

ATEC is the offspring of two Australian NGOs, Live and Learn and Engineers without Borders, incorporated with the founding vision of providing clean cooking solutions to bottom of the pyramid households. Since its incorporation, ATEC has raised 2 rounds of funding by issuing preference shares, one in 2017 and another in 2019, ending up with its current cap table. Other investors are private foundations and the French energy company, Engie, which has invested in other BR portfolio companies, Ilumexico and Sistema Bio.

Figure 3 ATEC Shareholdings and corporate structure





Ben Jeffreys has led the company as CEO since its incorporation 6 years ago. In this time, the company has grown from an idea to one about to conclude its third round of funding, underpinned by increasing sales. Before that, Ben was the National Development Manager at the School for Social Entrepreneurs, underscoring his commitment to addressing poverty and environmental issues through business solutions.

Phillip Barrow was hired as CFO, ATEC's first, in 2021 to fill a critical function as the company expands. Phil is an experienced finance professional who has held roles at various corporations for the last 20+years. He was the CFO of Lend Lease Retail and has served as an advisor to the Board of Directors of IBIS Rice Conservation Co. since 2017. Ibis Rice is a Cambodian social enterprise that works with rice farmers while protecting biodiversity in the area where they farm.

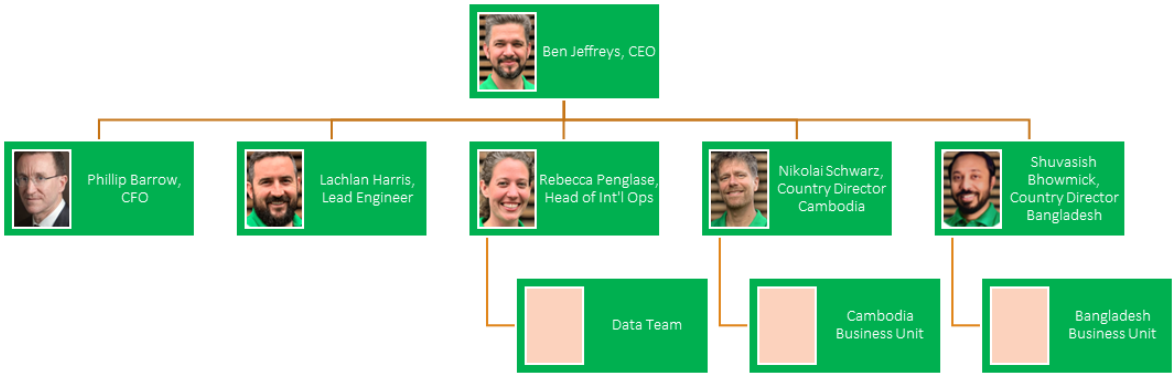


Figure 4 ATEC's Organizational Structure

Financial Overview

As recently as 2 years ago, ATEC was only selling biodigesters in Cambodia. Since that time, it has successfully introduced eCook stoves and expanded into Bangladesh, a market ~10 times the size of Cambodia. This geographical and product diversification has paved the way for a bigger market and with almost immediate results. For example, eCooks sales have surpassed biodigester sales and country sales in Bangladesh have surpassed sales in Cambodia. The investment needed to support this expansion has, however, delayed the breakeven point for the company.

Marketing expenses and key hires are the main drags on bottom line. The company hired a CFO in 2021 and will add a COO in Q4 FY2022 to streamline its supply chain management, as it seeks to drive its cost of production down. To help cushion its impact, ATEC continues to raise grant income to narrow its bottom-line loss. In FY 2021, it received over $750K in grant income – a record high as the company took advantage of COVID-related reliefs. In FY 2022, it has budgeted $585K in grant income. As of Q322, the company has raised $410k, ~70% of full-year target. Management believes they will hit their grant target by the end of the year.

ATEC has been growing its revenues. While FY2022 operating revenues might fall short of the budgeted $1.8m, it will likely still show a 200% growth from the prior year – helpful in shoring investor confidence for the upcoming Series A, planned for the second half of 2022.

For the next few years, ATEC will need to sustain its operations through equity fundraising. They have recently concluded a round of convertible notes issuance where they raised $1.32m, slated for conversion at a 20% discount into common equity at the planned Series A raise. The proceeds from convertible notes add to the company's cash level, which at $1.5m should support the company's operations for ~2 years at the current burn rate, a little under the projected tenor of our proposed facility. The burn rate will change should ATEC raise its Series A successfully, but the increased cash buffer of the raise will also further secure debt holders.

Figure 5 ATEC Income Statement, 2018-2022E

PnL	2018	2019	2020	2021	2022F
Revenue	216.8	256.4	222.7	469.4	1,880.8
Cost of Sales	-141.8	-188.6	-216.9	-338.5	-1,400.4
Gross Profit	75.0	67.8	5.8	131.0	480.4
Other income	365.4	449.9	253.8	762.3	585.8
Overhead costs	-403.8	-697.8	-878.9	-1,283.3	-1,858.8
Net Profit	36.6	-180.1	-619.4	-390.1	-792.6
Financial performance metrics					
Annual revenue growth rate		*18%*	*(13%)*	*111%*	*301%*
Gross profit margin	*35%*	*26%*	*3%*	*28%*	*26%*

Figure 6 ATEC Balance Sheet, 2018-2022

in USD k	2018	2019	2020	2021	2022
Cash	564	334	1,467	858	1,580
Receivables	37	103	128	490	625
Inventory	44	21	96	117	65
Other current assets	9	10	17	90	179
Current assets	654	468	1,708	1,555	2,449
Current liabilities	63	58	135	173	319
Working Capital	591	411	1,573	1,383	2,131
Total assets	725	539	1,754	1,658	2,651
Total liabilities	63	58	292	596	1,995*
Shareholders' equity	662	482	1,462	1,061	657

**includes Convertible Note of $971k*

Transaction overview

As ATEC continues to grow its sales, it will need increasing amounts of PAYGO debt to fund its receivables. ATEC pays its suppliers upfront and sells both biodigesters and eCook stoves on pay-as-you-go instalment plans, spread out over 27 months. In this proposed transaction, we are offering a total facility size of $300,000, available in 2 tranches of $150,000 subject to 2 main conditions precedent to drawdown.

The first condition precedent is that the company's debt-equity ratio needs to be under 2. As debt investors, we need the assurance that the company's projected operational losses have been pre-funded by common shareholders. Since the company does not incur debt for other parts of its operations, the main factors driving debt-equity ratio higher will be sales and negative earnings. We are guarding against a scenario where sales grow without an equity buffer to cushion operational losses. Considering the convertible notes have a 3-year tenor and the convertible note holders intend to convert into common equity at the upcoming Series A, we decided to include the convertible note balance as part of equity in our calculation.

The second condition precedent concerns the health of the PAYGO portfolio we're financing. On-time payments need to equal or exceed 85%. A repayment rate under that threshold can signal deteriorating credit quality or customer dissatisfaction, both of which threaten debt repayment. PAYGO technology allows ATEC to disable its equipment remotely should a customer fail to make payment and reinstate the equipment upon resumption of monthly payments, this has thus far proven effective in maintaining a healthy portfolio.

ATEC monitors its PAYGO portfolio health weekly. In 2021, 92% of the biodigesters portfolio and 90% of the eCooks portfolio were on track. In FY 2021, ATEC wrote off 10% of its average portfolio. As long as repayment rates remain around this ballpark, we are comfortable funding the company's receivables.

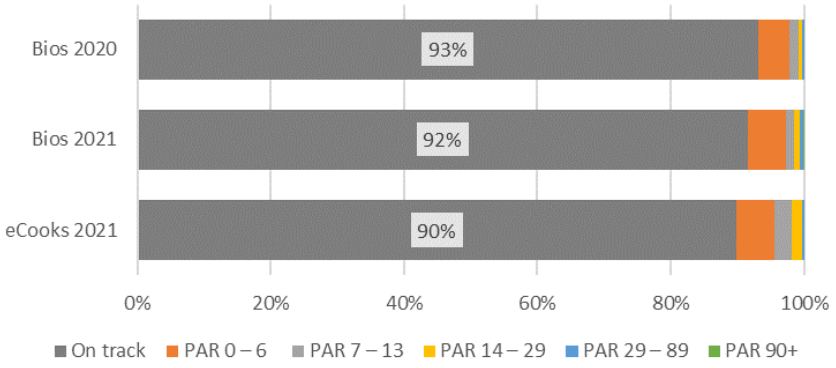


Figure 7 PAYGO Portfolio Metrics

Previous Transactions

BR made two loans of $30K each in 2019 to ATEC just as it launched its PAYGO model. The monthly repayments were always prompt, and the loans were fully repaid in Dec 2021. In that same month, BR approved another loan for $150,000 (disbursed in Q1 2022) when it became clear that the company was able to successfully fundraise to extend its operational runway. Former Beneficial Returns staffer, Kate Burgos, visited with ATEC in Phnom Penh Cambodia and Ben Jeffreys will visit Alex Tee in Singapore next month.

Conclusion

We recommend offering a total loan facility of USD 300,000, conditionally available in 2 tranches of $150,000 to ATEC given its strong impact score and adequate credit score. The successful conclusion of the convertible notes issuance, coupled with the plan to raise Series A later this calendar year, give us confidence that we are funding the growth of a financially stable company. The relatively short tenor of the loan and healthy portfolio metrics provide further assurance. We are confident that ATEC's growth will help reduce the ill effects of cooking with biomass among the millions of households still preparing meals over wood fire, starting with Cambodia and Bangladesh.

Major risks and mitigating factors

Risk	Risk factor	Probability	Risk mitigating factor
ATEC unable to reach its profitability target	Failure to achieve significant revenue growth	Moderate	▪ The company has been able to achieve strong sales growth in previous quarters in both countries. Effective marketing and PAYGO instalment plans can help increase sales of an essential product.
	Product quality is inferior leading to returns and poor reviews	Low	▪ Product sales especially for eCooks, since its launch 9 months ago have been brisk, a testament to customer reviews and word of mouth.
	Failure to control operational expenses	Moderate	▪ ATEC's recent successful fundraising through convertible notes is evidence that investors believe the present operational expenses are necessary for the company to scale.
Bangladesh proves to be a difficult market	Macro and micro factors work against ATEC in this new market	Moderate	▪ The company has used its experience of growing the business in Cambodia to a much larger serviceable addressable market in Bangladesh, evidenced by growing sales.
ATEC unable to meet its payment obligations	Inability to convert receivables to cash	Low	▪ The company performs a credit assessment before a customer is signed on. ▪ PAR of PAYGO receivables (figure 7) indicate that >90% of customers are making payments. ▪ Its partnership with Angaza is expected to provide efficiency in tracking, management, and optimization of sales and payment.

Appendix 1: ATEC Impact Assessment

Impact score: 24 out of 28

Prospective borrowers are rated with 1 point for Low, 2 points for Moderately Low, 3 points for Moderately, and 4 points for High. Minimum score of 20 for approval.

	Low	Moderately Low	Moderately High	High	Score
1 **SCALE** Is the social enterprise addressing a major social or environmental problem and do they have the capacity to make a measurable, positive difference themselves or by influencing others?				✓	4
2 **SYSTEMIC CHANGE** Is the social enterprise focused on systemic change? In other words, would the impact continue even if the social enterprise went out of business?				✓	4
3 **SUSTAINABILITY** Does the social enterprise have a business model that is or has a strong likelihood of being sustainable? This may include a portion of philanthropic revenue provided that is sustainable.		✓			2
4 **STAKEHOLDER ENGAGEMENT** Does the social enterprise engage all stakeholders in their work? Is the social enterprise building local, human resources? Does it actively share its insights with others? Are indigenous communities involved?			✓		3
5 **RIGOR** How does the social enterprise measure its own impact and how well is it doing against these metrics?			✓		3
6 **EFFICIENCY** Are the social enterprise's impact outcomes cost efficient vs. other interventions? If not, is it likely that they will become so as the social enterprise grows?				✓	4
7 **INTENTION** How committed to its social or environmental mission is the social enterprise?				✓	4
TOTAL					24

Appendix 2: Company Name Credit Assessment

Credit score: 22 out of 28

Prospective borrowers are rated with 1 point for Low, 2 points for Moderately Low, 3 points for Moderately , and 4 points for High. Minimum score of 20 for approval.

		Moderately			
	Low	Low	High	High	Score
1 **BELIEF IN MANAGEMENT** Does the social enterprise have a strong management team (extensive industry experience, strong leadership and entrepreneurial background)? Is the governance structure adequate?				✓	4
2 **ACCOMMODATIVE BUSINESS ENVIRONMENT** Is the social enterprise operating in an industry with low level of competition? Does the social enterprise provide products or services that have low threat of substitution?			✓		3
3 **QUALITY OF FINANCIAL INFORMATION** Can the financial information provided be depended on? Has its financial statements been audited?				✓	4
4 **ABILITY TO BE PROFITABLE** Does the social enterprise have a positive earnings trend? Are the earnings sustainable?		✓			2
5 **STRENGTH OF FINANCIAL POSITION** Does the social enterprise maintain adequate financial ratios (DSCR, Debt-to-equity, Current ratio) to support a debt obligation?			✓		3
6 **ABILITY TO SERVICE DEBT** Does the social enterprise have the ability to establish a strong cash position to meet its debt obligations on time?				✓	4
7 **COLLATERAL OR GUARANTEES** Is there collateral for the loan with an adequate loan-to-value amount? Is there a guarantor for the loan?		✓			2
TOTAL					22

Appendix 3: Photos of Impact of ATEC