CROSSBOUNDARY

Study Design: Appliance Financing 3.0 Energy-Efficient Productive Use
2020

CrossBoundary LLC
ABC Place, Waiyaki Way
Nairobi, Kenya

www.crossboundary.com
contact@crossboundary.com

Executive Summary

This study tests whether offering energy-efficient productive use appliances - such as grain mills and woodworking machines - on credit is a profitable service addition for mini-grid developers. Distinct from previous appliance financing iterations, all appliances are customized to the needs of rural African mini-grid customers. They are supplied by Asaga Technologies, an organization that manufactures and delivers productive use appliances to Sub-Saharan Africa.

Productive use appliances contribute significantly to the profitability of a mini-grid. For example, a grain mill operator on one of the Lab developer's existing sites consumes 300kWh/month of electricity in a region where the median mini-grid customer consumes 3kWh/month. This single grain mill operator therefore consumes as much power *as one hundred typical customers*. Productive use appliances like grain mills typically have power ratings of 1,000-10,000 watts (1-10kW), 10x more than commercial appliances like shop fridges (50 – 100 watts), and 100x more than household appliances like TVs (30 – 50 watts). Moreover, productive use appliances are typically operated during the day when electricity from solar mini-grids is cheapest for developers to provide.

Productive use appliances also generate income for their users, supporting local economic development. Over time this supports the mini-grid business model further by supporting customers to spend more on electricity as they can afford more.

While the business case for mini-grids to support productive use appliances is strong, most existing off-grid appliances like grain mills and rice huskers are typically diesel-powered. To convince these customers to switch to mini-grid power, developers must offer electric appliances that can produce grain or other products at the same quality, and generate as much profit. However, developers have so far struggled to do so. A report released by Lighting Global in July 2019 found that "solar-powered agro-processing units do not currently match diesel units in terms of performance at any scale".

To address this business model challenge, the Lab is partnering with Asaga Technologies to provide productive use appliances specifically designed to deliver the output and performance that rural off-grid customers in Africa need. This is an iteration on previous versions of the Lab's appliance financing prototypes:

- Appliance Financing 1.0 focused on household and commercial appliances such as TVs and freezers, and;
- Appliance Financing 2.0 focused on generic productive use appliances that weren't targeted to the off-grid market in Africa.

The primary objective of the study is to:

1. Determine the impact of offering energy-efficient productive use appliances on:
    a) the economics of mini-grids and grid load
    b) customer adoption of appliances and impact on customers' financial wellbeing

The study targets customers of currently operating mini-grids in Africa. The study will be conducted on sites where the community is offered energy-efficient productive use appliances on set financing terms. Appliances and financing to purchase those appliances will be offered to all current and potential customers at selected site(s).

The study will assess the impact of offering energy-efficient productive use appliances customized to the African mini-grid market on credit alongside electricity, on three principal matters: (1) grid economics, (2) grid load, and (3) customer adoption of appliances. The impact of the prototype on grid economics will be analysed by assessing ARPU, program profit (or loss), and proportion of energy consumed during the day, among other metrics. Grid load will be assessed by measuring energy delivered. Customer adoption will be evaluated by measuring the time it takes developers to sell the appliances and customers' profits from productive use activity. Control sites will be used to compare changes observed at treatment sites.

The study will be delivered by the Operator, who will organize support from technical advisors and other third parties as necessary. The Study Partners will provide funding for the study, collect all relevant data, and analyze the results as they pertain to each hypothesis. The results will be made publicly available on an anonymized, aggregated basis. The study is expected to run over a two-year period, beginning January 2020.

Study Partners

The following table outlines the role of each partner involved in the study.

Partner	Role
Funder	• Provides funding • Offers strategic oversight for the study
CrossBoundary (CB)	• Manages all aspects of project • Leads study design • Disburses and monitors funds provided to Operator • Leads data collection, including surveying, and data cleaning • Leads analysis and communication of study results
Operator	• Provides insight into study design • Operates the mini-grids involved in the study and leads site implementation of study • Supplies data to CrossBoundary and other partners for analysis

Partner	Role
Other partners	**Academic institutions:** • Supports study design • Supports analysis and communication of study results **Asaga Technologies and other third parties (as identified):** • Supports Operator in site implementation of study

Introduction

Mini-grids are emerging as a viable technology to accelerate access to electricity in Sub-Saharan Africa. However, for mini-grids to become sustainable and scalable commercially, profitability must improve. This study seeks to improve grid economics by answering the question: can developers increase customer consumption, and thus revenue, by offering energy-efficient productive use appliances on credit, alongside electricity?

Productive use appliances contribute significantly to the profitability of a mini-grid. For example, a grain mill operator on one of the Lab developer's existing sites consumes 300kWh/month of electricity in a region where the median mini-grid customer consumes 3kWh/month. This single grain mill operator therefore consumes as much power *as one hundred typical customers*. Productive use appliances like grain mills typically have power ratings of 1,000-10,000 watts (1-10kW), 10x more than commercial appliances like shop fridges (50 – 100 watts), and 100x more than household appliances like TVs (30 – 50 watts). Moreover, productive use appliances are typically operated during the day when electricity from solar mini-grids is cheapest.

Productive use appliances also generate income for their users, supporting local economic development. Over time this supports the mini-grid business model further by supporting customers to spend more on electricity as they can afford more.

While the business case for mini-grids to support productive use appliances is strong, most existing off-grid appliances like grain mills and rice huskers are typically diesel-powered. To convince these customers to become mini-grid customers, developers must offer electric appliances that can produce grain or other products at the same quality, and generate as much profit. However, developers have so far struggled to do so. A report released by Lighting Global in July 2019 found that "solar-powered agro-processing units do not currently match diesel units in terms of performance at any scale".

The upfront cost of productive use appliances can be a major barrier to purchase, particularly in communities that do not typically have access to credit. Appliance financing schemes offer a promising solution to overcoming this barrier, thereby spurring the beneficial use of electricity and increasing demand within communities. For productive use appliances in particular, such programs encourage income generation activities within a community. Offering appliances and

supporting financing is therefore a compelling business line to add to a mini-grid project and one the mini-grid operator can potentially manage directly, thus improving overall grid returns.

In the first iteration of appliance financing programs run through the Lab, mini-grid developers spent significant resources tracking loan repayments and did not see consumption shift to the daytime when generation is cheapest. Therefore, in the second iteration of the program, Appliance Financing 2.0, developers are using Angaza's payment technology to more easily manage financing-related payments, and provide customers with exclusively productive use appliances typically used during the day. The appliances procured for Appliance Financing 2.0 were not designed specifically for the African off-grid market, and customer adoption has proved a challenge because of the inferior quality of their performance. For example, grain mills procured in China have required extensive reconfiguration to produce flour fine enough to suit Tanzanian consumers' preferences.

To address this, in this third iteration of the program the Lab is partnering with the manufacturer and supplier Asaga to provide productive use appliances specifically designed to deliver the output and performance that rural off-grid customers in Africa need. Developers will again use Angaza technology to alleviate the burden of managing loan repayments.

This study, therefore, seeks to:

1. Determine the impact of offering energy-efficient productive use appliances on:
    a) the economics of mini-grids and grid load
    b) customer adoption of appliances and impact on customers' financial wellbeing

The study targets customers of currently operating mini-grids in Africa. The study will be conducted on sites where the community is offered energy-efficient productive use appliances on set financing terms. Appliances and financing to purchase those appliances will be offered to all current and potential customers at selected site(s).

Experimental Design

Hypotheses

The following table details the hypotheses the study will test and how each will be measured. **Treatment sites** are defined as sites where appliances are offered; **control sites** are defined as sites where no appliances are offered.

Hypothesis	Metric	Source
Grid Economics **1. ARPU at treatment sites will be 10% higher than at control sites after two years (after adjusting for baseline ARPU differential between sites).**	• ARPU	• Smart meters

Hypothesis	Metric	Source
2. Consumption at treatment sites will shift to increased daytime usage. **a. ACPU during daylight hours at treatment sites will be 25% higher than at control sites after two years (after adjusting for baseline ACPU differential between sites).** **b. The fraction of total energy consumed during daylight hours at treatment sites will be 5 percentage points higher than at control sites after two years.**	• ACPU • % of total daily consumption occurring during daylight hours	• Smart meters
3. The additional revenue from increased consumption and interest payments on appliances will cover the total costs to the operator of managing the program, including all direct and indirect costs*. **Consists of: procuring appliances, delivering appliances, managing loan repayments (the costs of Angaza), and repossessing appliances (as necessary)*	• Profit (or loss) of program	• Developer data
4. The total cost of using Angaza technology to manage loan repayments will be less than the total cost of managing loan repayments without using Angaza technology.	• Change in management costs per customer	• Angaza invoices • Developer data
5. Historically higher-user customers will exhibit the highest repayment rates at treatment sites.	• Repayment rate, segmented by customer quartiles	• Developer data
Grid Load		
6. Solar mini-grids can sustain the load and meet the technical requirements of common productive use appliances, such as grain mills.	• Energy delivered as % of maximum theoretical energy generated • Voltage generated • Current generated	• Smart meters • Developer data

Hypothesis	Metric	Source
Customer Adoption		
7. Appliances procured through the program will be sufficiently well-suited to the mini-grid market that developers sell 90% of their inventory within one month of beginning sales.	• Proportion of inventory sold within one month	• Developer data
8. After two years, increased revenue or avoided expenditure resulting from use of the appliance will be greater than the cost of purchasing and operating the appliance.	• Revenue from productive use activity • Cost of productive use activity • Avoided expenditure on equivalent product	• Customer survey data
9. For customers who previously used diesel-powered appliances, it is equally or more profitable to use the electric appliances purchased through the program as compared to appliances powered by diesel.	• Revenue from productive use activity • Expenditure on fuel or electricity for productive use	• Customer survey data

Site and Participant Selection

Treatment sites will be chosen according to where the Operator has current operations and offering appliances is feasible. Control sites will be chosen to resemble treatment sites as closely as possible, based on population, geography, profile and use of customers, and tariff structure.

All sites are eligible to serve as treatment sites; however, priority will be given to those sites meeting the following criteria:

- At least 100 customers
- At least six months of customer consumption and billing data
- Capability to automatically measure customer consumption and payment
- Sites with sufficiently wealthy customers to afford appliances on credit
- Sufficient generating capacity to sustain the use of productive use appliances

See *Annex 2* for Operator-specific site selection information.

Participants are those households who choose to purchase appliances. All households considered members of the community or village will be given the opportunity to purchase appliances.

Duration

The study is expected to run two years, starting as soon as possible upon the signing of the Operator Agreement. The projected timeline of the study is January 2020 – January 2022. Early results will be analyzed after three months and quarterly thereafter.

The study's duration may be adjusted following initial results or any unforeseen circumstances.

Prototype-Specific Design Decisions

Appliance Choice

Appliances offered to study participants will be chosen based on the following inputs:

- Customer demand
- Mini-grid sustainability
- Operator feasibility
- Availability from supplier

Appliance Pricing

Pricing for each productive use appliance will be based on the wholesale cost of that appliance. Loan terms will be set to reflect commercial standards.

See *Annex 2* for Operator-specific design information.

Budget and Disbursement of Funds

The Operator is responsible for providing a budget that accurately reflects the cost of running the study in excess of standard operations. The Operator is responsible for funding 25% of the cost of appliances, shipping, tax, customs, and clearance, as quoted by Asaga, and all costs incurred for sales, marketing, and any necessary technical work. See *Annex 2* for Operator-specific budget information.

Prior to receiving funds, the Operator must submit the following:

- Approved budget
- Signed Operator Agreement (consisting of the Grant Agreement and Study Design)
- Historical remote monitoring data, as available
- Site economic data

Funding of [budget] will be disbursed by CrossBoundary to the Operator in a single payment upon submission of all required materials. This funding will cover the remaining 75% of appliance costs, as quoted by Asaga, and all costs incurred transporting appliances to site and using the Angaza platform to manage loan repayments.

The Operator is required to maintain a record of all costs incurred in implementing and running the study and must provide receipts reflecting the totality of costs to CrossBoundary. The Operator agrees to use funds solely for the purposes of the study.

CrossBoundary is responsible for monitoring the use of funds for the purposes agreed with the Funder.

Implementation

Operator

The Operator is responsible for operating all sites involved in the study and implementing the prototype on selected treatment sites as agreed to in this Study Design. This involves but is not limited to the following:

- Procuring and distributing productive use appliances offered to study participants
- Managing study participants' repayment of loans on productive use appliances through Angaza's platform
- Communicating all relevant information to study participants

The Operator will lead in engaging all third parties involved in the study and is responsible for thoroughly researching and proposing all third party collaborations. The Operator is also responsible for identifying and procuring any licenses or other regulatory approval required to implement the prototype. See *Annex 2* for Operator-specific implementation information.

The Operator agrees to inform CrossBoundary of any occurrences that may affect electricity consumption or other study results, and identify customers affected by such interventions (e.g. changes in tariff or meter numbers). The Operator additionally agrees to disclose any other information pertinent to the study (e.g. geospatial data on household location).

Third Parties

This study will involve two third parties: (1) Asaga Technologies and (2) Angaza.

Asaga Technologies, formerly China Impact Ventures, is an organization that manufactures and delivers productive use appliances to Sub-Saharan Africa. Asaga is responsible for supplying selected productive use appliances to the Operator in the quantities ordered and offering comprehensive warranties for those appliances. One-year warranties will be offered on all small appliances; two-year warranties will be offered on all large appliances.

Angaza is a technology platform designed for product distributors in emerging markets, based in the United States. Angaza is responsible for providing customer payment software to assist the Operator in managing customers' loan repayments.

Licenses and other Regulatory Approval

No licenses are required to implement this study, apart from the standard licenses required to operate mini-grids in [country].

Data Collection

All data shared through execution of the study is protected by a direct Non-Disclosure Agreement with CrossBoundary. Data will only be shared with partners approved by the Operator as outlined in the Non-Disclosure Agreement on an aggregated and anonymized basis to protect customer information.

Through participation in this study, the Operator agrees to share three types of data: (1) remote monitoring and customer data, (2) prototype-specific data, and (3) site economic data. Additionally, the Operator agrees to allow CrossBoundary to collect survey data. The following table details the data the Operator is required to share, or allow CrossBoundary to collect, as part of the study.

Data Type	Metric	Unit	Frequency & Timing
(1) Remote Monitoring & Customer Data	**Customer consumption**	kWh	Twelve months' historical *(as available)*, prior to disbursement of funds + monthly for duration of study
	Customer electricity payment	Local currency	Twelve months' historical *(as available)*, prior to disbursement of funds + monthly for duration of study
	Meter numbers with customer information	Various	Once, prior to disbursement of funds
(2) Prototype-Specific Data	**Productive use appliances purchased with meter number, purchase date and price, and delivery date**	Various	Monthly for duration of study
	Monthly customer appliance loan repayment	Local currency	Monthly for duration of study
	Costs of running the program, including a breakdown of sales & marketing, travel, HR, and IT	Local currency	Quarterly for duration of study

Data Type	Metric	Unit	Frequency & Timing
	Theoretical maximum energy generation **a. Solar PV capacity** **b. Specific yield at site** **c. Internal losses**	kWh/kWp	Quarterly for duration of study
	Productive use appliances procured through Asaga	Number	Once, at outset of study
(3) Site Economic Data	**As shown in *Annex 1***	Various	Once, prior to disbursement of funds
(4) Survey Data	**Various demographic, socioeconomic, and user experience data**	Various	Four times, prior to the prototype's launch, after 6 months, after one year, and following the prototype's end

(1) Remote Monitoring and Customer Data

To evaluate the study's success, the Operator will share electricity consumption and payment data alongside smart meter numbers for all customers on control and treatment sites. This should take the form of raw smart meter data exhibiting the highest resolution available (e.g. individual payment records on a fifteen minute to hourly basis).

Historical consumption and payment data for the twelve months prior to the prototype's launch must be provided upon signing of the Operator Agreement, before disbursement of funds. In the case this data does not exist (e.g. a site involved in the study is newly constructed or yet to be built), the Operator will provide historical data for as many months prior to the prototype's launch as is available. Following the prototype's launch, consumption and payment data must be shared on a monthly basis for the duration of the study.

The Operator will share all consumption and payment data with CrossBoundary through the Lab's data platform, managed by Odyssey Energy Solutions, via API integration with the smart meter account. Should this not be feasible, the Operator will share all data as otherwise agreed to by both parties.

Additionally, to facilitate data analysis and survey conduction, the Operator will share a list of all meter numbers with customer name, customer ID, connection date, phone number, site, and site geographic coordinates. This information must be provided upon signing of the Operator Agreement, before disbursement of funds and may be uploaded to Odyssey.

(2) Prototype-Specific Data

Any prototype-specific data required to evaluate the study's success must be shared for control and treatment sites on a regular basis for the duration of the study. Data that will remain constant over time need only be shared once at the outset of the study. All customer-level data should be tagged by smart meter number. See the previous table for a schedule of the required prototype-specific data.

The Operator will share all data with CrossBoundary by uploading files to Odyssey.

(3) Site Economic Data

To assess the study's impact on mini-grid site economics, the Operator will share required site economic data for control and treatment sites. This data will be used to quantify the prototype's effects on Operator revenues, costs, and other important economic drivers.

Site economic data must be provided upon signing of the Operator Agreement, before disbursement of funds. The data should be shared by Operator's completion of the Excel table shown in *Annex 1*, which may be uploaded to Odyssey.

(4) Survey Data

Surveys will be conducted to collect demographic, socioeconomic, and user experience data of study participants at control and treatment sites. Three surveys will be administered over the course of the study: (1) a baseline survey deployed prior to the prototype's launch, (2) a midline survey deployed one year after the prototype's launch, and (3) an endline survey deployed following the prototype's end.

The surveys will measure asset ownership, current spending patterns, and current energy use patterns, among other metrics. The endline survey will include a module asking the customer for detailed feedback on the productive use appliances purchased. This data will be analyzed to understand the prototype's impact on the socioeconomic status and well-being of participants.

The following table details the survey schedule for this prototype.

Survey	Audience	Format Administered
Baseline	Control and treatment sites, sample survey	Phone / In person
Midline	Control and treatment sites, sample survey	Phone / In person
Endline	Control and treatment sites, sample survey	Phone / In person

CrossBoundary will deploy the surveys through Ipsos with funding from the Innovation Lab budget. The schedule, audience, and format of surveys may change given any updates to Lab funding or study needs (i.e. sample size).

Risks

The following table outlines the risks involved in the study.

Risk	Description	Probability	Mitigation
Reliability of appliances	Some Chinese-sourced mills have previously proved unable to mill African maize because African maize is purportedly hard and difficult to grind	Low	• Developers pre-test appliances in-country before deploying to customers • Work with Asaga to identify products best suited for mini-grid use and solve any performance issues related to appliances
Customer acceptance of appliance and quality of product	Customers are quite particular about products such as flour - the fineness is crucial for sales; millers also tend to prefer large diesel machines for faster throughput	Medium	• For mills: test appliances in-country with multiple sieve sizes to ensure flour is fine enough • For mills: Offer appliances under a discounted tariff structure to optimize the business case for millers
Increasing mini-grid capital and operational expenditure	At sites where a diesel generator supplements solar generation, increasing consumption on the mini-grid could raise opex due to increased diesel consumption by the genset; large increases in consumption could require capex expansion	Medium	• Instate time-of-use tariffs for productive use appliances to incentivize daytime consumption, drawing power primarily from solar rather than batteries or genset • In the case daytime loads increase dramatically, set the genset to run during peak load

Risk	Description	Probability	Mitigation
Increased frequency of inverter overload events	Mini-grid inverters can be tripped by high inrush current of motored loads, increasing the frequency of grid-wide outages	Low	• Research motor starters for mitigating the inrush current • Instate time-of-use tariffs to discourage usage from residential customer at times of peak demand

Analysis and Evaluation

Full analysis and evaluation of the study's results will be performed by the Study Partners.

Analysis

Study Partners will thoroughly evaluate each hypothesis against the metrics outlined in this Study Design, both periodically throughout the study and at the study's end. Partners will, additionally, monitor and analyze the prototype's effects on customer behavior as well as its social and economic impact on treatment communities.

CrossBoundary will analyze to what extent the prototype improves the mini-grid business model and quantify the benefit or cost to developers of incorporating the prototype into their standard operations. CrossBoundary will do this by applying observed changes in revenues and costs to its proprietary financial model. The resulting impact on project IRRs and cash flows will be evaluated under different scenarios. CrossBoundary will also assess the impact of the prototype on customers' wellbeing and economic opportunities. CrossBoundary will then recommend improvements to the prototype's design and implementation, to be incorporated into a later study or taken up directly by developers.

Dissemination of Results

Regularly throughout the study, CrossBoundary will publish a brief report, or *Innovation Insight*, capturing the study's results against each hypothesis in an anonymized and aggregated form. At the end of the study, CrossBoundary will publish a complete report capturing the study's final results as well as the Lab's recommendations on scaling, further testing, or discarding of the prototype. For each report, all developers involved in the Lab will be given time to review the report for completeness and accuracy ahead of the report being published. The reports will be made publicly available and shared with stakeholders engaged in CrossBoundary's work, including but not limited to mini-grid operators, donors, investors, and government agencies. Findings may also be disseminated through sector events, such as conferences and workshops. Other Study Partners may publish anonymized and aggregated study results in peer-reviewed academic journals.

Annex 1: Site Economic Data

Key Project Economic Data
LC = Local Currency

Instructions: Please complete all cells colored blue. Note some rows are optional.

Input	Unit	Name of Site 1	Name of Site 2	Name of Site 3	Name of Site 4	Name of Site 5
Mini-Grid Sizing						
Number of Connections	#					
PV Generating Capacity	kW_p					
Battery Inverter size *(optional)*	kVA					
PV Inverter Size *(optional)*	kVA					
Diesel Generator Set *(optional)*	kVA					
Battery Storage *(optional)*	kWh					
Battery Regular Depth of Discharge Limit *(optional)*	%					
Number poles *(optional)*	Poles per site					
Diesel Use *(optional)*	litre/month					
kWh Produced from Diesel *(optional)*	kWh/month					
Diesel Cost *(optional)*	LC/litre diesel					
Diesel Expenditure *(optional)*	LC/month expenditure					
Night time consumption as % of total consumption *(optional)*	%					
Total CapEx						
Project Development Cost	LC					
Generation CapEx	LC					
Distribution CapEx	LC					
Labour CapEx	LC					
Logistics CapEx	LC					
OpEx						
Annual OpEx (historical)	LC /site/year					
Annual OpEx (projected)	LC /site/year					
Revenue						
Average tariff	LC /kWh					
Average consumption	kWh/month/customer					
15-year Consumption Forecast	kWh/month/customer	*See table below*	*See table below*	*See table below*	*See table below*	*See table below*
15-year ARPU Forecast	LC /month/customer	*See table below*	*See table below*	*See table below*	*See table below*	*See table below*

Consumption and Revenue ForecastDevelopers may specify assumptions rather than a specific consumption/revenue forecast e.g. annual escalation of 5%
Note: You may specify assumptions rather than a specific consumption/revenue forecast (e.g. annual escalation of 5%)

Year	*Unit*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Average Monthly Consumption Per Customer	kWh/ month /customer															
Average Monthly Revenue Per Customer	LC / month /customer															
Implied Tariff	LC/kWh	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check	Automatic formula for sense check

Annex 2: Operator-Specific Information

Site Selection

The following sites have been selected for execution of the study with [developer] in [country].

Site	Study Purpose	Households	Current Connections	Additional Information

More sites may be added to the study pending initial results and Lab budget.

Budget

The following budget has been agreed to for execution of the study with [developer] in [country].

Implementation Plan

The following implementation plan has been agreed to for execution of the study with [developer] in [country].

Technical Design

The following details the technical design of the study with [developer] in [country].

Pricing and Loan Terms

The Operator will offer financing for the appliances over a 12-month period, requiring a deposit of 20% of the appliance's cash price and with monthly installments based on a 2.55% monthly interest rate. The following table details the implied deposits and monthly installments (to be converted into local currency).

Appliance	Cash Price (USD)	Deposit	Monthly Installment	Tenor
Home Use Grinder: 250g	$56.00	$11.20	$4.38	12 months
Home Use Grinder: 400 g	$61.00	$12.20	$4.77	12 months
Home Use Grinder: 500g	$77.00	$15.40	$6.02	12 months
Home Use Grinder: 500g (with rocking container)	$91.00	$18.20	$7.12	12 months
Home Use Grinder: 800g	$102.00	$20.40	$7.98	12 months
Home Use Grinder: 1500g	$122.00	$24.40	$9.54	12 months
Home Use Grinder: 2000g	$158.00	$31.60	$12.36	12 months

Additional appliances may be added following launch of the study.