



Employment & Investment Survey Cambodia, March 2018

About the Context

- In Cambodia, Laos and Vietnam, **over 65 million people**¹ still cook on traditional biomass stoves.
- According to the WHO, **60,000 people die annually**² in these countries as a consequence of inhaling smoke from cooking.
- A new generation of so-called **Advanced Biomass Cookstoves** (ABCs) can drastically reduce the health hazards associated with biomass cooking.
- While ABCs exist elsewhere, they were **virtually unavailable** to households in the Greater Mekong Sub-region at the on-set of this project.



Traditional stove user in Cambodia

¹ WHO Global Health Observatory Data Repository

² Global Burden of Disease Report 2010

About the Project

- The EnDev Results-based Financing (RBF) project aims to **kick-start** and **accelerate the market for 'Advanced Biomass Cookstoves'** which are cleaner, safer, and more fuel efficient than other biomass stove alternatives.
- The project's objectives are to:
 - **Increase** the number of private sector actors in the market
 - **Improve** access to cleaner and more efficient cooking energy services for end-users
 - **Demonstrate** a new innovative way of using RBF as a tool to accelerate energy access



Advanced Biomass Cookstove user in Cambodia

About the Project

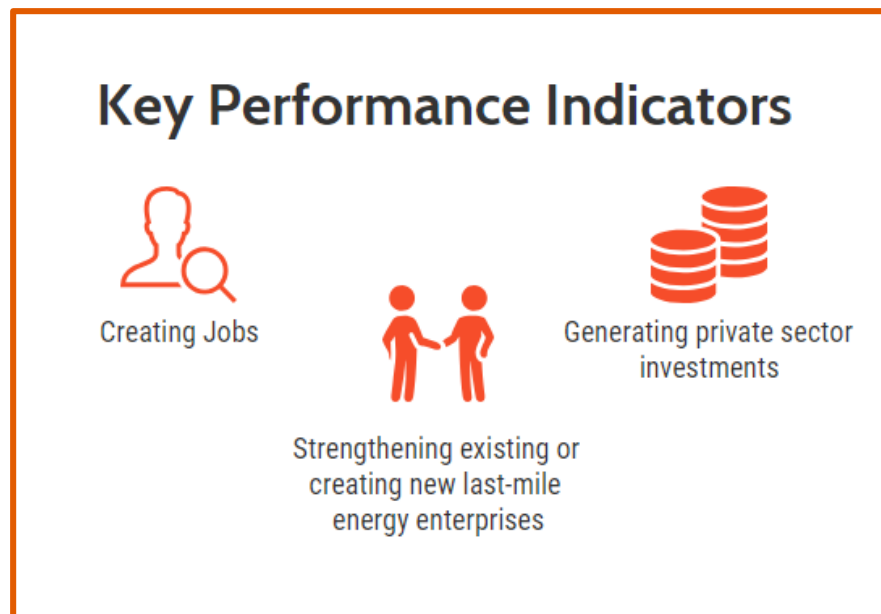
- The main intervention to achieve the project objectives is the creation of an **'Auction Platform'** in each country as a **dynamic market-based mechanism** to **determine required RBF incentives** for the development of **self-sustaining markets** for ABCs.
- In Cambodia, the project focusses on **imported ABCs** from overseas-based international manufacturers and on **facilitating the vital business relationships** to local clean energy distribution companies.
- The project **significantly reduces market entry risk** for international manufacturers, and **gives local distributors the opportunity** to purchase small quantities of ABCs to **gain initial experiences** with this new product, **test the market**, and **develop business models**.
- Through the dynamic RBF auction mechanism, **wholesale prices** paid by local distributors and **retail prices** paid by end-users become **gradually more sustainable**, creating a market that **functions without RBF** support.



Stove Auction Warehouse in Cambodia

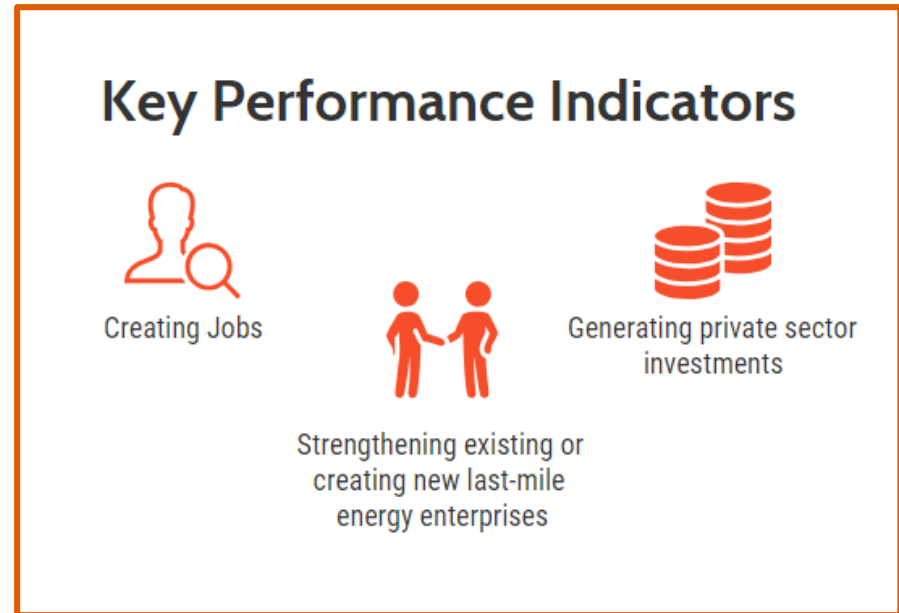
About this Survey

- Key indicators for the project include the **impact** the project has on **creating jobs**, **strengthening existing** or **creating new energy enterprises**, and on **leveraging private sector investments** in the ABC sector.
- Initially, the project only gathered **anecdotal information** from project participants and **personal observations** from project staff on these indicators.
- To introduce a **systematic assessment**, this 'Employment & Investment Study' was conducted in March 2018 to formally **measure and report** on these impact indicators.



About this Survey

- In particular, the survey aimed to:
 - **Capture** information about the project participants' journey in the project and how the project impacted their business operations
 - **Determine** the effect the project had on job creation in the project participants' enterprises
 - **Quantify** the capital investments project participants made in the ABC sector
 - **Identify** the future outlook for project participants' continued operation in the ABC sector after the project ends



About this Survey

- The following methodology was applied for the survey:
 - **Key representatives** from **major project participants** provided inputs via **semi-structured in-person interviews** following a **questionnaire**.
 - The **‘Most-significant-change methodology’** was used to prompt respondents to **reflect on the changes** that occurred in their enterprises **as a result of their participation** in the project.
 - Respondents were asked to **consult their enterprise documentation** to provide **accurate estimations** of **jobs created** and **investments made**.
 - Interviews were conducted by 3 EnDev/SNV project staff in **March 2018 - 2 years after** the project started in **Cambodia**.

The image shows three overlapping survey documents. The top document is titled 'Methodology for Employment & Investment Study' and outlines the research approach. The middle document is the 'Interview Guide for Employment & Investment Study', which includes a table for participant information and a list of interview questions. The bottom document is the 'Survey questionnaire', which contains various forms for data collection, including a table for company profile and a section for project participation.

Name of Interviewee (ENP)	Name of Interviewee (ENP)
Project Participant Name	Mr. Sok Thary, Mr. Pheh Tephoul
Name of organization	Mr. Pheh Tephoul
Position of respondent	Mr. Pheh Tephoul
Date of interview	15/03/2018
Location of interview	Mr. Pheh Tephoul

Survey methodology & questionnaire

Report Structure

- The report is divided into an '**Executive Summary**' that presents the **key findings** of the study; followed by **sections based on the role** each stakeholder plays in the project and the ABC market.
 - **International Manufacturers**
 - **Local Distributors**
 - **Sector Enablers**
- Project participants share **stories** and **experiences** based on their participation in the project, as well as their **outlook** for their **future engagement** in the ABC sector.
- An annex includes underlying **calculations**, **data sheets**, questionnaire **templates**, and **list of interview respondents**.

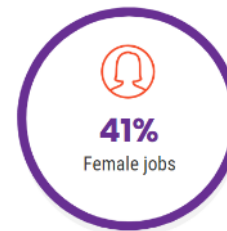
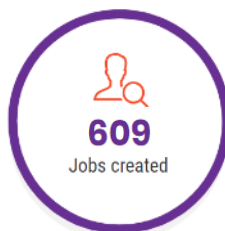


Executive Summary

Key Findings

■ Employment:

- More than **600 jobs** have been created in the **2-year period** since the project began. This includes **115** full-time and **494** part-time jobs (incl. commission-based jobs).
- **41%** of these jobs are held by **women**, and **23%** by **youth***.
- Jobs created occur in **different functions** in the supply chain, predominantly in **production, sales, accounting/finance** and **management**.
- Jobs were created in **5 countries**, and in addition to **Cambodia** also include **Indonesia, Lesotho, Vietnam** and **China**.



■ Investments:

- Over **USD 660,000** in **private sector enterprise investments** were leveraged by the project.
- Companies generated over **USD 1.3m** in **revenue** as a result of their participation in the project.



Key Findings

- Strengthening of enterprises:
 - **9 energy companies** were strengthened and **2 were created** as a direct result of the project.
 - Indicators for **strengthened enterprises** include:



Key Findings

▪ Future Outlook:

- International Manufacturers emphasize the **key role** that the RBF project had in **introducing them to the Cambodian ABC market** & see **great potential** in the local ABC market post-project.
- Local Distributors likewise **see great business potential** in the ABC sector, but voice **concerns over future importation prices** and **lacking wholesale structures** that could impair their continued operation in the ABC sector. **However**, they **indicate potential solutions** they are considering, such as **ventures for local ABC production and/or assembly**, to address this.



International Manufacturers



African Clean Energy

African Clean Energy B.V. is a Private Limited Company headquartered in the Netherlands. ACE manufactures and distributes the 'ACE-1 Solar Biomass Cookstove', a cookstove that has the power to save millions of lives, halt deforestation and help people break the poverty cycle.

www.africancleanenergy.com



“Congratulations on running a very very important programme. [...] we have made a range of very important learnings [about operating in this new market] and [project donors] need to understand that these things do not happen over night, but know that they have created something very very positive for the long-run [...].” – Ruben Walker, ACE

Our Participation in ‘The Stove Auction’

- The **facilitated connection to local Cambodian distribution companies**, as well as the fact that we can **earn incentives based on our performance [rather than grants]**, is what convinced us to join the auction.
- After joining the project, we decided to **establish a company branch in Cambodia to build a permanent presence in Cambodia**, to **ensure that our brand is well represented** in this new market, and to eventually also **expand regionally**.
- The RBF incentives earned through the project **provided us with the working capital we needed to offer in-house payment plans** to our customers, allowing our customers to pay off their ACE stoves in small instalments over time.
- By March 2018, we **sold 3,225 units** of the ACE-1 stove and have been able to claim end-user **RBF incentives for 2,200 units** so far.
- Thanks to this project, ACE is now **present in a new market**, our **product is distributed by several local last-mile energy companies in Cambodia**, and we’ve seen our **revenue grow**.
- The project assisted us to **move forward in our mission to extend sustainable cooking solutions beyond the sub-Saharan continent**. Cambodia, with its abundant biomass resources and without domestic fossil fuel production, **is a prime market** for ACE.
- We **have grown our business network in Cambodia**, quickly **learned about relevant customer segments for our product**, and **made technical adaptations to our product to address local preferences**.
- We also learnt about Cambodian buyers' decision-making processes and user behaviour, **adapting our sales techniques accordingly**.



Jobs & Investments

- The project enabled us to take the risk of entering the Cambodian market, allowing us to now be **present in 3 countries** besides Lesotho.
- Since our involvement in the project started, **28 new jobs** have been created at our manufacturing facility **in Lesotho** (from 45 employees in 2015 to 73 employees by 2018) mostly **due to the increased demand** from Cambodia, and **more than 20 new jobs** were created at our branch in Cambodia.
- ACE has so far **invested approximately USD \$100.000** of its **own capital** to support its entry into and growth in the Cambodian market. The investment was used for raw materials, stove inventory, and end-user financing within our local distribution company.
- ACE was not able to quantify investments made in product R&D and enterprise database systems. However, it **attributes an range of product improvements** to the lessons learned from participating in the Cambodian ABC market.
- With an **improved product, expanded international distribution**, and **growing sales and revenues**, ACE has become an **attractive case for potential investors** and is **currently in discussion with several large investors** for a major debt/equity investment.
- ACE has **already attracted an investment** that allows it to develop and test a **smartphone-based PAYGO system** for its stove which is expected to resonate particularly well in Cambodia and to have a **major impact on sales in Cambodia in future**. This innovation in turn will contribute to ACE being a **more investable company**.



Our Future in Cambodia

- We are pleased with our **growth and performance** in the Cambodian market so far. We have successfully adapted to the Cambodian market which allows us to **currently sell more than 200 units per month**, with the prospect of selling 500 units per month by the end of the RBF project. An eventual sales volume of 700 units per month, **enabled by local production**, is feasible.
- We have placed a substantial effort into the Cambodian market. The market for the ACE-1 model is encouraging, as the **stove is sold at 100% of its commercial landing price**, an ideal price for distribution. Local production could make this price sustainable for ACE-1 distributors.
- This is the **first project that supports the ABC market in Cambodia**, and as is the case with many innovations, there have been a range of challenges. The market requires time to **consolidate and develop robust distribution networks** for the new stoves. ACE argues that stove sales figures **tell part but not all the story behind the project** and that they will continue working diligently as the **opportunities in this market are promising**.





prime
COOKSTOVES

Established in 2013, Prime Cookstoves is rapidly expanding its sales of highly-efficient ultra-clean biomass cookstoves to distributors in Asia and Africa.

www.primestoves.com



"We believe this project has been very useful in terms of opening the Cambodian market for us. We would not have come to Cambodia if it was not for this project. Cambodia has now become a priority market for us." – Kristian Tangen, Differ Group

Our Participation in 'The Stove Auction'

- We joined the project from the start, because we wanted to sell more stoves, and the RBF looked attractive and **reduced our risk of venturing into a new market**.
- It has been **a good experience** so far. We sold quite a few stoves, and SNV and CQC [the Stove Auctioneer] have been very helpful. By March 2018, we sold **4,740 stove units** through the auction and this provided us **EUR 172,760 in revenue**.
- There were **large fluctuations in demand** [from the local last-mile distributors] though. As we have gradually focused our business more on production and wholesale and less on own distribution, we had to **take these fluctuations into account for our cash flow planning**.
- As part of our business strategy, we are getting involved in several new markets. **We believe this project has been very useful in terms of opening the Cambodian market for us**. We would not have come to Cambodia if it was not for this project.
- **Cambodia has now become a priority market for us**, and we focus a lot of our energy and attention to this market. We also appreciate the **new business relationships** we were able to make in Cambodia.

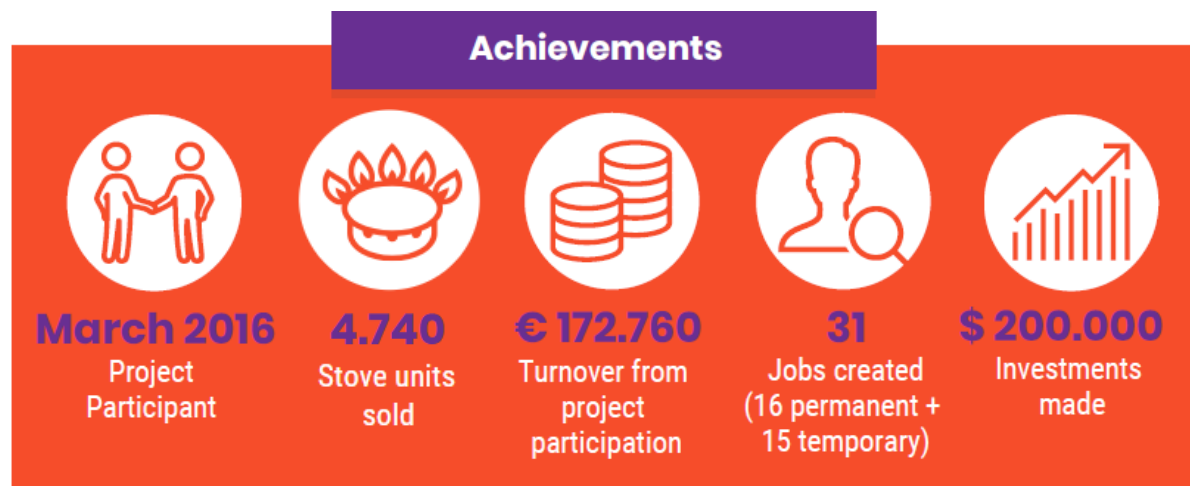


Jobs & Investments

- The project has meant that we have **maintained eight employees** (warehouse, accounting, sales and management) that we otherwise would probably have had to terminate. The new demand for our stoves from Cambodia has indirectly **created 16 permanent positions** and **15 temporary positions** at our manufacturing facility that produces our stoves in Indonesia.
- We invested approximately USD 500,000 in our company in total, of which **USD 200,000 have been invested** since the project started. The money has been spent mainly on staff and warehousing.

Our Future in Cambodia

- We **will continue to operate in the Cambodian stove market** and **expect that this market will be central to us also in the future.**
- We will **expand the operations in Cambodia** to also **include production and assembly of stoves, sales, and production and distribution of fuel** (biomass pellets).
- Expansion of our operations in Cambodia is planned for **late 2018/beginning of 2019.**





Established in 2014, Mimi Moto B.V., headquartered in the Netherlands, engineered the first internationally recognised Tier 4 biomass cookstove. Mimi Moto stoves are sold in more than 20 countries, following the company's mission to make clean cooking available to everyone.

www.mimimoto.nl





"We joined the Cambodian Stove Auction in September 2016 as we saw potential for our stove in this market. The project is very useful to develop the Cambodian market and RBF is a good instrument."

– Marius de Waard, Mimi Moto

Our Participation in 'The Stove Auction'

- We joined the project in September 2016 because we **saw potential in the Cambodian market**. Our experience is that the auction is well run by CCQ [the Stove Auctioneer] but **sales volumes are not yet at a level** where we would like them to be.
- While we are selling the Mimi Moto in more than 20 countries, Cambodia is a very new market for us. By March 2018, we sold **1,241 units** in Cambodia and made a **turnover of EUR 101,236**.
- The project has been very **useful for us to develop our presence** in the Cambodian market, and RBF is a good instrument.
- Two key impacts from the project on our company is that it **helped us to learn more about the Cambodian market**, and that we **gained new business relations** in Cambodia.



Jobs & Investments

- We are a lean company. We have **three full time staff** operating the company from Amsterdam. We have a contractor who produces our products in Shenzhen, China. There **is indirectly impact from the project on jobs and investments**, however so far the revenue generated in Cambodia did not justify the creation of new jobs within our company.

Our Future in Cambodia

- We will **continue operating** in Cambodia with a combination of cookstoves and fuel sales.





Established in 2009, Solar Serve is a social enterprise located in Da Nang, Vietnam, that specialises in the manufacturing, distribution and installation of products that utilise naturally provided energy. Solar Serve focusses on two core products - parabolic solar cookers and clean cookstoves.

www.vietnamsolarserve.org



"This is a very good project for me to test the market in Cambodia. I actually learned a lot through this project - how to deal with export, customs, transport. It help us make us stronger, make us more mature. We are now an internationally expanded company - now we want to go to Myanmar - now we know how to expand more." – Bich Tan Nguyen, Solar Serve

Our Participation in 'The Stove Auction'

- As a local cookstove manufacturer in Vietnam, Solar Serve **entered the Cambodian market** through this regional project.
- The **project provided assistance to test** Solar Serve's stove in laboratories in Laos and Cambodia, which ultimately led to the company's interest in joining the project in Cambodia.
- In November 2016, the company made a first shipment of 200 stoves to Cambodia. The enterprise began **learning about international expansion** by **dealing with customs and shipping**.
- The original stove model **did not perform** as hoped in the Cambodian market. The project studied customers' perceptions on the stove and **provided recommendations to Solar Serve on how to improve** their product.
- As a results of improving the product, Solar Serve **received increasingly bigger orders** from Cambodia, where more than **1,000** of its stoves have now been sold, and the company's **turnover increased by 35%**.
- Solar Serve sees this project as their **main opportunity** to expand their market into Cambodia and sees **good potential** in Cambodia. The company appreciates that it was able to **build relationships with local distributors**.
- According to Solar Serve, **the project has transformed the company** by **refining its product**, allowing them to **expand into a new market**, **employ additional staff**, **invest in additional machinery**, and **understand more about** the logistics behind **cross-border trade**.
- The CEO affirms that **Solar Serve has become more mature in doing business** and expresses his gratitude towards the project teams for running this **valuable project**.





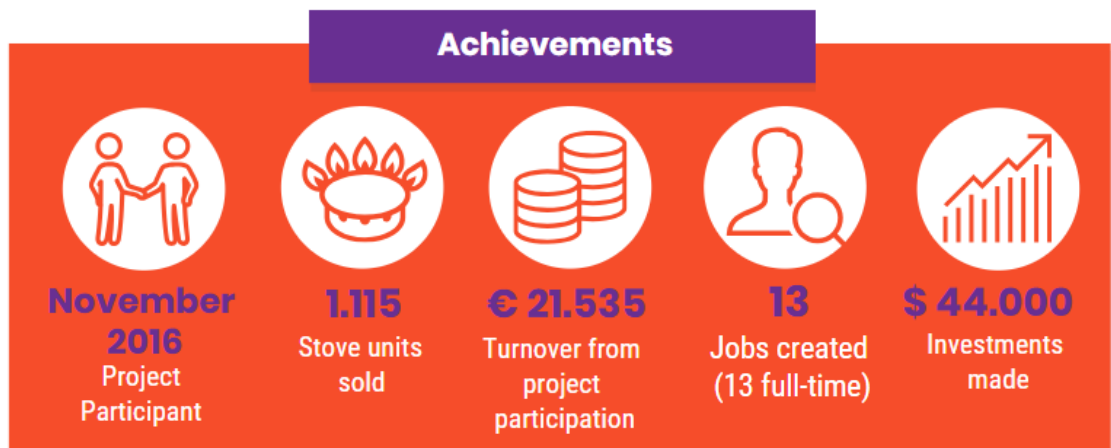
Jobs & Investments

- The project has led the company to **invest in new machinery** to make more components of its stove in-house. Prior to this, Solar Serve had **created jobs in other supplier companies** to which it outsourced the production of some of its stove components.
- Currently, Solar Serve has **32 employees (25 full-time and 7 part-time)**, most of which work in **production**. Before joining the project, the company had 19 employees (12 FTE, 7 PT). It had to add more workers **to service the bigger orders** from Cambodia.
- Solar Serve's **investments of USD \$44,000** have gone into **buying new machinery** which enabled the company to make improvements to the stove that the project required. Additionally, Solar Serve made **investments in the training of new workers**.

- Taking the **risk to finance all costs upfront** before seeing payment from stove sales in Cambodia, the company used **a bank loan** to purchase raw materials to fulfil the orders from Cambodia. The company acknowledges that it was **not easy to obtain the capital** it needed to expand to Cambodia.

Our Future in Cambodia

- Solar Serve **has plans for Cambodia** – the company envisions in future to sell components of its stove to then **be assembled locally in Cambodia**. It is planning to find a partner in Cambodia for local assembly.
- In addition, Solar Serve **contemplates expanding into Myanmar** with a similar concept of delivering stove components for local assembly.



Local Distributors



LES is a Cambodian last-mile distribution enterprise established by founder and CEO, Mr. Sum Sokun, in 2012. LES's core business is to help rural communities to access sustainable energy. LES offers a range of products targeting BoP households across the country. Products include Solar Home Systems and off-grid appliances.

www.lightingengineeringsolution.com





"Business success depends upon successful marketing [...] we found that the ABCs were complementary with our solar products in this market. Ever since joining the Stove Auction project, ABCs have become our second most important product."

– Sum Sokun, CEO, Lighting Engineering Solution

Our Participation in 'The Stove Auction'

- We were the **first local last-mile distributor** to join the RBF project. ABCs have since become our **second most important product** after Solar Home Systems.
- We were already able to gain some initial experiences with ABCs during the pilot project [prior to the RBF project], and **found this market to be a big opportunity for us**, and found the ABCs to be a product that complements our solar products, **and fits well into our existing distribution network and our existing partnerships** with local Microfinance Institutions (MFIs).
- We sell our solar products and the ABCs through the same channel: **community-based sales agents managed by our provincial company staff**. We also use the same financing mechanism for our customers – they include in-house financing, and our collaborations with MFIs and Leasing companies.
- The RBF incentives earned from the **project allowed us to expand our geographical coverage areas from 4 to more than 10 provinces**. The number of our **sales agents increased from 130 to 300** in early 2018. The number of permanent staff also increased from **18 to 25**.
- By March 2018, we were able to claim RBF incentives for **1,896 stoves**. We were able to generate **revenue of around USD 100,000** from sales of the stoves.
- The project **enabled us to access new cookstoves products that were not available in Cambodia before**. The project brought us **a new competitive business**.
- Our company grows, but we have also **faced many external challenges**. As a last-mile distributor, we had to change our strategies and approaches from time to time to adapt to competition. Our biggest achievement in this context is that **enhanced our capacity to adapt to competition and adverse market conditions**.
- We **focussed our efforts on providing MFI financing in 2016 until early 2017**. Our local MFI partners provided loans to our customers, which allowed our sales figures to increase positively by the end of 2016 and early 2017.
- When the National Bank of Cambodia imposed an interest rate cap, **small product loans were no longer profitable** for MFIs and **our ability to work through these networks** and extend credit to households **was severely affected**.
- Our cash-flow was not strong enough to cope with the shock. It took us a while to bounce back, by **improving our financial management** and **distribution efficiency**.

Jobs & Investments

- LES has steadily grown in terms of staff and sales agents. Back **in 2015**, LES was run by **18 permanent staff** and employed **130 sales agents**. **Currently**, the company employs **25 full-time staff** and **300 commission-based sales agents**.
- Among the full-time employees, most of them works as provincial sales coordinators (**30% female and 50% youth**) whereas for the commission-based agents, **30% are female and 10% are youth**.
- We **invested around USD 36,600** in the beginning to start the cookstove business. We created a very strong sales team [and developed sales] techniques [for the new products].

Our Future in Cambodia

- We see there is a **good opportunity for us in the cookstoves market**; however, our future strategy after the project ends will **depend on further developments in the sector**.
- We **currently cannot afford to import cookstoves in a container** by purchasing them directly from the international manufacturers. Without the auction and the project, **there should be a master distributor or a local producer** who LES could deal directly with.
- If the **wholesale mechanism becomes available** and the **consumer price is around 100-120% of the stove's landing price**, we can sell the cookstoves at this price as long as there is consumer financing available.





FIC is a newly established private company registered in May 2015.

FIC provides biomass cooking technology solutions, which can be used safely, efficiently and sustainably. The company provides three types of clean biomass cookstoves: ACE-1, Mimi Moto, and Prime to solve some of the most impending challenges on the health of women and children in Cambodia.

www.freshinnovation.biz





"Because of the RBF project, FIC has stoves to offer to the market. We have defined biomass cookstoves as our core product. That's why we have been selling the products at a sustainable price since the beginning. This is our future. We are a market developer for cookstoves". – Leakhena Yun, CEO, Fresh Innovation Cambodia

Our Participation in 'The Stove Auction'

- The project enabled us **to reach important milestones in our business**. We are a last-mile distribution enterprise - our products are ABCs, LPG cookers, and water filters. ABCs were a new product for us, and **they soon became a primary product for our company**.
- We joined the project from the beginning. I bought around **3,115 stoves** from the auction by March 2018 and **sold them at a sustainable, profit-making price right from the start**.
- By March 2018, we claimed RBF for **1,221 stoves** that we sold for a turnover value of **USD \$71,329**.
- I **was able to build my distribution channels** for the cookstoves **because of the incentive offered by the project**, and I was able to buy **small quantities of stoves** from the auction **in line with my cash availability**. Without the project **we would have never been able** to go into the cookstoves business.
- The project had **an impact on me personally** too. I've **developed myself professionally** coming from an NGO background to a businesswomen by starting this ABC business. I learned my skills in NGO administrative roles, and **converted them into leadership skills**.
- I have also become **confident in communication with investors, bigger organisations, and MFIs**. Though I feel there are many things I need to improve, I'm glad to see FIC's success.
- But it has been a **challenging journey** too. We had to go through **several iterations of our business model**: in 2016, we had provincial offices with 2-3 staff on the ground. We were highly depended on our MFI partners to provide loans to our stove customers. It was lucrative, but later **it hurt our cash-flow a lot** when the MFIs reformed their loan products after a national interest rate cap was introduced. Many stoves had already been delivered to customers who were now not able to get a loan anymore. **We took the financial burden** and let households slowly pay back in instalments directly to our company. **It took us a long time to recuperate the money**. We then also developed an entirely **new consumer financing model** – leasing – which brought our cash-flow back on track and helped share the risk with our partners. By early 2018, **most of our sales are done with this leasing model**.

Jobs & Investments

- FIC created **10 full-time staff jobs** and **currently employs 200 sales agents** across the communities. In practical terms, my style of managing my staff is to train them well, and to very closely follow-up their performance while they are working in the field. We try to recruit people with right attitude, train them with the required skills, and make sure they put full effort to achieve their sales targets.
- We are **building an agent database** which is an online/mobile application to manage information of our sales agents and **store different support materials** that compliment their sales and marketing activities.
- FIC began its operations with a **small initial capital investment of USD \$5,000** to buy cookstoves inventory. Additional **significant investments were made in sales agents mobilisation and training**, but the company is unable to quantify these expenses. They share their office and warehouse with another company to lower their monthly expenses.

Our Future in Cambodia

- For the future, we see a **big market opportunity for ABCs in Cambodia**. Coosktoves have become the **primary business for our company**. However, we are **not fully prepared yet for stove importation and full pricing**. Once the project ends, **we will still need an intervention** such as working with local wholesalers or local producers. We **will still need development assistance** for further market development.





EcoSun is a social enterprise that works to provide energy solutions for people and communities in Cambodia. EcoSun was established in 2008 by a group of experienced individuals in energy; including renewable energy, energy efficiency, electrical engineering, as well as rural development, agricultural engineering, and climate change. EcoSun specialises in three main sectors: solar, biomass cookstoves, and micro-hydro.

www.ecosun.webs.com





"EcoSun's vision states the importance of reliable renewable energy for sustainable development in Cambodia. This drove us to join the Stove Auction." – Sun Mao, CEO, EcoSun Cambodia

Our Participation in 'The Stove Auction'

- EcoSun has participated in the project from the start, since March 2016. We **wanted to continue our presence in the home energy sector** by phasing out our work with household biogas digesters, and replace this product with ABCs.
- We joined the project and now sell cookstoves because of our company's vision and mission, while the **RBF incentives offered were only a secondary reason**.
- We initially tried to distribute cookstoves through our existing channels that we use for our solar products, but later realized that we needed a separate sales agents system. We are working with **commission-based sales agents** for the cookstoves.
- Without the project, **EcoSun would have never been able to enter the cookstove business**.
- In 2017, cookstoves **started to become an important product** for our company, making about **10% of our total revenue plus good incentive** from the project.
- By end of 2017, EcoSun **was able to sell 960 stoves**, primarily Prime and Mimi Moto models, at a **revenue of USD \$47,124**. In peak months, our team can sell **120 stoves/month**.
- We **mobilised more than 100 sales agents** at the commune level, **especially in the more northern provinces** further away from Phnom Penh.
- For 2018, EcoSun **anticipates to open provincial offices** and provide payment plans to customer **if business continues to go as well** as it did in 2017.
- We also **faced some challenges with the ABCs** when we realised that some stoves models **require users to change their cooking behaviour**. Unfortunately, EcoSun cannot afford to educate users to change their behaviour.

Jobs & Investments

- Our engagement in the cookstove sector **allowed EcoSun to keep our employees** after phasing out our biogas work. Without this new ABC sector, most of these jobs would have been lost.
- Currently our company is run by **11 full-time staff (one female) and two part-time staff**. This includes 02 staff for sales/marketing, 03 for stock and transport, 03 technicians and after-sale service providers, and 03 admin/finance staff.
- We also **employ many commission-based sales agents**. We have approximately 130 sales agents, **100 of which are for the cookstoves business**. Among them, **45% are female** and **20% are youth**.
- We **invested around USD \$20,000** in stove inventory which allowed us to build up a stock of about 300 stove units. We found ways to save costs on marketing by **producing our own materials** which cost us only approximately **USD \$1,000**.
- We **bought a mini-van for USD \$6,600** to transport the stoves, and to have a separate vehicle from our solar operations. Currently **our new warehouse is under construction** on the outskirts of Phnom Penh, which will house both our stove and solar product inventory.

Our Future in Cambodia

- Cookstoves is a **big market** [in Cambodia]. We will continue the cookstove business if the project presents a well thought-out exit strategy. However, **if we need to purchase ABCs at full commercial wholesale prices, and if there are many products that require end-users to change their cooking behaviour**, then EcoSun might not be able to stay in this business. It would be good if the project **could help with establishing local production of stoves**, and **introduce less complex stoves** which do not require behaviour change for end-users.





ACE Energy Solutions (Cambodia) Co. Ltd. (AES) is a recently established private company led by Daniel Walker.

The enterprise is a subsidiary to international stove manufacturer African Clean Energy (ACE) and acts as its local distribution arm and after-sales service representative in Cambodia.

www.facebook.com/ace1cambodia/



Ultra-Clean
Biomass
Cookstove

Serial No.
18732
Colour



"Our ACE-1 stove is an expensive stove. With the Stove Auction project, we can help users access to our excellent product because they can pay us in monthly instalments. Without the RBF, we could not have had users pay us little by little because we did not have an MFI partner."

– Daniel Walker, ACE Energy Solutions Cambodia

Our Participation in 'The Stove Auction'

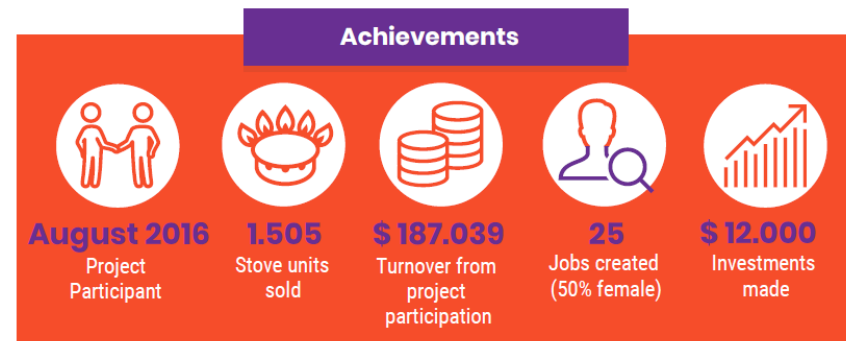
- **Early 2016**, I came to Cambodia as an ACE Sales Representative. I wanted to **see first-hand how our product performed** in Cambodian kitchens, and **make sure that our brand is well represented** in Cambodia.
- This included making sure that our stove users in Cambodia **have access to after-sales services** and **spare parts**. I drove around myself to visit our customers across all provinces, and also fixed stoves myself where needed.
- That was during a time when the ACE stove sold a lot at the auction. In later auctions, demand dropped a bit, and **we decided to incorporate our own business** in Cambodia in **July 2016** so that we could **further drive our sales** and **expand our presence** here in Cambodia.
- We started buying stoves from the auction to build up our inventory, and **in January 2017 our full operations started to kick-off**. We started **recruiting staff and build systems** for our company. We **grew from 2 staff members to more than 20** in less than 2 years.
- A **first major milestone** was when **we started selling 100 stoves per month on a consistent basis**. This meant **regular cash flow** for our small company, which **really allowed us to start growing**.
- Shortly after we had a **second sales team fully established**. In the last few months, we started to **consistently sell 200 units per month**.
- Without the RBF project, we **would have never formed AES**. The project was the only platform allowing us to set up operations in Cambodia.
- Since early 2018, we have become a promising business with **20+ local staff**, and more than **1,500 households have improved their energy situation** with our product.
- With the project assistance **we've learnt a lot** in a short time. Our biggest achievement is **our understanding of the Cambodian market**. We developed an **efficient marketing and direct sales approach** which is seeing very good success rates.
- We are **aiming to increase our sales force and sales volume** to eventually **open a stove factory in Cambodia**. Therefore, we plan to expand our sales team to **four groups** to achieve sales of **400 units per month**.

Jobs & Investments

- AES currently employs 1 country director, 2 foreign interns, **22 local staff (50% female and 100% youth)**, most of whom have no sales background but were trained to provide cookstove product information to rural households. We grew **from 2 staff members to more than 20** in less than 2 years.
- The project is providing us with the **opportunity to grow the team** over the coming months as we **expand to more provinces**. Our current small office will be relocated to a larger building to accommodate the increasing number of employees.
- Our ambition is to **grow our sales force and sales volume** so that one day **we can open a factory** in Cambodia. If sales reach 700-800 units per month, a small production facility could be operated in Cambodia.
- AES required a small investment to commence its operations in Cambodia. With **only USD \$12,000 invested**, AES acquired a **vehicle** and **office equipment**. The company also has access to the Salesforce CRM system and a cloud-based customer data and accounting system.
- AES and its parent company ACE also **invested in R&D to modernise the stove's electronics** and **incorporate PAYGO hardware**. Sida (Swedish Development Cooperation) contributes USD \$120,000 for this, while **AES matched these funds with an additional USD \$200,000**. This innovation will provide new payment methods for ABCs for the first time.

Our Future in Cambodia

- AES is growing fast. We expect to **sell 400 units per month by the end of the RBF project**, but this is still shy of the 700 units per month **required to operate sustainably**.
- Without this project, the ACE-1 would be priced at USD \$140 retail. Duties for importation and VAT are **too high to continue importing** the stove directly from Lesotho. We will therefore **start to set up local production in Cambodia**.
- We will also look to **expand to Laos and Myanmar** once local production in Cambodia is set up.



Sector Enablers



CQuestCapital

C-Quest Capital (Cambodia) Co. Ltd., a subsidiary of CQC LLC headquartered in Washington D.C., USA, was established in September 2016. CQC joined EnDev/SNV as a third party to run the day-to-day operation of 'The Stove Auction' trading platform. CQC and EnDev/SNV share the same vision of accelerating the market for ABCs. CQC works to increase the number of actors in the market and improve the access to cleaner and more efficient energy services for end-users.

www.cquestcapital.com



"I've witnessed 'The Stove Auction' to be a robust market mechanism bridging the big gap between the international supply and the local demand for ABCs. Most importantly, the project has a significant impact with regards to technology transfer and environmental, social and local private sector development. In short, the auction makes the impossible possible."

– Reaksme Long, Director, C-Quest Capital Cambodia

Our Participation in 'The Stove Auction'

- In October 2016, **EnDev/SNV handed over the day-to-day operations** of 'The Stove Auction' to CQC-C. Ever since, we have been able to implement a **pay-for-performance model** that allows our company to generate income from a **fee-based structure** in which market actors pay for their participation in the auction, in addition to receiving a **commission from EnDev/SNV for RBF funds disbursed**.
- We also explored **further revenue streams for our company to increase our sustainability** by **adding business activities** that would **grow the distribution of ABCs**, and by employing **our own risk capital** for these investments.
- Key investments were, for instance, **providing lines of credit to the local stove distributors to help them grow their operations faster, piloting new consumer financing approaches with the local distributors** to increase affordability and ultimately **the uptake of stoves**, and the launch of a **line of sustainable biomass fuel** called 'Fastfire' **to help the local distributors sell a product that is complementary** to the stoves and **aids end-users' adoption** of ABCs.
- The most valuable impact for us so far has been the ability to manage this **innovative state-of-the-art market trading platform** and **gain valuable experience in market development for ABCs**, which is **lacking in this sector**.
- This has allowed us to **expand our business** to South East Asia and to **test novel ideas** that **can be replicated in other locations**.
- We have found that the auction mechanism **has been pivotal to engage a range of actors** in the new ABC sector in Cambodia and **help players see opportunities** in a nascent market.
- Furthermore, this project has allowed us to **build close business relationships** with a number of sellers and buyers that have the **potential to sustain themselves** after the project ends, for **our further collaboration** in the future.
- CQC-C's biggest challenge has been to **generate sufficient revenue to continue our role** in the cookstove sector in Cambodia. Currently, we are **operating at a financial loss** and we are **constantly looking for different alternatives** to **improve revenue streams**. The demand for stoves from distributors is volatile, as they are financially and administratively weak and, in addition, pose a risk to creditors.

Jobs & Investments

- CQC-Cambodia has created **new jobs for 8 employees, 2 contractors** (security guard and cook), and **8 part-time sale agents** (for Fastfire).
- We have also made a big investments to support 'The Stove Auction', including **the provision of working capital lines of credit** to distributors to buy stoves from the auction, **piloting consumer financing to end-consumers** with partner distributors to increase affordability and uptake of stoves; the launch of Fastfire sustainable biomass fuels. Our total investment was around **USD 235,000**.

Our Future in Cambodia

- CQC Cambodia has been active in this sector in Cambodia for over one year through managing the auction and launching the Fastfire business. Our experience indicates a **clear, but price-sensitive, demand for fuel and stoves**, and **substantial potential for inexpensive stoves with reliable pellets supply**.
- We aim to **engage in Cambodia for the long-term** to achieve 10% market penetration of stoves and fuels in the Phnom Penh market, **expand to other urban centres** in Cambodia, and **to add other products** such as solar lighting kits, **providing a complete energy package to households** in the face of unreliable and expensive electricity supply.



Conclusions

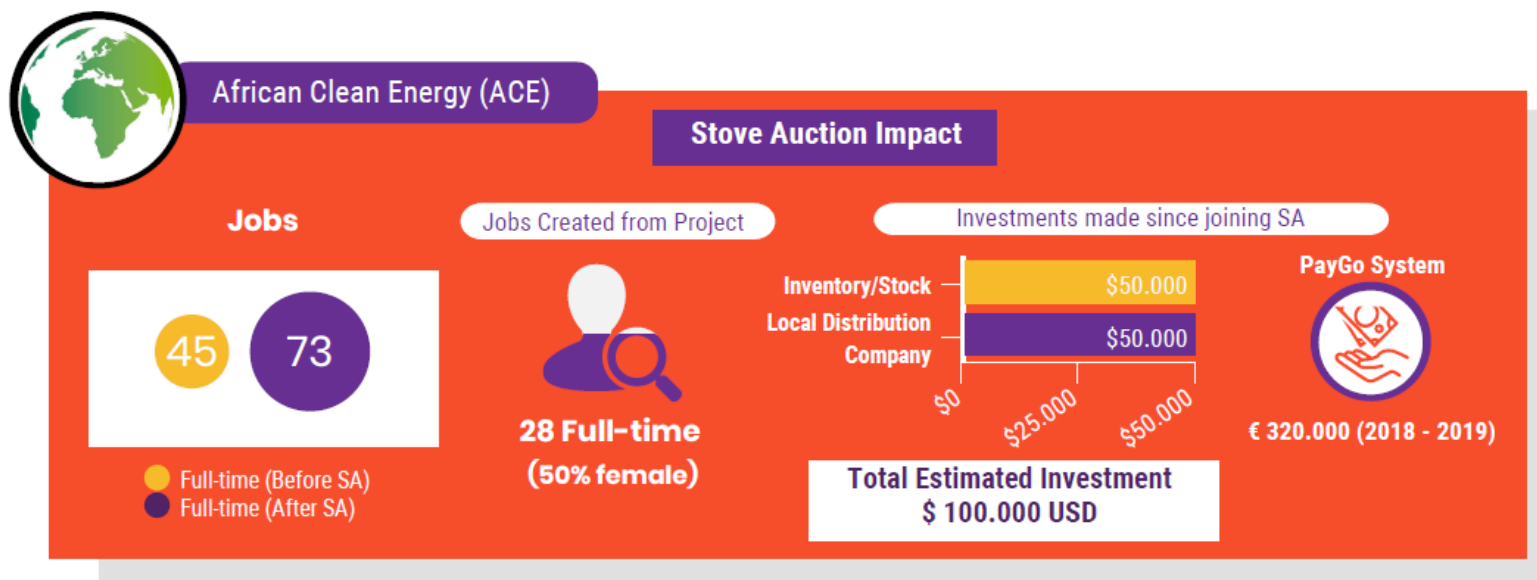
Conclusions

- International ABC manufacturers** express that the RBF project **assisted them** and **lowered their risk** in **venturing into a new unknown market** which they may not have previously considered, allowing them to **form new business relationships** with local distributors, **expand their international presence**, **consider future regional expansion**, **refine their products**, introduce **new product innovations**, learn **new skills**, **learn about the Cambodian stove market** and **consumer behavior**, establish **sustainable wholesale and retail prices** for their products, **increase their production outputs** and **sales revenues**, **grow their workforce**, become more **'investable'** companies, and has **made Cambodia a priority market** for them for further engagement that will also see **future investments in local ABC production/assembly**.
- Local last-mile distributors** express that the RBF project **enabled them** to **access a new product** that was not previously available to them, build **new business relationships**, **test the market for ABCs**, **learn about target groups** for ABCs, **include a new product in their portfolio** (which for many **has now become a key product**), **develop sales approaches** and **new competitive business models**, establish **sustainable and profit-making retail prices** for ABCs, **grow their revenues**, **improve their financial management** and **distribution efficiency**, develop **new consumer financing models**, **improve their leadership** and **confidence**, **grow their workforce** and **expand to new geographical areas**. The distributors see a **large business opportunity in the ABC market**, anticipate **further growth of their workforce**, and consider **future partnerships for local ABC wholesale and production/assembly**.



Annexes

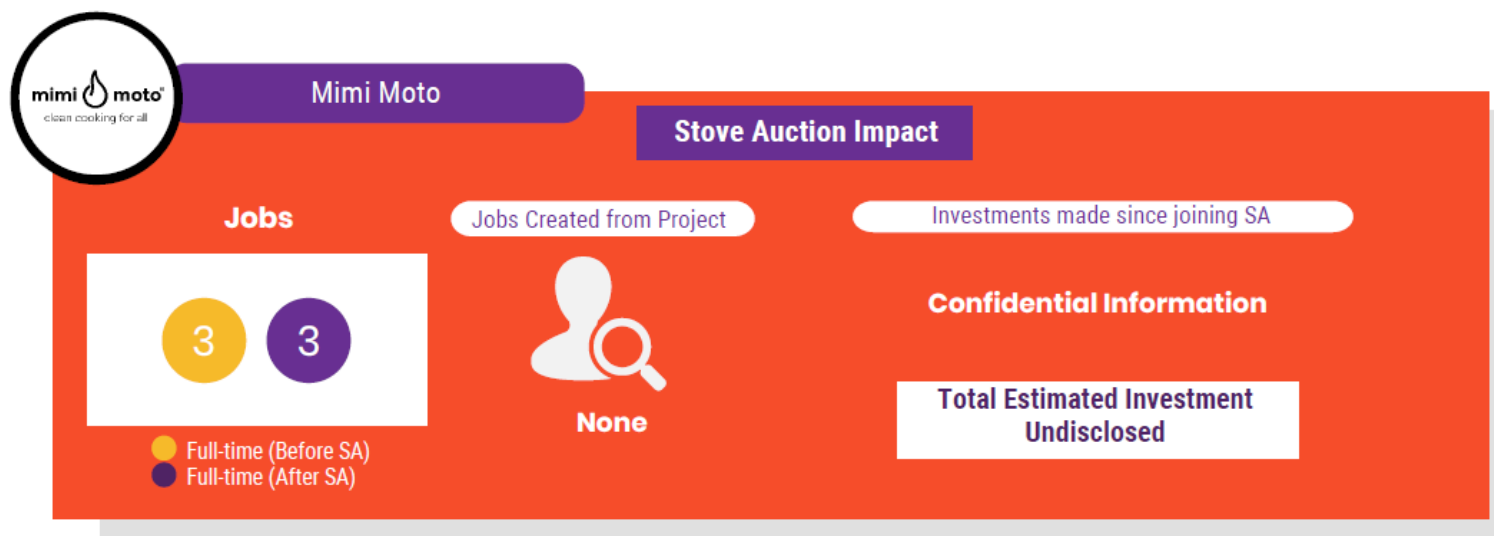
Annex: Data Sheets – International Manufacturers



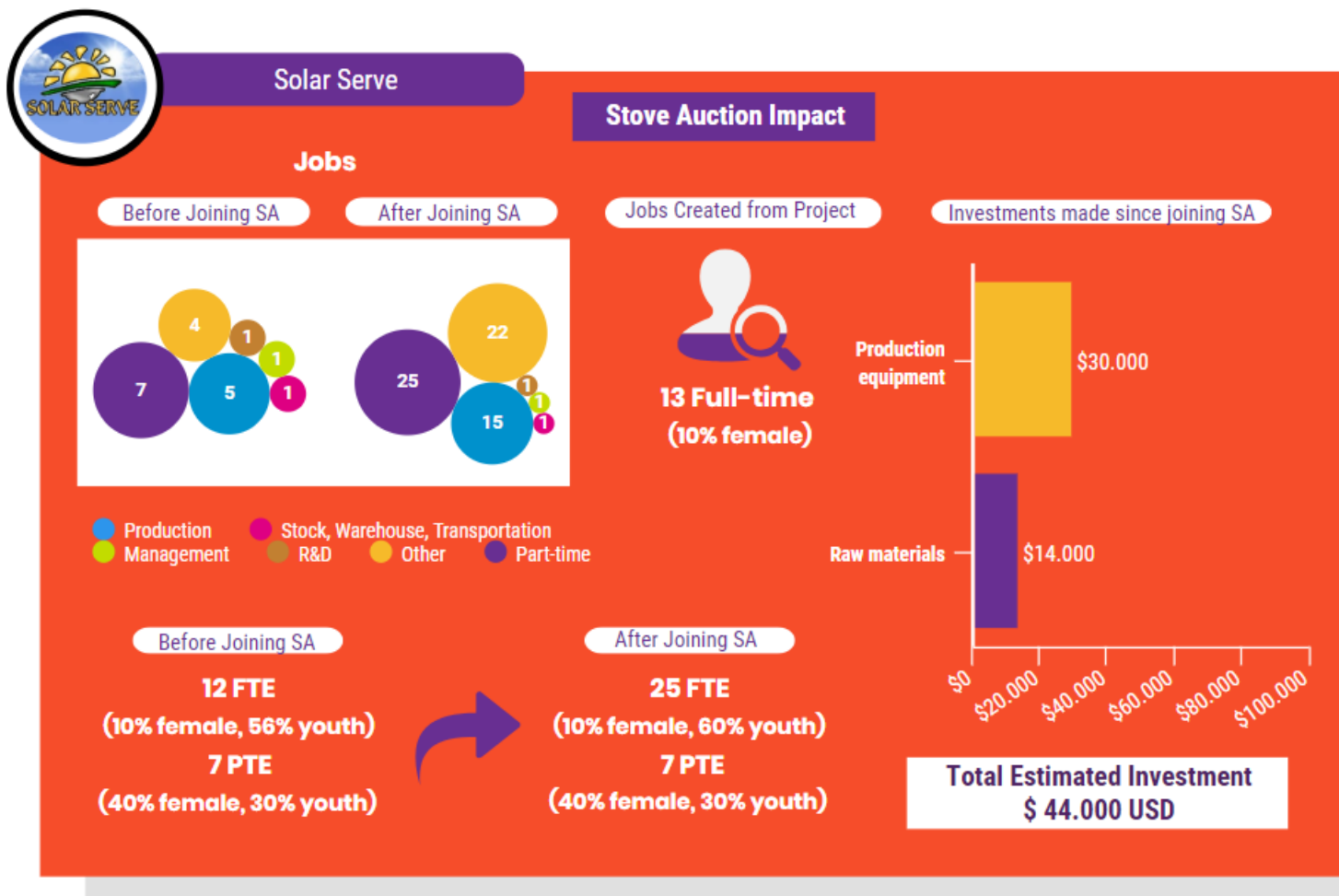
Annex: Data Sheets – International Manufacturers



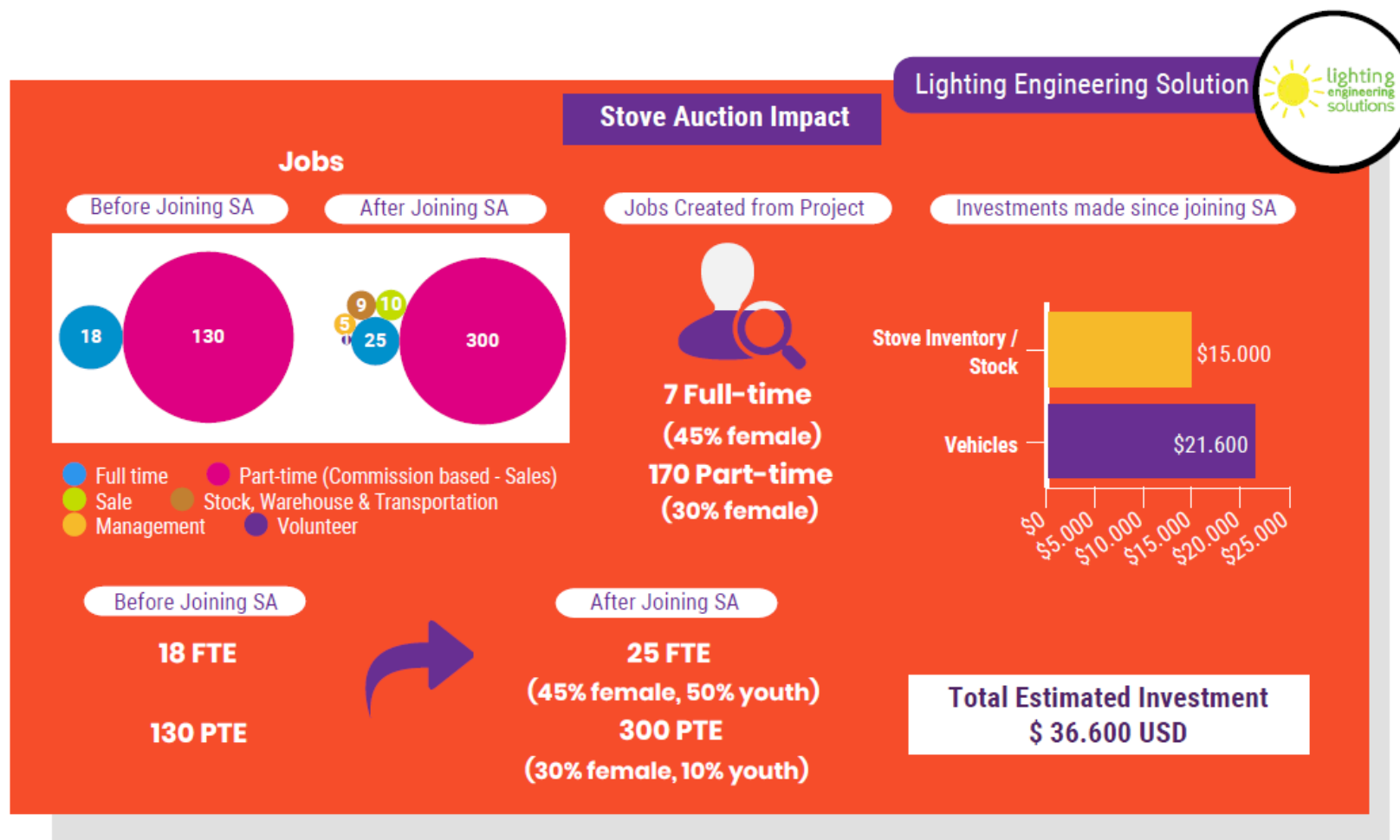
Annex: Data Sheets – International Manufacturers



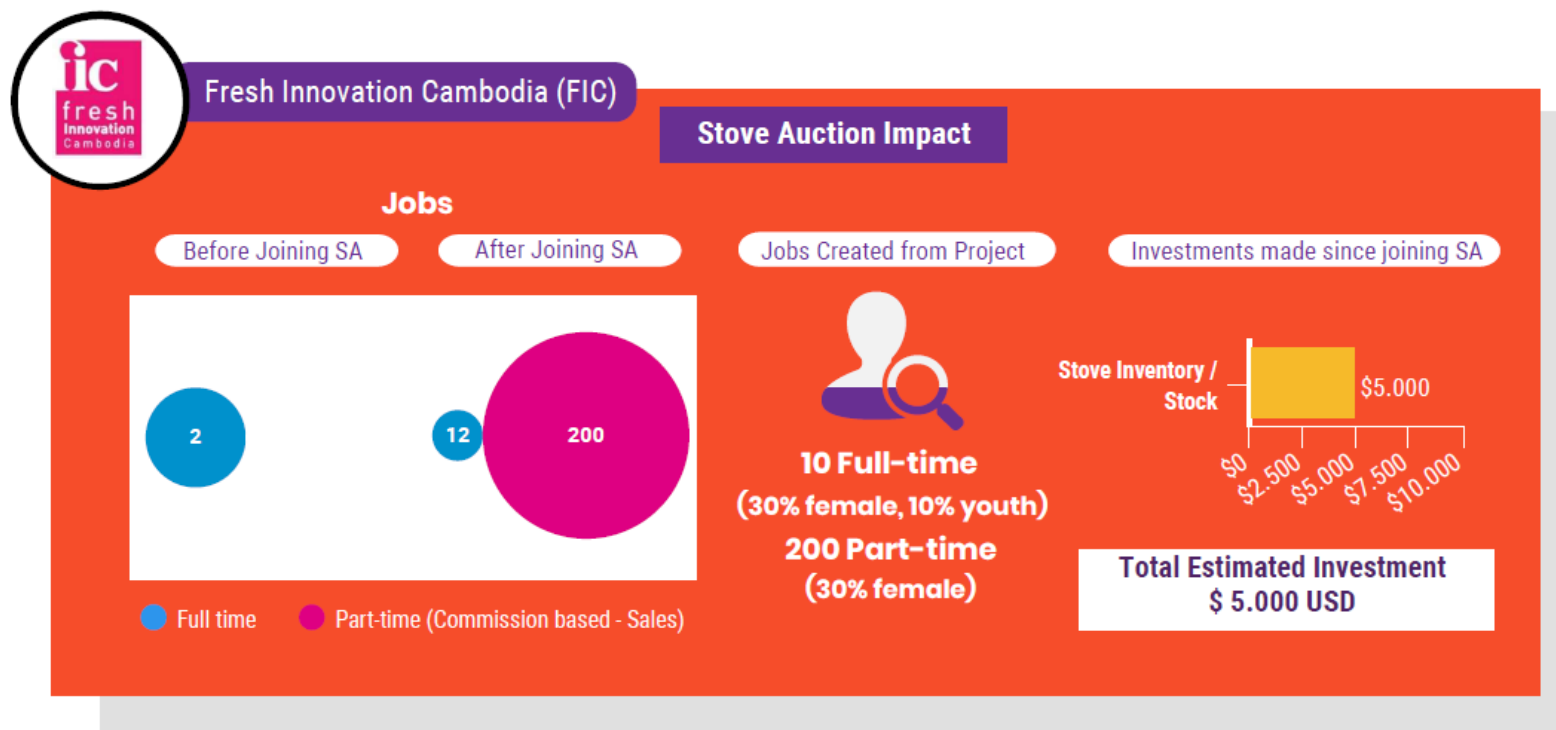
Annex: Data Sheets – International Manufacturers



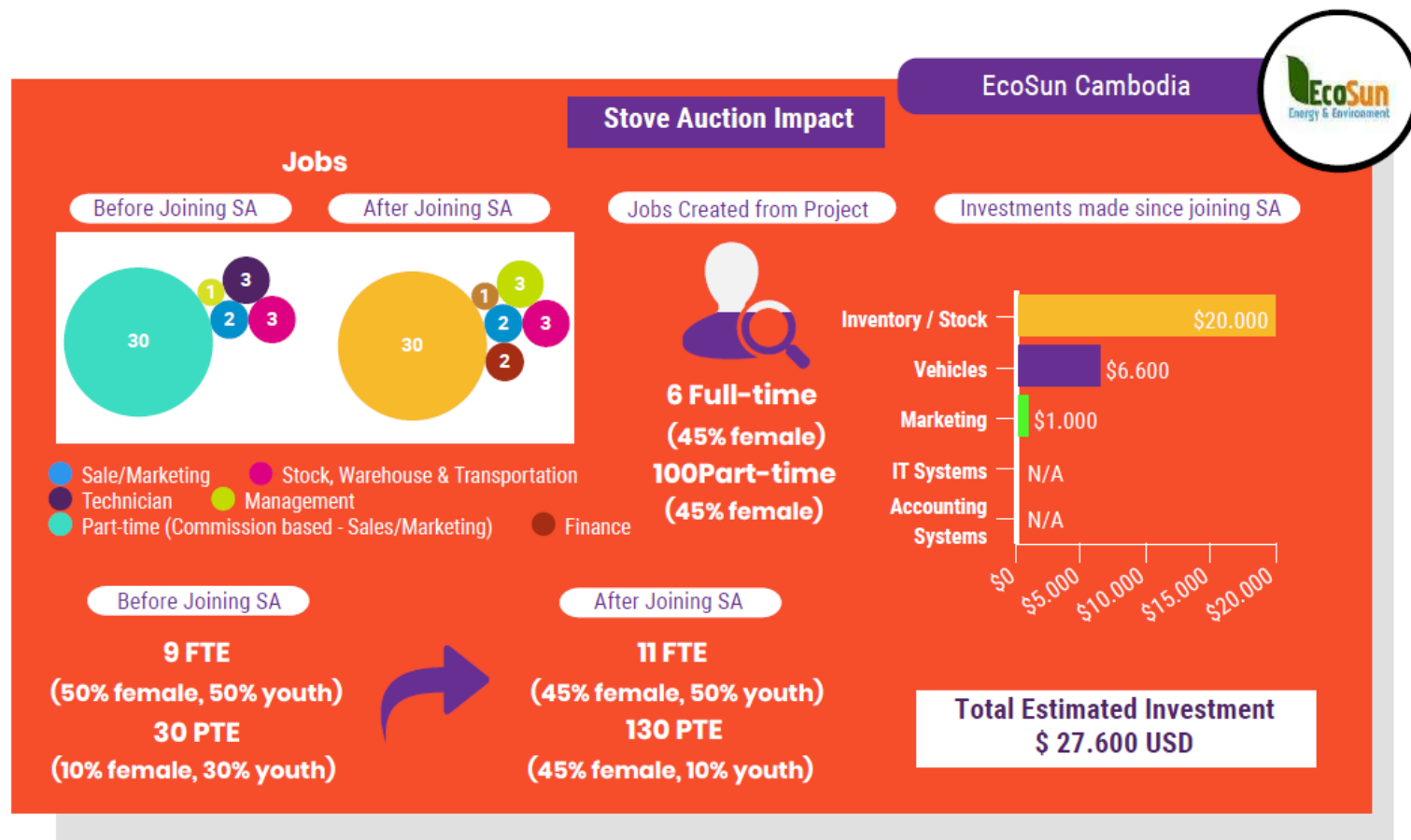
Annex: Data Sheets – Local Distributors



Annex: Data Sheets – Local Distributors



Annex: Data Sheets – Local Distributors



Annex: Data Sheets – Local Distributors



AES Cambodia

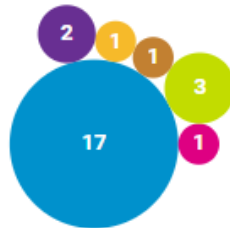
Stove Auction Impact

Jobs

Before Joining SA

After Joining SA

0
Not yet formed



● Sale
● Marketing
● Call Centre / Hotline
● Provincial Office / Staff
● Management
● Intern

Before Joining SA

0
Not yet formed



After Joining SA

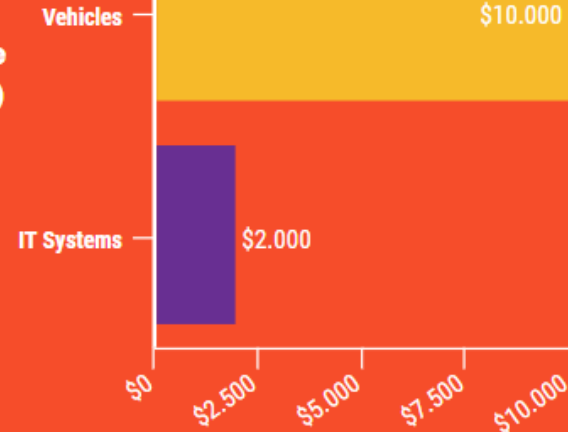
25 FTE
(50% female, 100% youth)

Jobs Created from Project



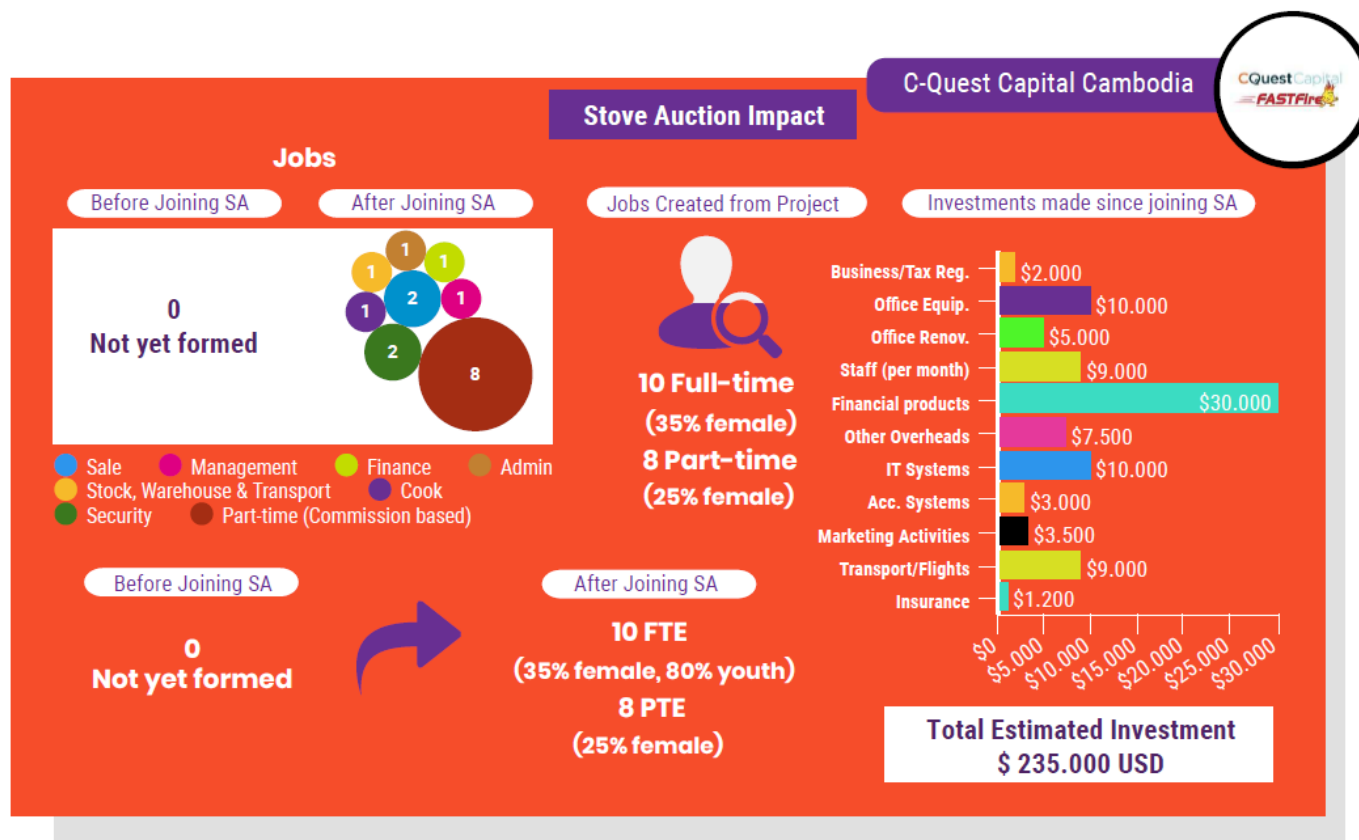
25 Full-time
(50% female)

Investments made since joining SA












**Total Estimated Investment
\$ 12,000 USD**

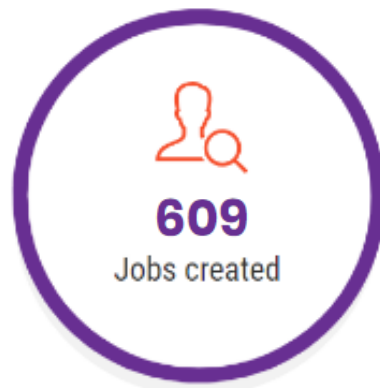
Annex: Data Sheets – Sector Enablers



Annex: Data Sheets – List of Respondents

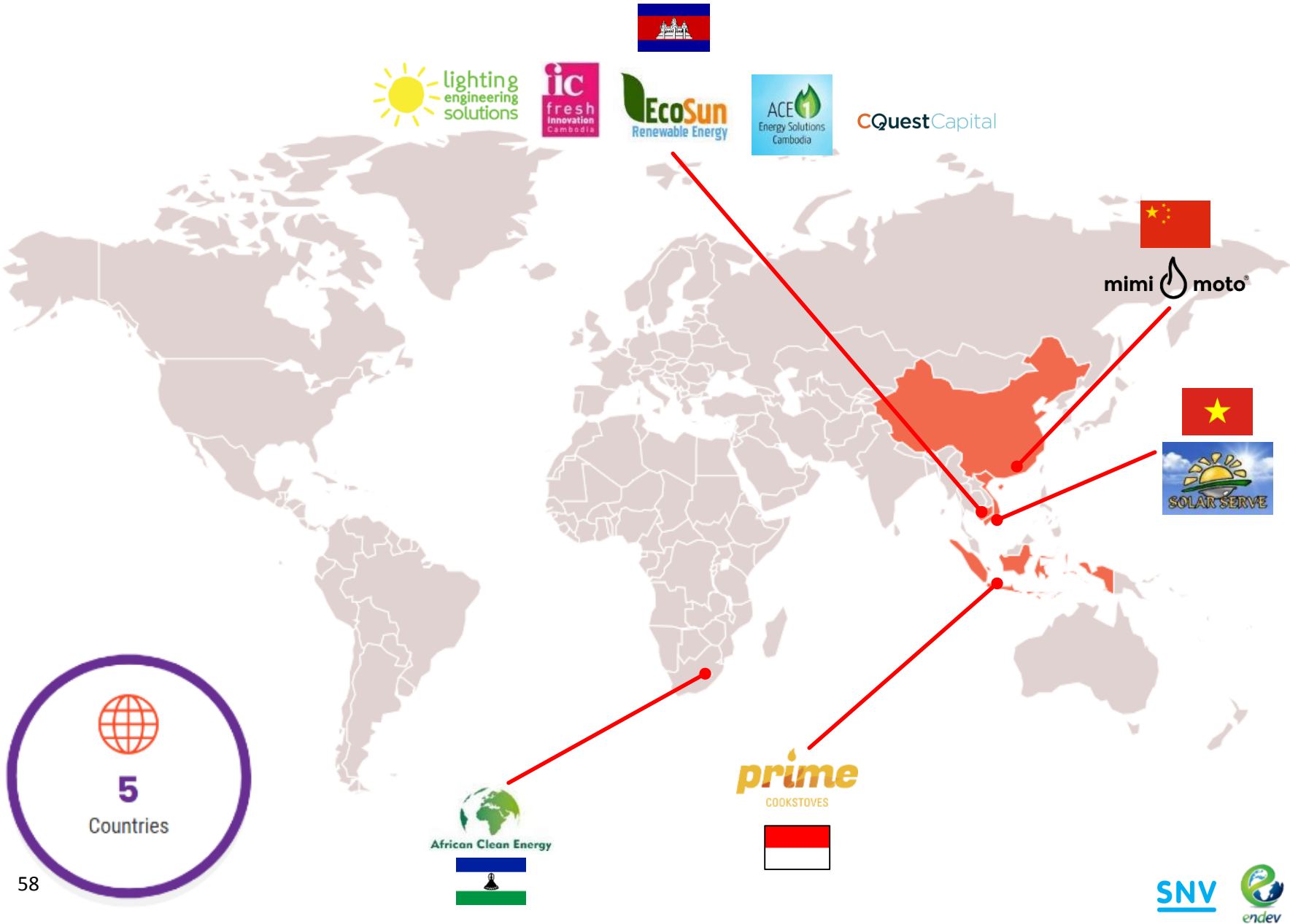
Company	Stakeholder Role	Representative	Interview Date
 African Clean Energy	International Manufacturer	Ruben Walker	22 - 03 - 2018
 Differ Group/Prime	International Manufacturer	Kristian Camilla Fulland	09 - 04 - 2018
 Mimi Moto	International Manufacturer	Marius de Waard	31 - 03 - 2018
 Solar Serve	International Manufacturer	Bich Nguyen	27 - 03 - 2018
 Lighting Engineering Solutions	Local Distributor	Sum Sokun	09 - 03 - 2018
 Fresh Innovation Cambodia	Local Distributor	Leakhena Yun	14 - 03 - 2018
 EcoSun Cambodia	Local Distributor	Sun Mao	22 - 02 - 2018
 AES Cambodia	Local Distributor	Daniel Walker	26 - 02 - 2018
 C-Quest Capital Cambodia Fastfire	Sector Enabler	Jason Steele Reaksme Long	06 - 03 - 2018

Annex: Calculation 'Jobs'



	International Manufacturers					Local Distributors		Sector Enablers	
	ACE	Prime	Mimi Moto	Solar Serve	LES	FIC	EcoSun	AES	CQC
FT	28	16	0	13	7	10	6	25	10
PT	0	15	0	0	170	200	100	1	8
TOTAL:	28	31	0	13	177	210	106	26	18
GRAND TOTAL:	609								

Annex: 'Job Locations'



Annex: Calculation 'Project Cost per Job'



Project Expenditures	
RBF	EUR 507,561.80
TA	EUR 290,678.97
Total project cost	EUR 798,240.77
Total jobs	609
Project cost per job:	EUR 1,310.74

Annex: Calculation 'Investments'



ACE	USD 100,000
Prime	USD 200,000
Mimi Moto	Confidential
Solar Serve	USD 44,000
LES	USD 36,600
FIC	USD 5,000
EcoSun	USD 27,600
AES	USD 12,000
CQC	USD 235,000
TOTAL:	USD 660,200

Annex: Calculation 'Turnover'



ACE	USD 396,284
Prime	USD 211,303
Mimi Moto	USD 123,821
Solar Serve	USD 25,201
LES	USD 102,306
FIC	USD 71,329
EcoSun	USD 47,124
AES	USD 187,039
CQC	USD 171,000
TOTAL:	USD 1,335,407



Published by:
SNV Netherlands Development Organisation (Cambodia)
#184, Monireth Blvd.
Phnom Penh, Cambodia
62
www.snv.org

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March 2018