



**EMPOWER
GENERATION**

2015 MONITORING AND EVALUATION REPORT

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Ashraf and Clarissa are Global Social Benefit Fellows, sponsored by the Miller Center for Social Entrepreneurship at Santa Clara University. The Miller Center helps social entrepreneurs across the world address the problems of poverty, empower women, and build resilience to climate change. The Global Social Benefit Fellowship provides a comprehensive program of mentored, field-based study and action research within the Miller Center's worldwide network of social entrepreneurs.

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EXECUTIVE SUMMARY

Over thirty percent of households in Nepal lack access to electricity. Most families utilize kerosene, candles, and traditional biomass to light their homes, cook food, and study. With an unemployment rate of forty-six percent, Nepal's economy offers limited opportunities for its citizens. Barriers to economic opportunity for Nepalese women are pronounced. Through the sale of reliable and affordable solar lanterns and energy systems, Empower Generation promotes women's economic empowerment by eradicating energy poverty through autonomous, women-led clean energy businesses.

To document Empower Generation's social impact in Nepal, we conducted 36 semi-structured qualitative interviews with women entrepreneurs (henceforth solar CEOs), sales agents, and customers across eight districts. Interviews were conducted with an interview script and the help of a translator. Interview questions fostered discussion among solar CEOs about their personal history, the socio-economic impact of their entrepreneurial experience, and their future aspirations. We specifically focused on measuring women's empowerment, energy access, and the business performance of enterprises in the Empower Generation distribution network. During eight weeks in the field, we took over two thousand photos and filmed seven women entrepreneurs.

Our findings demonstrate how Empower Generation fosters power and economic agency among women, stimulates independent income generation, and provides effective technical training and support. Solar CEOs report an increase in their sense of power and agency on individual, familial, and community levels.

Empower Generation helps solar CEOs to develop their business acumen through training and support, leading to greater confidence in public speaking and in voicing their opinions in local politics. Income generation through sales also increases women's agency by diminishing women's dependence on their husband or family for economic support.

Since 2012, 244,418 individuals have increased access to clean and safe lighting from products sold by Empower Generation enterprises. The possession of a solar lantern also provides clean, safe, reliable energy to off-grid consumers. Due to the inefficient and overloaded electric grid, even customers that have access to the grid can be without power for up to 18 hours daily (scheduled blackouts henceforth referred to as load-shedding hours) and find utility from using a solar lantern. Empower Generation has created nearly USD \$2.8 million in energy savings for its customers since 2012. Customers also report that their children are able to study an increased 2.5 hours daily, on average, due to possession of a solar lantern.

We provide four recommendations to help Empower Generation better achieve its impact. We recommend that Empower Generation: (1) increase the diversity of its products; (2) maintain a larger inventory—and teach solar CEOs and sales agents to make basic repairs—to circumvent import issues and delays relating to warranty replacement; (3) administer surveys to communities and customers in order to better understand consumer needs and desires; and (4) conduct research and analysis to determine the viability of instituting a pay-as-you-go system in rural communities for use with larger home solar systems.

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BACKGROUND AND CHALLENGES

Energy Access:

Access to modern, reliable, and affordable forms of energy are integral to the economic development of a nation. In the case of Nepal, 30% of the country's households lack access to electricity and about 80% of all households rely on some form of traditional biomass for cooking.¹ Household energy use accounts for 87% of Nepal's final energy consumption.² Despite an abnormally high rate of proportional energy consumption by households, consumption by the Nepali people remains below a basic level of human need. If the present trend continues without a fundamental change in policy or initiative, the energy poverty in Nepal will only improve marginally within the next three decades. Rural areas will remain heavily dependent upon kerosene and biomass, while urban residents will continue to consume an average seven times the amount of energy as their rural counterparts, per capita.³

Despite the rural/urban energy use discrepancy, energy poverty levels were estimated to be 52% nationally in 2006 with little to no improvement projected for 2016.⁴ Furthermore, regularly scheduled load-shedding hours leave those connected to the grid without access to electricity for up to 18 hours daily. To combat energy poverty, an extension of the existing grid network can be the most cost-effective option for some countries. In states with remote rural populations, however, distributed renewable energy products are much more immediately economically feasible.⁵ A case study conducted on the village of Pokhari Chauri in Nepal, which received a micro-hydro plant in 2000 courtesy of the United Nations Development Programme, found that the community reported a wealth of benefits due to the presence of affordable electricity: an increase in the average time students spend studying, familial

savings varying from USD \$7-USD \$12 monthly, and an additional seasonal income of USD \$135-USD \$270 monthly due to the replacement of traditional agro-processing techniques with machinery.⁶

The significant investment in infrastructure required to make hydropower expansion a reality, however, is not economically feasible for Nepal due to its mountainous terrain and scattered settlements. Solar power is a viable and logical alternative. On average, Nepal has 6.8 hours of sunlight daily, with the intensity of solar insolation ranging from 3.9-5.1kWh/m² daily.⁷ This is sufficient to charge solar lanterns and operate small solar home systems, serving as a low-cost solution to alleviate energy poverty in Nepal.

Influence of Gender & Caste on Economic Opportunity:

The unemployment rate in Nepal is 46%⁸, and 24.8% of the population lives on less than USD \$1.25 (PPP) per day.⁹ Economic opportunity is limited in this context, especially for women, who are disadvantaged in a patriarchal society. At the time of writing, Nepal ranks 108/156 in the United Nation's Gender Development Index. Women comprise 90% of the paid and unpaid agricultural labor force.¹⁰ A 2006 study found that nearly 50% of the 223 women observed had reported not earning any personal income within the previous 12 months, compared to just 25% of men.¹¹ Nepali women generally start businesses with 1/3 of the capital available to men, and female entrepreneurs earn 2/3 of male counterparts, on average, despite having a longer workday of 3-4 hours, on average.¹² Social barriers severely limit women's access to credit, and despite the illegality of the practice,

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daughters are rarely given their fair share of property rights.¹³ There is also a noticeable trend of ‘comfort zone movement’, or the tendency to operate amongst known clients, that can be observed from women entrepreneurs.¹⁴ This is due in large part to the lack of training in marketplace participation or tapping into new markets, and male-domination of networking organizations.¹⁵

Women’s inaccessibility to formal education in Nepal also contributes to their lack of employment opportunities. Gender has been shown to be the single strongest determinant of school participation among rural youth in Nepal.¹⁶ Past studies have identified three factors that tend to lower incentive for investment in the education of daughters relative to sons: (1) daughters are expected to leave their parental households through marriage, while sons are expected to live with and financially assist their parents in their old age; (2) nonfarm employment is seen as a more realistic attainment for males than females; and (3) traditional gender-based division of agricultural labor requires more routine work from females than males.¹⁷ Furthermore, when a family has limited economic resources, funds are utilized to enable at least one child to be educated at the expense of other children’s opportunity to access a formal education.¹⁸ In these cases, daughters are rarely the recipients.¹⁹ As a result, boys were at least seven times more likely to enter primary school than girls in 1991.²⁰

Caste constitutes an enduring form of social inequality throughout Nepal, despite national legislation that outlaws caste discrimination.²¹ A foundational study documented that high castes dominate the majority of positions of education and status in Nepal.²² Studies on education in Nepal suggest strong caste effects on school participation. High caste households are considerably more likely to send their children to school²³ and the amounts of schooling households are able to provide for children is significantly related to caste.²⁴ In 1991,

high caste children were four to seven times more likely than low caste children to ever enter primary school.²⁵ The Dalits, or “untouchables” make up the lowest hierarchical caste. Dalits constitute the poorest peoples of Nepal, suffering from discrimination, a lack of access to water, and are often barred from temples.²⁶ Treatment towards Dalits and other lower castes has improved substantially in urban zones, but has made little progress in rural areas.²⁷ In either case, Dalits still face immense obstacles in the pursuit of employment and education due to centuries of stigmatization.

April 2015 Earthquake and Indian Import Blockade:

In April and May 2015, Nepal was devastated by its worst natural disasters in eight decades: 8,857 people died, 21,952 were injured, and 3.5 million were left homeless following a 7.8 magnitude earthquake and a 7.3 magnitude aftershock.²⁸ Nepal’s finance minister at the time estimated that rebuilding costs would exceed USD \$10 billion, nearly half of Nepal’s nominal GDP.²⁹ The international community flooded Nepal with humanitarian relief aid, but this aid has yet to be seen by much of the population. Less than 1% of global funds will go directly to Nepali aid groups, instead being funneled through international aid organizations.³⁰ Furthermore, the world responded as if the earthquake was an urban disaster, while the majority of deaths occurred in far-off and remote regions.³¹ The UN Office for the Coordination of Humanitarian Affairs estimates that 2.8 million people are in need of humanitarian assistance in Nepal and 864,000 are in hard to reach areas.³²

Relief efforts were further exacerbated by the initiation of an import blockade along the Indian border in September 2015, creating a severe shortage of petroleum, medicine, and other essential goods.³³ The Nepali government has accused the Indian government of

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imposing the unofficial blockade over dissatisfaction with the new Nepali Constitution ratified on September 20, 2015.³⁴ The Indian government demanded that Nepal be reinstated as a Hindu nation or remove the word “secular” from its charter, as well as address the concerns of the Madhesis, a Nepali ethnic group demanding its own autonomous region.³⁵ Previously, Nepal depended on India for its petroleum imports, represented by an average of 300 fuel trucks entering Nepal through the Indian border every day prior to the start

of the blockade.³⁶ This has diminished to irregular passage of five to ten fuel trucks, daily.³⁷ The blockade created overwhelmingly long lines for fuel and cooking gas, and forced many Nepali citizens to turn to the black-market to acquire needed medications. The result is that for over four months, construction and earthquake relief was nonexistent after having already been delayed due to the South Asian monsoon season.³⁸

RESEARCH METHODOLOGY

We conducted 36 semi-structured qualitative interviews over the course of eight weeks with 12 solar CEOs, seven husbands of solar CEOs, eight sales agents, and nine customers in eight districts: Bardiya, Chitwan, Dhading, Dhanusha, Kailali, Nawalparasi, Sarlahi, and Siraha. The enterprises involved in our research were those that joined the Empower Generation network and began operations in 2015 or earlier. Interviews took place over an eight-week period between June 13 and August 6, 2016. Interviews were conducted through a translator, and signatures of informed consent and release were obtained from all research participants prior to the beginning of any interview.

We constructed four interview guides—one solar CEO guide (Appendix A), one sales agent guide (Appendix B),

and one customer guide (Appendix C). Interviews with solar CEOs were designed to foster discussion about their personal history, the socio-economic impact of their entrepreneurial experience, changes in the structure of their conjugal or familial relationships, and their future aspirations. Interview questions for sales agents aimed to document the most beneficial components of Empower Generation’s program and how they spend the extra income earned from working. Interviews with customers sought to discover the benefits of solar light ownership in Nepal and to identify areas of improvement, regarding the products offered by enterprises within the Empower Generation distribution network.

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IMPACT



IMPACT

Empower Generation facilitates the establishment of autonomous, women-led solar distribution enterprises. It provides business acumen training and support to women entrepreneurs and their sales agents to promote the development of each enterprise, ultimately empowering women to distribute clean energy solutions despite the trials of business ownership in a male dominated society, exacerbated by the devastation of the 2015 earthquake. We chose to measure our impact through two main themes: women's empowerment and an increase in energy access. Each theme contains key indicators, which demonstrate the socioeconomic impact of Empower Generation's program.

Key indicators for women's empowerment are an increase in purchasing power as well as in business skills and confidence. The former measures this

through the effect of independent income generation, economic independence, and access to credit. The latter focuses on communal support of the enterprise, skills gained by solar CEOs and sales agents, and solar CEO involvement in local politics. Both indicators document the impact of Empower Generation's program on the promotion of women's economic development and women's agency.

Key indicators for energy access are the number of individuals with increased access to clean energy, greenhouse gas reduction, and consumer savings on energy spending. These indicators show how solar CEOs and sales agents are leading the clean energy revolution in Nepal.

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Women's Empowerment

TABLE 1.

Summary of Economic Impact

	ACTUAL (2015)	GOAL (2015)	ACTUAL (2014)	GOAL (2014)	ACTUAL (2013)	GOAL (2013)	ACTUAL (2012)	GOAL (2012)
Number of women led businesses distributing clean energy services	12	14	7	7	3	3	1	1
Number of individuals who have earned income working for the women-led businesses [previously Total Jobs Created (full time and part time)]	139	100	56	50	30	12	7	4
Increase in female entrepreneur's income*	7%	N/A	17%	15%	8%	5%	4%	NR
Percentage of women-led businesses that remain active in our network [1]	92%	100%	100%	100%	NR	NR	NR	NR
Percentage of individuals who received training and are actively participating in our network [2]	92% CEOS 33% sales agents	100%	92% CEOS 80% sales agents	100%	NR	NR	NR	NR

*Using assumption that income is 10% total revenue in addition to survey of previous household income report that assumes a steady household income. A goal was not set for 2015 because of the earthquakes—many lights were donated rather than sold to those impacted by the crisis.

[1] Active business is defined as an enterprise that is registered and has a business bank account and solar CEO who attends all appropriate training, manages sales agents, and sells solar lights.

[2] Active individuals in our network are individuals who received training to become a sales agent or CEO. A CEO is defined as an individual who is meeting our minimum expectations to remain in network as defined in the active business row above. A sales agent is defined as an individual who is in regular contact with a local CEO, receives training, provides sales leads updates, and gives solar product demonstrations in her/his community.

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Key Indicator 1: Increase in Purchasing Power

Income generation increases women's agency by dismantling women's dependence on their husband or family for economic support. Women are able to contribute more to their family's economic wellbeing. Mothers can afford school supplies for their children and young sales agents attain the financial means to resume their education. This helps to balance conjugal/familial power structures and gives women increased autonomy in household decision-making.

Nepal's GDP per capita is at USD \$691.³⁹ The average annual income for solar CEOs from their clean energy enterprise in 2015 was USD \$1,535, and the median annual income was USD \$563. These are significant findings, as the mean salary of solar CEOs is higher than the national GDP per capita, despite the barriers that women in Nepal face in business and employment opportunities.

TABLE 2.

2015 Income of Solar CEOs

SOLAR CEO	REPORTED ANNUAL INCOME FROM ENTERPRISE (USD)*	PERCENTAGE OF TOTAL INDIVIDUAL ANNUAL INCOME***	PERCENTAGE OF TOTAL FAMILIAL ANNUAL INCOME****
Runa	\$1,681	100	100
Lalita	\$560	100	25
Urmila	\$0**	0	0
Tulasa	\$336	100	71
Om	\$168	10	10
Basanti	\$224	100	11
Laxmi	\$224	29	29
Mina	\$672	48	11
Yam	\$897	55	18
Pabitra	\$1,681	50	50
Kala	\$673	37	13
Sita	\$11,208	48	33

*Based on the exchange rate on October 13, 2016: USD 1 = NPR 107.06

**Due to health issues, Urmila was unable to work for much of 2015.

***Rounded to the nearest whole number

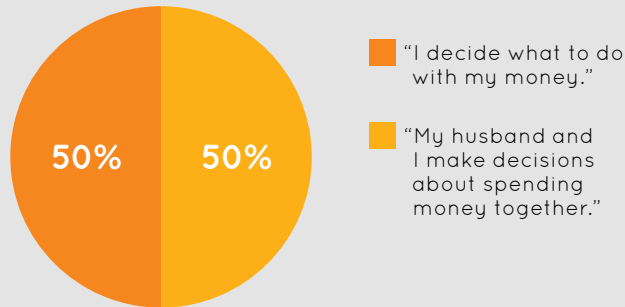
****Rounded to the nearest whole number

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FIGURE 1.

Economic Independence of Solar CEOs



"How economically independent are you?" [N=12]. Question E.4.b in CEO interview script (Appendix A).

Our research documents that solar CEOs are able to contribute more to their family's economic well-being, and that they have either complete or medial authority in household economic decision-making, regarding income that is independently earned. CEOs spend the additional income generated from their clean energy enterprise on household expenses, children's education, medical necessities, or as extra capital to be reinvested into their enterprise. CEOs, by both median and mean, earn an income that is near or above Nepal's GDP per capita.

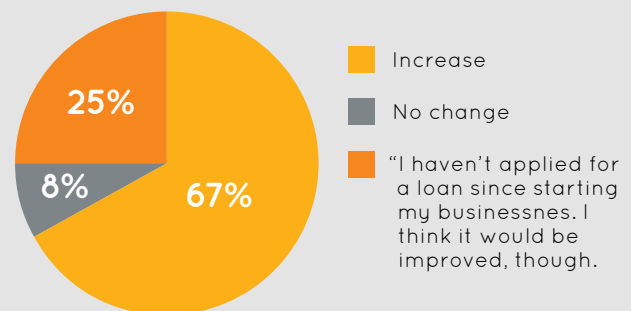
This demonstrates that their earnings are significant, but the discretion that they possess over their earned income is equally notable. Previous studies on household decision-making in Nepal found that women's autonomy in decision-making is positively associated with their age, employment and number of living children.⁴⁰ Rural women were also less likely to have influence on household decisions than urban women.⁴¹ Empower Generation is providing opportunities for women, especially women in rural areas, to earn an income and rebalance conjugal power structures.

For some women, such as solar CEO Runa, this opportunity is what allows her to ensure her family's survival. As a widow, Runa is among Nepal's most marginalized segments of the population. In Nepal, many widows are unable to access relevant legal documents (e.g., marriage certificates and husband's death certificates) for state financial support or inheritance, which in turn marginalizes widows from mainstream society and increases their vulnerability to violence and poor health.⁴²

Sales agents spend the marginal income earned to pay for phone bills, school supplies, tuition costs, and groceries. Nita, a nineteen-year-old sales agent from Kailali, paid for her NPR 1,000 tuition exclusively through her part-time work as a sales agent. Nita explained, "In order to pass my exit exams [from high school, to enter university], I needed to enroll in a tutoring course, but my brother told me to wait because my family could not afford it. I was determined though, and earned the money through my work as a sales agent."

FIGURE 2.

Change in Access to Credit for Solar CEOs



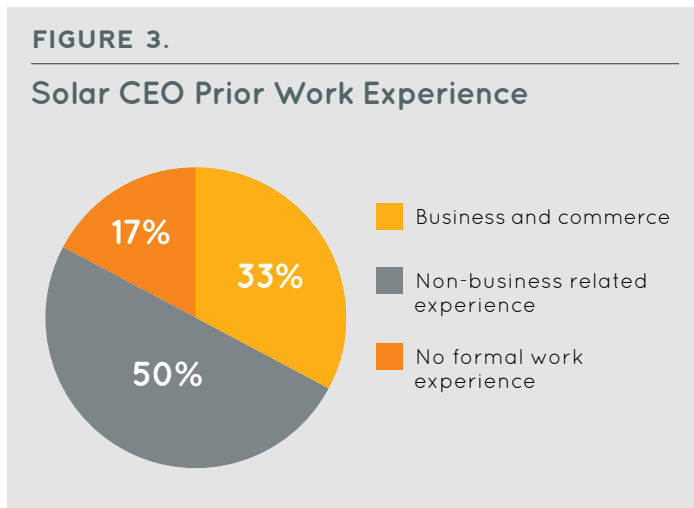
"Has your access to credit changed since becoming an entrepreneur?" [N=12]. Question E.7.a in CEO interview script (Appendix A).

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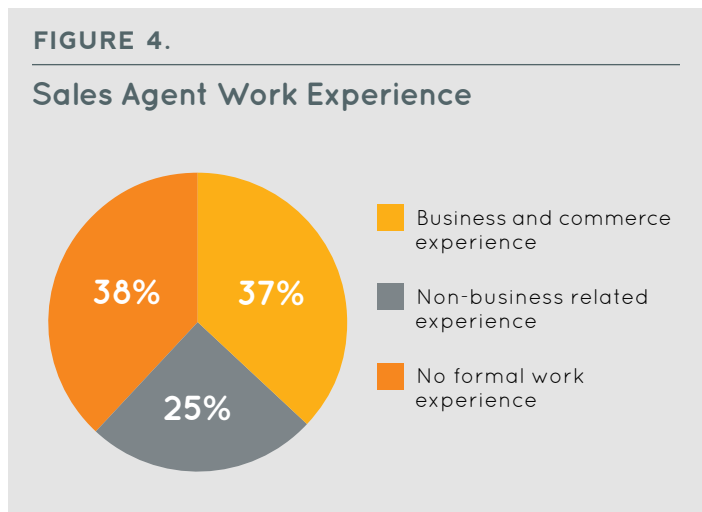
Access to credit is limited in Nepal, especially for women. Business ownership has given credence to many solar CEOs in the eyes of financial institutions. Eight solar CEOs express increased access to credit since beginning their business, citing the registration of their businesses as the factor most responsible for the increase in credit observed.

Key Indicator 2: Increase in Business Skills and Confidence:

Empower Generation’s sales and business trainings give solar CEOs the necessary knowledge and skills to take on the daily challenges of business operations. Empower Generation allows solar CEOs to develop their business acumen, leading to more confidence in public speaking and conviction in voicing their opinions in local politics. Solar CEOs also perceive increased levels of respect from community leaders due to the social nature of a solar light enterprise. Sales agents utilize the skills learned from Empower Generation workshops to establish their own businesses or gain better employment opportunities.



“Did you have any prior work experience before becoming an entrepreneur, and if so, where was your work experience?” [N=12]. Questions C.6.a and C.6.b in CEO interview script (Appendix A).



“Did you have any prior work experience before becoming a sales agent, and if so, where was your work experience?” [N=8]. Questions C.10.a and C.10.b in sales agent interview script (Appendix A).

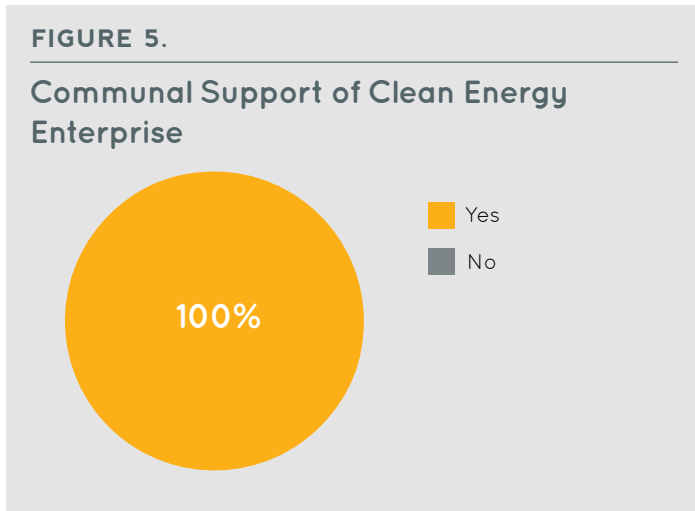
The majority of CEOs and sales agents had no prior, formal work experience in business. Empower Generation’s program of trainings and workshops teach the basics of sales, marketing, and management to CEOs and sales agents. The Empower Generation staff in Kathmandu provides follow-up assistance and monitoring to ensure the survival of each enterprise and to provide support to solar CEOs and sales agents.

All solar CEOs and sales agents are comfortable discussing solar technology with customers and express that they have found Empower Generation’s program extremely valuable. Ten of 12 CEOs relayed stories demonstrating impressive leadership capabilities and increased confidence in their leadership skills since becoming an entrepreneur.

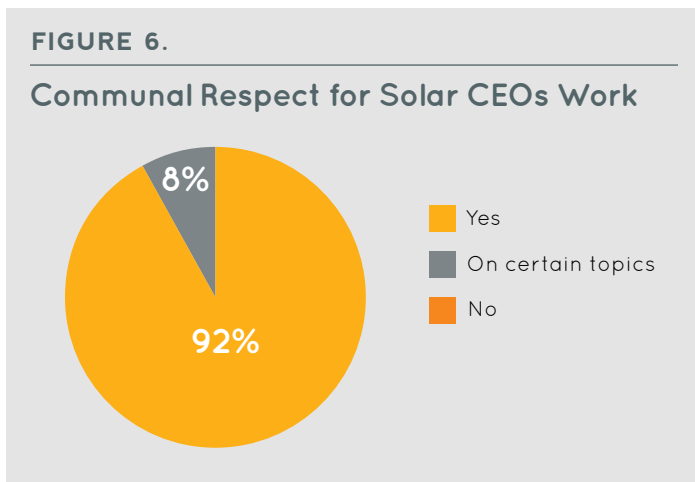
Runa Kumari Jha, a solar CEO, expresses this sentiment, “Once I became an entrepreneur and gained confidence in my business skills, I feel like I can talk to anyone. Initially, I felt intimidated talking to someone respectable in society. Now, I feel comfortable sharing my ideas and talking to anyone.”

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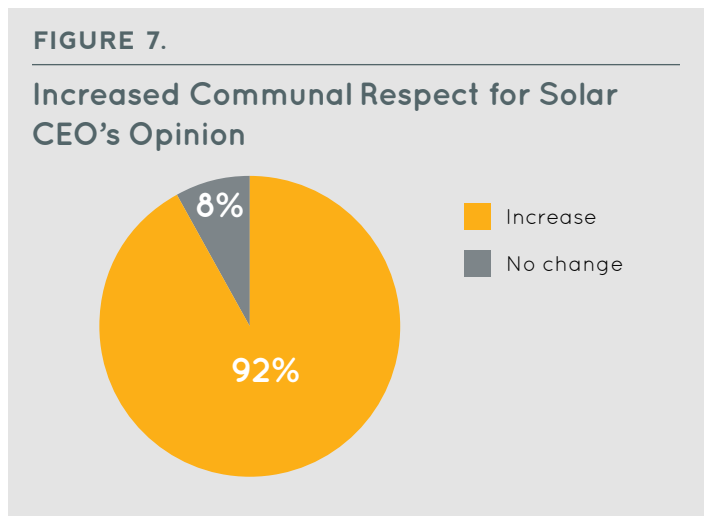
Echoing these sentiments, over 60% of interviewed sales agents identify communication skills as one of the most beneficial outcomes of Empower Generation’s program. Many sales agents are young women, and the confidence to approach customers and address groups of individuals on sales pitches has developed self-confidence in their other skills, demonstrating that women in Nepal thrive in business settings provided the opportunity.



“Does your community support your work as an entrepreneur?” [N=12]. Question B.10 in CEO interview script (Appendix A).



“Do you think people in your community respect you and see you as a leader?” [N=12]. Question B.11.a in CEO interview script (Appendix A).



“Is your opinion respected more in the community now that you are an entrepreneur?” [N=12]. Question B.14.a in CEO interview script (Appendix A).

The vast majority of solar CEOs express that the communities in which they operate support their enterprise, respect their work, and respect their opinion on local matters more now that they are businesswomen. Solar CEO Basanti Chaudhary states, “After becoming an entrepreneur, I am more respected and have a voice concerning community decisions. When people in my community plan to implement new changes or make a big decision, they will come to me for counsel due to my business trainings and experience interacting with people in Kathmandu.”

Solar CEOs also express pride in operating a solar enterprise due to the social value it provides for people in their community. Solar CEO Pabitra Aryal added, “I have a desire to distribute these solar lanterns to the rural off-grid communities that need them the most.” Sales agents also report increased freedom from their families due to their work as a sales agent. Laxmi, a 20-year-old sales agent, explains that her family was very strict with what she can do in public or whom she can be out with as an unmarried woman. When she first began selling lights, community members would offer skepticism and criticism

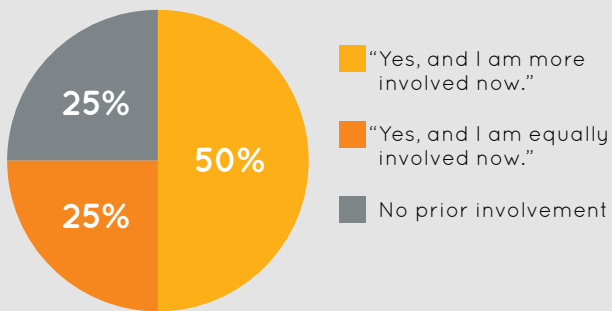
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to her parents, such as “Why would you let your daughter run around town like this?” Empower Generation’s program, training, and visits from the Kathmandu office staff have given sales agents such as Laxmi legitimacy in the eyes of her community. Some of the same individuals that offered harsh criticism of her initially are now supportive, even demonstrating interest in her work and training experiences.

Seventy-five percent of solar CEOs were involved in local political organizations in some form or capacity prior to business ownership, but an astonishing 67% of these women are increasingly involved in local politics and decision-making after starting a solar enterprise, despite the staggering time commitment that business ownership entails. Solar CEOs are increasingly involved in fighting for women’s agency through service as district representatives for national political parties or being the president of women’s cooperatives and developmental organizations. While most solar CEOs were engaged in these activities prior to business ownership, they perceive that male counterparts treat them with increased respect and legitimacy due to their business prowess. This provides solar CEOs with increased conviction in expressing their opinions on local political matters.

FIGURE 8.

Increase in Solar CEO Involvement in Local Politics



“Were you involved in local politics or community decisions before starting your business, and if so, are you more involved now?” [N=12]. Questions B.13.a and B.13.b in CEO interview script (Appendix A).

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Energy Access

Entrepreneurs, sales agents, and customers that utilize a solar light all report savings on their monthly electricity bill. A solar light is a sound economic investment as the money saved from purchasing a solar light surpasses the cost of buying candles, fragile emergency lights, or kerosene within a few months. The health benefits of avoiding harmful fumes from

kerosene or traditional biomass cannot be understated. Furthermore, solar lights add utility to everyday life. They are a reliable, clean source of light that can be depended on during extended load-shedding hours for daily activities such as cleaning, cooking, and studying.

TABLE 3.

Summary of Impact on Energy Access

	ACTUAL (2015)	GOAL (2015)	ACTUAL (2014)	GOAL (2014)	ACTUAL (2013)	GOAL (2013)	ACTUAL (2012)*	GOAL (2012)
Number of solar power units sold [previously clean energy units sold]	39,143	30,000	10,462	10,000	1,288	1,570	502	510
The number of people with access to cleaner, safer lighting and power	199,923	150,000	35,725	30,000	6,311	7,700	2,459	2,500
The amount of greenhouse gases (CO2) reduced due to units sold (Tons Annual)**	7,379.34	4,800	1,673	1,600	206.08	250	80.32	80
The amount (USD) of energy savings from units sold (over lifetime of unit)***	\$1.95M	\$387,094	\$370,000	\$100,000	\$47,656	\$58,090	\$18,574	\$18,870

* One pilot entrepreneur program existed in 2012

** Based on United Nations Framework Convention on Climate Change AMS-III.AR

*** Based on assumption that each solar lamp replaces one kerosene lamp

CALCULATING IMPACT

The following assumptions are used to calculate impact:

- Average cost Nepali Rupee (NPR) per light = 1,385
- Annual expense (NPR) for kerosene light (Nepal Living Standard Survey) = 2,520
- Average life (years) of solar lamp = NPR2-USD1 = 98.47
- Hours per day of lamp use = 3.5 (United Nation's Clean Development Mechanism)
- People per household = 4.9 (2011 Nepal Living Standard Survey)
- Number of solar lights per household = one

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Key Indicator 1: Number of People with Access to Cleaner Lighting and Power

Load-shedding is a recurring and widespread problem in Nepal, as the electric grid cannot meet the energy demands of the population. In some cases, load-shedding can last for up to 18 hours daily, forcing families and individuals to turn to kerosene, firewood, or other biomass for lighting and energy. Aside from being expensive, these traditional forms of lighting and energy emit harmful fumes that cause blurred vision and equates to smoking two packs of cigarettes daily when inhaled in a small, enclosed space. Burns and other injuries from accidentally knocking over kerosene lamps are also an unfortunate byproduct of these forms of energy. Kerosene is also extremely inefficient as a source of light, causing routine studying to be a challenge for children, due to its harmful fumes that cause irritated eyes and trouble breathing.

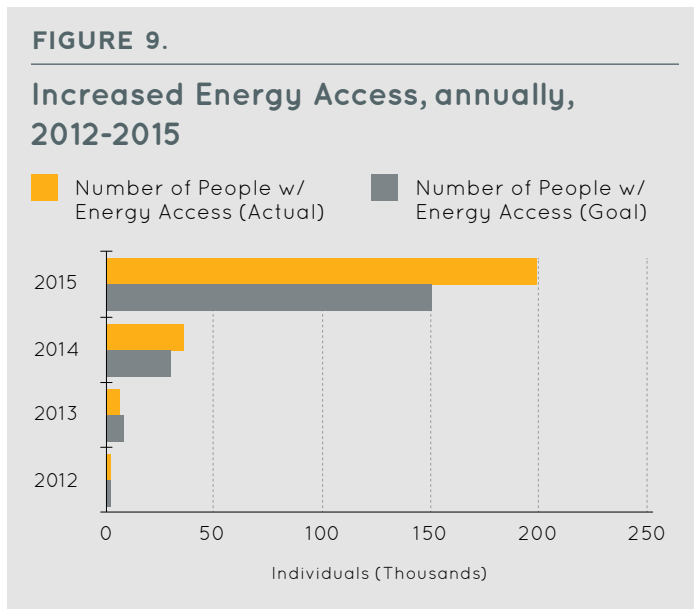
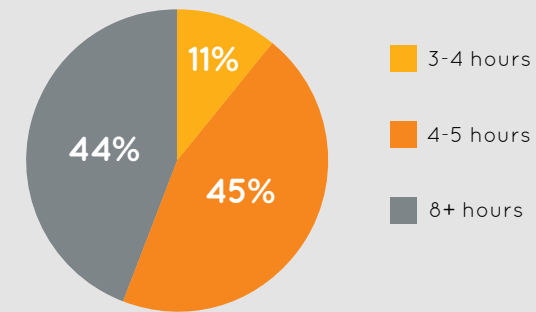


FIGURE 10.

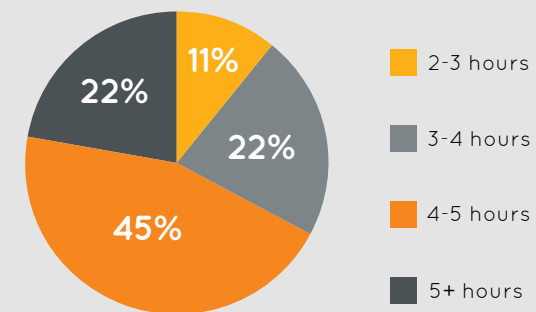
Reported Duration of Load-Shedding Hours, Daily, On Average



“How long to load-shedding hours typically last?” [N=9]. Question B.4.a from customer interview script (Appendix C).

FIGURE 11.

Reported Use of Solar Unit, Daily, On Average



“How many hours a day do you use your solar light during load-shedding hours?” [N=9]. Question B.4.g from customer interview script (Appendix C).

Units sold from Empower Generation enterprises have given an increased 243,687 individuals access to cleaner, safer, lighting and power since the inception of the first clean-energy enterprise in 2012. Nearly 200,000 of these individuals are from 2015 alone, demonstrating the tremendous growth of solar enterprises.

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Solar lanterns have enabled customers to resume their daily activities with a clean, safe form of light uninhibited by load-shedding hours. Customers that served as research participants indicated that they use their solar lights for a variety of general household activities, from studying to cooking and checking on livestock during the night.

Customers with children estimate that their children gain an additional 2.5 hours of study time a night, on average. One customer explained that her children used to refuse to complete their homework due to the fumes emitted by the kerosene lamp her family had used as a light source during load-shedding. “I won’t study, there is too much smoke!” Now her children are able to complete their work with a safe, reliable form of light.

All nine customers we spoke to expressed a belief that solar lights are making an impact in their communities. “It’s made lives easier because the product is affordable and durable, so it pays for itself and saves people money long-term. Solar lights are also much cleaner for people’s health, unlike kerosene or candles.”

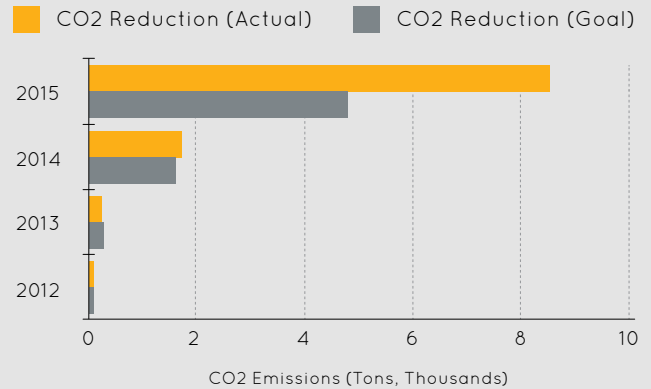
Key Indicator 2: Green House Gas Reduction

Nepal’s rural economy is heavily dependent on agriculture. Women in Nepal inevitably carry the brunt of the burden caused by climate change, as women comprise 90% of the paid and unpaid agricultural workforce.⁴³ In times of drought or other negative factors caused by climate change, rural women in Nepal face economic uncertainty. The lights that Empower Generation sold and distributed, over the course of their life, will reduce carbon dioxide emissions by 8,533 tons annually.⁴⁴

The carbon dioxide emissions reduced by Empower Generations solar units equates emissions from the consumption of 17,922 barrels of oil, 871,048 gallons of gasoline, and 8,206,391 pounds of coal.

FIGURE 12.

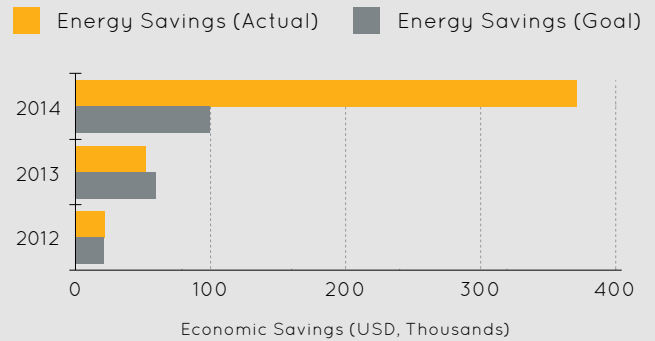
Avoided CO2 Emissions, annually, 2012-2015



Key Indicator 3: Economic Savings

FIGURE 13.

Energy Savings, Annually, 2012-2014



Empower Generation solar enterprises sold enough solar units in 2015 to create an economic savings of USD \$2.38 million over the life of each unit.

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FIGURE 14.

Energy Savings, 2015

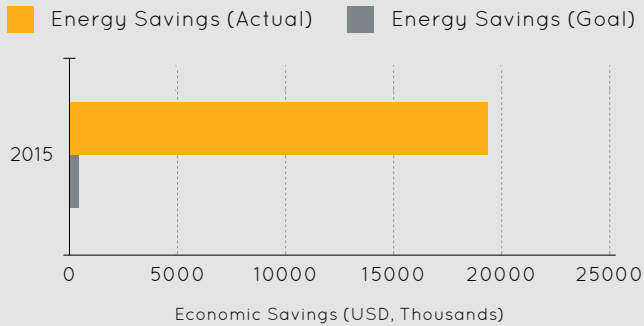
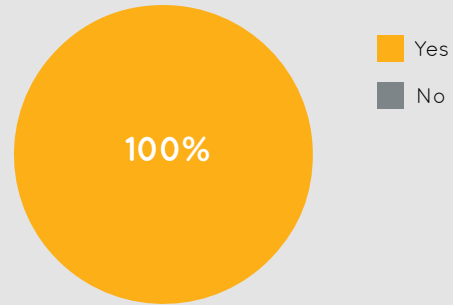


FIGURE 15.

Reported Consumer Energy Savings



These findings are consistent with our qualitative analysis, as all customers that served as research participants report spending less on energy since their purchase and use of a solar unit. The most common response for what consumers specifically spend less on is fragile, battery-powered lights.

“Did you spend less money on lighting products after purchasing your solar light?” [N=8]. Question B.6.a from customer interview script (Appendix C).

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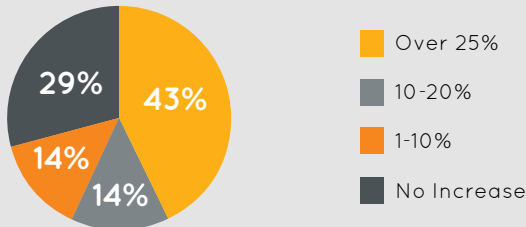
BUSINESS PERFORMANCE BY SOLAR ENTERPRISE



BUSINESS PERFORMANCE BY SOLAR ENTERPRISE

FIGURE 16.

Increase in Units Sold from 2014-2015, among enterprises active in 2014



This section examines the business performance of the solar enterprises within the Empower Generation distribution network and is utilized as another measure for Empower Generation to document the effectiveness of its program.

Of the seven enterprises operational in 2014, five increased the number of units sold in 2015 by an average of 91.5% and median of 25%. Of these, the increase in revenue averaged 18.1%, excluding Kalpavriksha Greater Goods. Four enterprises also added sales agents between 2014 and 2015, by a median of two sales agents.

Kalpavriksha Greater Goods (KGG)

Wholesaler | Solar CEO: Sita Adhikari (Started in 2012)

TABLE 4.

KGG Business Achievements

	2015	2014	2013
Units Sold	30,850	7,974	1,183
Active Sales Agents	-*	10	14

*KGG became a wholesale distributor in 2015.

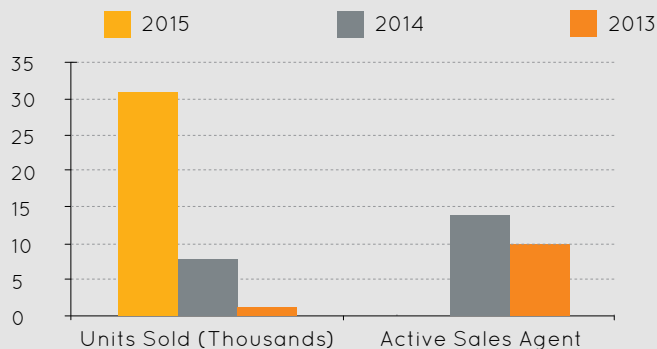
What were some successes of your business last year [2015]?

It's unfortunate that the earthquake happened, but I was able sell solar lights to two large organizations for distribution to very effected areas. I was able to make a lot of connections with the large customers. They know my business and they know about me. Another success was getting connected with different suppliers who are interested in partnering with me and supplying their product through my network. Whether I accept these proposals or not, other large organizations are interested in working with me now.

-Sita Adhikari

FIGURE 17.

KGG Business Achievements Visual



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Tri Urjah (TU)

Solar CEO: Pabitra Aryal (Started in 2013)
District (Region): Bardiya (Western Nepal)

TABLE 5.

TU Business Achievements

	2015	2014	2013
Units Sold	984	968	110
Revenue (USD)	\$13,649	\$13,673	\$431
Active Sales Agents	8	5	2
Lights Sold by Sales Agents	50%	29%	0%

Grameen Ujrah (GU)

Solar CEO: Lalita Chaudhary (Started in 2013)
District (Region): Siraha (East Nepal)

TABLE 6.

GU Business Achievements

	2015	2014	2013
Units Sold	363	478	252
Revenue (USD)	\$5,093	\$5,898	\$604
Active Sales Agents	6	4	6
Lights Sold by Sales Agents	70%	73%	25%

FIGURE 18.

TU Business Achievements Visual

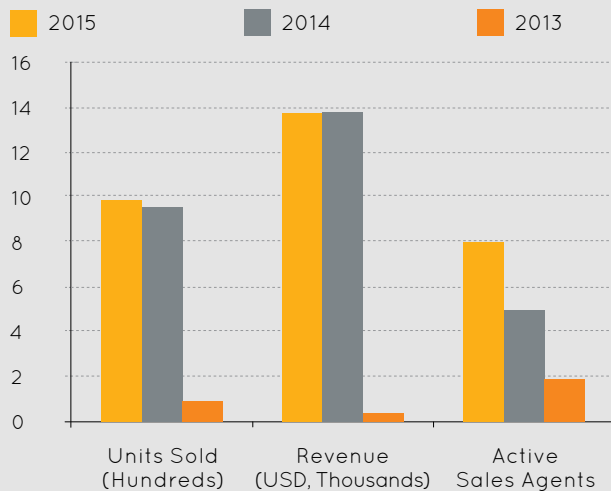
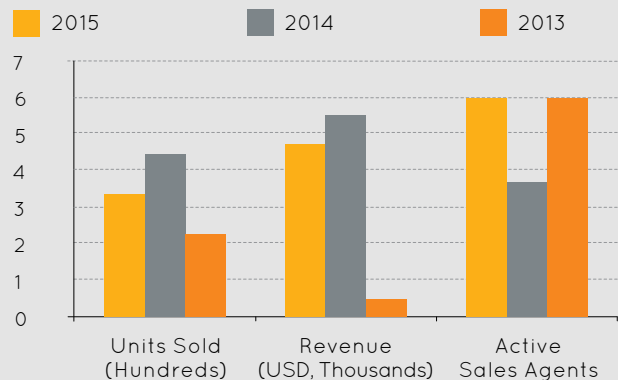


FIGURE 19.

GU Business Achievements Visual



In the next five years, what do you want your business to look like?

I want to be a sub-distributor, so that I can distribute more products in this area and be able to help other [solar] businesses.

-Pabitra Aryal

In the next five years, what do you want your business to look like?

I want the revenue generated from my enterprise to be enough to sustain my way of life while being able to invest in increased growth. I want GU to be big enough to have the ability to independently provide trainings to new sales agents in addition to the trainings Empower Generation provides.

-Lalita Chaudhary

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Ujyalo Mithila Solar Center (UMS)

Solar CEO: Runa Kumari Jha
(Started in 2014)

District (Region): Dhanusha (East Nepal)

TABLE 7.

UMS Business Achievements

	2015	2014
Units Sold	231	243
Revenue (USD)	\$3,308	\$2,914
Active Sales Agents	13	9
Lights Sold by Sales Agents	71%	48%

Namuna Saurya Urjah (NSU)

Solar CEOs: Basanti Chaudhary and Laxmi Chaudhary
(Started in 2014)

District (Region): Kailali (Far Western Nepal)

TABLE 8.

NSU Business Achievements

	2015	2014
Units Sold	368	294
Revenue (USD)	\$4,045	\$3,117
Active Sales Agents	2	4
Lights Sold by Sales Agents	20%	23%

FIGURE 20.

UMS Business Achievements Visual

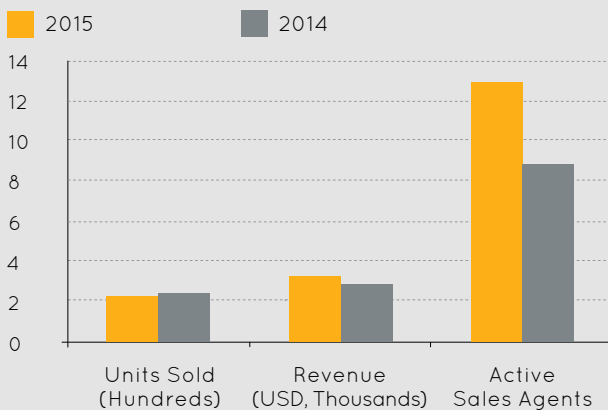
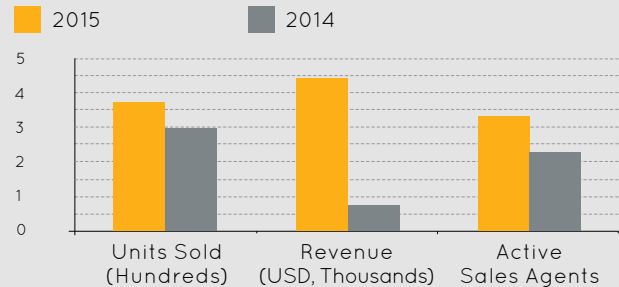


FIGURE 21.

NSU Business Achievements Visual



What do you think about your business? What do you want to do with your business next year?

I feel happy about my business because this [women-led solar enterprise] is totally new in this community. The income I generated was enough to provide for my family. I'm happy and motivated to sell more. I expect to receive more products from the distributor and begin making bigger sales.

- Runa Kumari Jha

What did you learn in 2015 to help you improve as an entrepreneur?

I learned how to build relationships and network to expand my business.

-Basanti Chaudhary

In the next five years, what do you want your business to look like?

I aim to see that every household in Kailali district will have two to three solar products and to no longer use candles or kerosene.

- Laxmi Chaudhary

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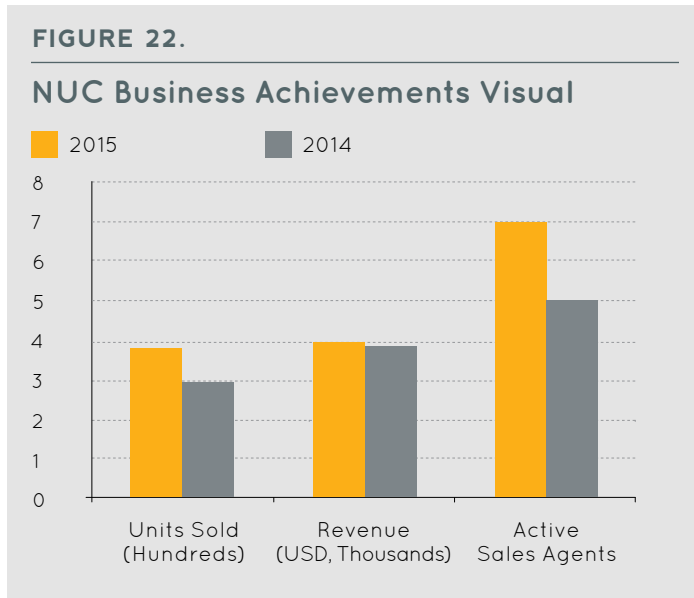
Nava Urjah Center (NUC)

Solar CEO: Yam Pokhral (Started in 2014)
District (Region): Kailali (Far Western Nepal)

TABLE 9.

NUC Business Achievements

	2015	2014
Units Sold	378	298
Revenue (USD)	\$3,940	\$3,833
Active Sales Agents	7	5
Lights Sold by Sales Agents	53%	21%



What were some successes of your business last year?

I've really increased the size of my network and hired good sales agents. People in my community have bought my lights and are very satisfied, which makes me happy.

- Yam Pokhral

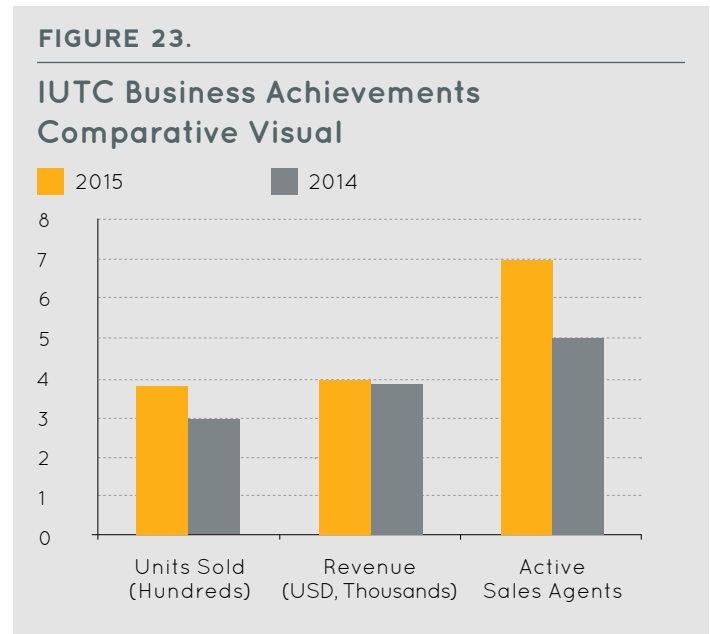
Isharika Urjah Trade Center (IUTC)

Solar CEO: Mina Chaudhary (Started in 2014)
District (Region): Kailali (Far Western Nepal)

TABLE 10.

IUTC Business Achievements

	2015	2014
Units Sold	187	160
Revenue (USD)	\$2,209	\$2,157
Active Sales Agents	3	4
Lights Sold by Sales Agents	18%	18%



What did you learn in 2015 to help you improve as an entrepreneur?

I have learned how to save and manage my money. I have a membership in four financial cooperatives, where I deposit NPR100-NPR 200 (USD \$0.94-USD \$1.87) into a daily savings account.

- Mina Chaudhary

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Tejilo Sourya Urjah (TSU)

Solar CEO: Urmila Baral

(Started in 2015)

District (Region): Sarlahi (Central South Nepal)

TABLE 11.

TSU Business Achievements

	2015
Units Sold	60
Revenue (USD)	\$846
Active Sales Agents	1
Lights Sold by Sales Agents	18%

In the next five years, what do you want your business to look like?

I want the entire district to have one of my solar lights and my village to be lit by solar lights. I want to hire more women as sales agents and to be known through the district for my success as a businesswoman.

- Urmila Baral

In the next five years, what do you want your business to look like?

I want to be able to hire enough sales agents to reach every nook and corner of this area. I want to see our products in every household of this area.

-Tulasa Pathak

You are involved in Empower Generation. Do you feel empowered since starting your business?

Yes, very much so! I had no idea what business was as a teacher. We [Tulasa and herself] started this business and were able to make sales. People appreciate our business; they say 'as a teacher you are such a good businesswoman!'

-Om Kumari Chaudhary

Nanda Bhauju Saurya Urjah (NBSU)

Solar CEOs: Tulasa Pathak and Om Kumari Chaudhary

(Started in 2015)

District (Region): Nawalparasi (Central Nepal)

TABLE 12.

NBSU Business Achievements

	2015
Units Sold	76
Revenue (USD)	\$854
Active Sales Agents	5
Lights Sold by Sales Agents	22%

Pragati Saurya Urjah (PSU)

Solar CEO: Kala Khatiwada

(Started in 2015)

District (Region): Dhading (Central Nepal)

TABLE 13.

PSU Business Achievements

	2015
Units Sold	277
Revenue (USD)	\$3,684
Active Sales Agents	7
Lights Sold by Sales Agents	49%

In the next five years, what do you want your business to look like?

I want to be able to provide whatever [energy system] the customer requests.

- Kala Khatiwada

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RECOMMENDATIONS

From our interviews with solar CEOs, sales agents, and customers, we found emergent impact themes and patterns that illustrate the social impact Empower Generation achieves in Nepal. These include: increased purchasing power, skills and confidence, energy savings, and individuals with access to cleaner, safer forms of light and energy. Here, we propose recommendations for improvement and further research to help Empower Generation pursue its mission.

Suggestions for Improvement:

Increase diversity of products—solar CEOs and customers expressed a desire for larger home systems capable of charging or powering small electronic devices. Cost, however, is a significant obstacle. A Pay-As-You-Go (PAYGO) system, therefore, could be instituted effectively to ensure that consumers can afford larger home systems. Consider piloting PAYGO systems with existing, trustworthy customers.

Maintain larger inventory—solar CEOs and sales agents report frustration with the length of time it takes replacement lights to arrive for warranty service. Maintaining a larger reserve inventory of products in Nepal and available to solar CEOs would allow quick replacement of defective lights and increase solar CEO and customer satisfaction.

Technical repair training workshop—in order to circumvent import issues and delays relating to warranty replacement, training entrepreneurs and

sales agents to make basic repairs with solar lights can also help reduce turnaround time for warranty replacements while providing new skills to solar CEOs and sales agents.

Addressing these issues will be an important component of helping Empower Generation scale its impact. Other social enterprises have been able to fund these kinds of activities with the help of program related grants.

Suggestions for Further Research to Document Social Impact:

Consumer and community surveys—administer surveys to communities and customers in order to better understand consumer needs and desires. Surveys or focus groups with community members who have not purchased lights from an Empower Generation enterprise can shed insights as to what creates consumer hesitation, which will help the enterprise address these concerns.

Viability of a PAYGO system—conduct research and analysis to determine the viability of instituting a PAYGO system in rural communities. Determining the price point that results in a productive equilibrium for the enterprise and consumers would be essential to the success of the business model. Future student research efforts could pursue these questions in depth in the field.

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CONCLUSION

Our research documented key patterns of social impact resulting from Empower Generation's program. Empower Generation fosters power and agency among women among solar CEOs. Training workshops build their confidence, develop their skills, and enhance business acumen. By participating in training and putting into practice in their businesses, the solar CEOs report increased confidence in voicing their opinion in local politics, demonstrated by the 75% of solar CEOs that are either equally or increasingly involved in local politics since starting their enterprise. Solar CEOs and their sales agents also report enhanced economic agency. Solar CEOs and sales agents have autonomy over the income they independently generate. Half of solar CEOs have complete autonomy over the income they earn, while the other 50% make household economic decisions cooperatively with their husbands. Two-thirds of solar CEOs have increased access to credit since starting their business, while an additional 25% have not applied for a loan but believe that their access to credit would also have increased.

The solar products sold by Empower Generation enterprises have also avoided nearly 9,000 tons of CO₂ emissions. The CO₂ emissions reduced by Empower Generation's solar units equates emissions from the consumption of 17,922 barrels of oil,

871,048 gallons of gasoline, or 8,206,391 pounds of coal. Empower Generation enterprises have provided 244,418 individuals with access to a clean, safe, and reliable light source. Solar lanterns provide tremendous benefits to consumers, even individuals who are grid connected. Of the customers surveyed, 11% report experiencing load-shedding hours of 3-4 hours daily, 44% report experiencing load-shedding hours of 4-5 hours daily, and 45% report experiencing load-shedding hours of 8+ hours daily, on average. Customers utilize solar lanterns sold by Empower Generation in place of harmful kerosene, candles, or biomass during load-shedding hours. Consumers report that their children are able to study an increased 2.5 hours daily with a solar lantern compared to kerosene, as their eyes and lungs are no longer irritated by harmful fumes and smoke.

Five of the Seven Empower Generation enterprises that were operational in 2014 increased the amount of units they sold in 2015, by an average of 91.5% and median of 25%. Four of these enterprises were also able to employ two additional sales agents in 2015 compared to 2014. These signs of growth are promising, and demonstrate the effectiveness of Empower Generation's business training program.

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APPENDIX A

M & E - Impact Report Interviews: CEOS EMPOWER GENERATION IN NEPAL (2015)

A. INTRODUCTION

A.1.	Interviewer: Are you willing to complete this interview?
	[0] No
	[1] Yes. Please sign here:

INTERVIEW OUTCOME

A.2.	Date __/__/_____
A.3.	Interviewer ID ____
A.4.	Data Entry Date __/__/_____

LOCATION INFORMATION

A.5.	VDC:	
A.6.	District:	
A.7.	Entrepreneur Name:	
A.8.	(a) Time started:	(b) Time ended:
A.9.	Phone Number:	
A.10.	Age:	
A.11.	Did they sign the release form?	
	[0] No	
	[1] Yes	
A.12.	Saved as:	

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B. STATEMENT OF SOCIAL STANDING

TIME SPENT ON WEEKLY ACTIVITIES

		Hours Spent (per week)
B.1.	Working with:	
	(a) Financial management, bookkeeping, paying bills	
	(b) Inventory management, warranty and service	
	(c) Training sales agents, delivering inventory, supporting and motivating sales agents, recruiting sales agents	
	(d) Sales and payment collection from customers	
B.2.	(a) Working for an income outside of your business (shop, farming, tailor business, teacher, social worker, etc.)	
	(b) Type of work:	
B.3.	Managing Energy (Collecting firewood, pay electricity bill, buying candles/kerosene)	
B.4.	Personal development/ Education	
B.5.	Professional development	
B.6.	Household activities (Childcare, cleaning, cooking, gardening)	
B.7.	Personal Entertainment (friends and family gatherings, movies/ tv, festivals, etc.)	
B.8.	Sleeping	
B.9.	TOTAL HOURS	

SOCIAL STANDING

B.10.	Does your community support your work as an entrepreneur?	[0] No
		[1] Yes

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B.11.	(a) Do you think people in your community respect you and see you as a leader?	[0] No
		[1] Sometimes/On certain topics
		[2] Yes
	(b) Please explain.	
B.12.	(a) How often do you participate in community-based activities?	[0] Never
		[1] A few times a year
		[2] Once a month
		[3] Once a week
		[4] Each day
	(b) Please explain.	
B.13.	(a) How often do you participate in community-based activities?	[0] No
		[1] Yes
	(b) If yes, are you more involved now?	[0] No
		[1] Yes, a little bit more involved
		[2] Yes, I am much more involved
	(c) What is your position?	

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B.13.	(d) If no, are you involved in local politics or community decisions now?	[0] No
		[1] Yes, a little bit more involved
		[2] Yes, I am much more involved
(e) Please explain.		
B.14.	(a) Is your opinion respected more in the community now that you are an entrepreneur?	[0] No
		[1] Yes
(b) How?		
B.15.	How would you describe yourself now?	
B.16.	(a) Do you want other women to be entrepreneurs or no? Are you inspiring to others because you are an entrepreneur?	[0] No
		[1] Yes, but not in the same business/area
		[2] Yes, it is good for other women to be entrepreneurs
(b) Additional comments		
B.17.	(a) Are you inspiring to others because you are an entrepreneur? Have you inspired others to start a business?	[0] No
		[1] Yes

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B.17.	(b) Additional comments	
B.18.	(a) What percentage of women in your VDC have a 10-5 paid job?	[0] 0 - 25%
		[1] 25 - 50%
		[2] 50 - 75%
		[3] 75 - 100%
	(b) What do some other women in your village do for paid work? (Ex: farming, household work, business, teaching, construction, social work, day to day planting, etc.)	
B.19.	Selling solar products is a new concept for a women-owned business. How do you feel about starting your own solar distribution enterprise?	

MOBILE MONEY

B.20.	(a) What percentage of women in your VDC have a 10-5 paid job?	[0] No
		[1] Yes
	If no, "Mobile money is a way to pay for products, deposit money, and send money to friends through your phone."	
	(b) Have you used mobile money before?	[0] No
		[1] Yes
	(c) If not, are you interested in using mobile money for yourself?	[0] No
		[1] Yes

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B.20.	(d) Additional comments	
	(e) Are you interested in collecting monthly mobile payments for Pay As You Go solar systems from your customers?	[0] No
		[1] Yes
	(f) Additional comments	

C. STRENGTH/BUSINESS

C.1.	(a) What aspect of managing your business are you most confident doing?	
	(b) What aspect of managing your business are you least confident doing?	
C.2.	(c) Do you feel comfortable talking to your customers about solar energy?	[0] No
		[1] Yes
C.3.	Which of these groups do you feel more confident speaking to since you started your business?	(a) Customers one on one
		(b) Small groups of customers
		(c) Large groups of customers
		(d) Groups of men
		(e) Community leaders or elders
		(f) Different castes
		(g) Other:
Answer:		

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C.4.	(a) How would you describe your leadership abilities? <i>(If needed, suggest feeling respect, speaking to communities/women's groups/cooperative, etc.)</i>	
	(b) Please give an example of when you were a good leader.	
C.5.	(a) How do you motivate your sales agents?	
	(b) Give an example of an event when you were a successful motivator. (Sales agent & customer)	
	(c) Give an example of an event when you were unsuccessful as a motivator. (Sales agent & customer)	
C.6.	(a) Did you have any paid work experience before becoming an entrepreneur?	[0] No
		[1] Yes
	(b) Where was your work experience?	[0] Agriculture
		[1] Teaching
		[2] Shop
		[3] Social Work
		[4] Construction/Day Labor
[5] Other:		

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C.7.	How did you first hear about Empower Generation?

D. RELATIONSHIPS/COUNTERFACTUALS

D.1.	(a) How is your communication with your sales agents?	[1] Bad, we never speak
		[2] Okay, it is difficult to talk to them
		[3] Okay, but they don't always listen to me
		[4] Good, but could be better
		[5] Fantastic, we understand each other well
	(b) How do you communicate with your sales agents?	
	(c) How do you feel about creating jobs for more women and men as sales agents?	
D.2.	(a) Do you think your sales agents respect you less because you're a woman?	[0] No
		[1] Yes
	(b) Explanation	
D.3.	(a) How do you identify your customers?	

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D.3.	(b) How do you contact your customers?		
D.4.	(a) Do you think your customers respect you less because you're a woman?	[0] No	
	[1] Yes		
	(b) Explanation		
	(c) Have you seen that change over the years that you have owned your business?	[0] No	
	[1] Yes		
(b) Explanation			
D.5.	(a) As a woman, have you ever faced physical abuse, verbal abuse, harassment, or disrespect when selling your products?	[0] No, never	
		[1] Yes, occasionally	
		[2] Yes, often	
	(b) Please explain.		
	(c) When have you felt unsafe working as an entrepreneur?		
	(d) When you felt unsafe, did you tell your EG Program Coordinator?	[0] No	
[1] Yes			

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D.5.	(e) What did your Program Coordinator do?		
D.6.	(a) Was your husband supportive of your decision to become an entrepreneur?	[0] No	
		[1] Yes	
	(b) If not, is he supportive now?	[0] No	
		[1] Yes	
	(c) Has your relationship with your husband changed since you became an entrepreneur?	[0] No	
		[1] Yes	
	(d) If so, how?		
	(e) Do you feel like your husband restricts you from things that you want to do?	[0] No	
		[1] Yes	
	(f) What kind of influence does your husband have on decisions you make?	[1] My husband makes the decisions	
		[2] My husband sometimes consults with me about decisions	
[3] My husband and I make decisions together			
[4] I sometimes consult with my husband about decisions			
[5] I make the decisions in our home			

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D.6.	(g) Please explain	
	(h) Which kind of decisions can you make without checking with anyone?	
	(i) Do you have to check with anyone besides your husband before making decisions?	[0] No
		[1] Yes
(j) Who is that person?		
D.7.	How has your children's opinion of you changed since becoming an entrepreneur?	
D.8.	(a) Were your in-laws supportive of your decision to become an entrepreneur?	[0] No
		[1] Yes
	(b) If not, are they supportive now?	[0] No
		[1] Yes
	(c) Additional comments	
D.9.	If you were not an entrepreneur, what job would you be doing for work?	
D.10.	(a) Do you know someone who has been a victim of domestic violence?	[0] No
		[1] Yes

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D.10.	(b) Have you or someone living in your house ever been a victim of domestic violence?	[0] No
		[1] Yes
	(c) Additional comments	
D.11.	(a) Have you or someone living in your house had to travel away from home for work?	[0] No
		[1] Yes
	(b) If yes, what kind of work was it for? Where did you/he/she go for the work?	
	(c) Was it well paid?	[0] No
		[1] Somewhat
		[2] Yes
	(d) Did your job turn out to be different than you or that person expected? If yes, in what way?	[0] No
		[1] Somewhat
		[2] Yes
(e) If yes, in what way?		
D.12.	(a) Have you or someone living in your house been solicited for prostitution or trafficking?	[0] No
		[1] Yes
	(a) Have you or someone living in your house ever been in a situation where you felt controlled by someone else?	[0] No
		[1] Yes

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D.12.	(c) If yes, please explain.	
	(d) Have you or someone living in your house been a victim of a crime?	[0] No
		[1] Yes
	(e) If yes, please explain.	
D.13.	(a) Do you feel that being an entrepreneur has changed the risks for you or the people you live with of being a victim of: <ul style="list-style-type: none"> - domestic violence - prostitution - leaving home for a job that is dangerous - a job that was not as described - not being in control of your life - a crime 	[0] No change
		[1] Yes
	(b) If yes, please explain.	
D.14.	(a) Do you think that increased employment opportunities for women as entrepreneurs and sales agents reduces the chance any of the described above exploitations happening?	[0] No
		[1] Somewhat
		[2] Yes
	(b) Additional comments.	

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E. STATEMENT OF HOUSEHOLD FINANCES GENERAL FAMILY FINANCES

E.1. How much income do you think your family has per month? How much does your family spend per month?

		NPR
E.1.	(a) Estimated Monthly Income	
	(b) Estimated Monthly Expenses	

HOUSEHOLD INCOME

E.2.	How much do you and your household generate each year from each of the following?	
		NPR
	(a) EP Income from EG enterprise	
	(b) EP Income from other work	
	(c) Household Agricultural Income	
	a. From Farming	
	b. From sale of cattle, chickens, milk, etc.	
	(d) Income from husband	
	(e) From Remittance (if applicable)	

HOUSEHOLD EXPENSES

E.3.	How much does your house spend per month on each of the following items?	
		NPR
	(a) Household Groceries (oils, rice, soaps)	
	(b) Education expenses	
	(c) Housing (rent, loan payment)	
	(e) Medical Expenses (doctor's fees, medicine)	

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E.3.		NPR
	f) Energy (electricity, LPG/Gas firewood, kerosene, candles, solar lights, emergency lights, diesel, generators, etc.)	
	(g) Festivals and Entertainment	
	(h) Clothing, Household goods, Cosmetics	
	(i) Water	
	a. From Farming	[0] Government tap
		[0] Pump
		[0] Collect it from:
	(j) Communication (telephone, mobile, internet, radio, etc.)	
	(k) Transportation cost	
	a. What type of transportation do you use most?	[0] Walk
		[1] Bus
		[2] Personal Motorbike
		[3] Borrowed/Shared Motorbike
		[4] Personal Car
		[5] Borrowed/Shared Car

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FINANCIAL POSITION

E.4.	(a) How economically independent are you?	[1] I don't control any money in my household
		[2] I make some decisions, but my husband/family controls most of the money
		[3] My husband and I make decisions about spending money together
		[4] I make most decisions about spending money, but consult with my husband on big spending
		[5] I decide what to do with my money
(b) Please explain.		
E.5.	(a) Do you contribute to household costs?	[0] No
		[1] Yes
(b) How do you spend the money from your business?		
E.6.	(a) Who else contributes to household costs?	
(b) How much does he/she contribute?		

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E.6.	(c) Has his/her contribution changed since you became an entrepreneur?	[0] No
		[1] Yes
	(d) What is your husband's occupation/profession?	
E.7.	(a) Has your access to credit changed since becoming an entrepreneur?	[0] No
		[1] Yes
	(b) If yes, how has it changed?	

F. 2015 BUSINESS YEAR SUMMARY

F.1.	(a) What were some successes of your business last year?	
	(b) What did you learn about yourself from these successes?	
F.2.	(a) What were some challenges in 2015?	
	(b) How did you plan to overcome these challenges?	
	(c) What did you learn about yourself from facing these challenges?	

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F.3.	What did you learn in 2015 to help you improve as an entrepreneur?									
F.4.	(a) What do you think about your business? What do you want to do with your business next year?									
(b) In the next five years, what do you want your business to look like?										
F.5.	(a) You are involved in Empower Generation. Do you feel empowered since starting your business?	<table border="1"> <tr> <td data-bbox="1044 783 1136 846">[1]</td> <td data-bbox="1136 783 1524 846">No</td> </tr> <tr> <td data-bbox="1044 846 1136 940">[2]</td> <td data-bbox="1136 846 1524 940">Yes, I feel a little bit more empowered</td> </tr> <tr> <td data-bbox="1044 940 1136 1035">[3]</td> <td data-bbox="1136 940 1524 1035">Yes, I feel more empowered, but not completely</td> </tr> <tr> <td data-bbox="1044 1035 1136 1100">[4]</td> <td data-bbox="1136 1035 1524 1100">Yes, absolutely!</td> </tr> </table>	[1]	No	[2]	Yes, I feel a little bit more empowered	[3]	Yes, I feel more empowered, but not completely	[4]	Yes, absolutely!
[1]	No									
[2]	Yes, I feel a little bit more empowered									
[3]	Yes, I feel more empowered, but not completely									
[4]	Yes, absolutely!									
(b) Additional comments										

PREPARED BY:





APPENDIX B

M & E - Impact Report Interviews: Sales Agents EMPOWER GENERATION IN NEPAL (2015)

A. INTRODUCTION

A.1.	Interviewer: Are you willing to complete this interview?
	[0] No (Thank you for your time!)
	[1] Yes. Please sign here:

INTERVIEW OUTCOME

A.2.	Date __/__/_____
A.3.	Interviewer ID ____
A.4.	Data Entry Date __/__/_____

LOCATION INFORMATION

A.5.	Village:	
A.6.	District:	
A.7.	Entrepreneur Name:	
A.8.	(a) Time started:	(b) Time ended:
A.9.	Phone Number:	
A.10.	Age:	
A.11.	Gender:	
	[0] Male	
	[1] Female	

PREPARED BY:





A.12.	Did they sign the consent form?
	[0] No
	[1] Yes
A.13.	Saved as:

B. STATEMENT OF SOCIAL STANDING

TIME SPENT ON WEEKLY ACTIVITIES		Hours Spent (per week)
B.1.	Working to generate an income	
	(a) Working with:	
	(b) Working for an income outside of an EG business (shop, farming, tailor business, teacher, social worker, etc.)	
	(c) Type of work:	
B.2.	Managing Energy (Collecting firewood, pay electricity bill, buying candles/kerosene)	
B.3.	Personal development/ Education	
B.4.	Professional development	
	(a) Trainings and Promotion Program (EG)	
	(b) Other trainings, meetings, and workshops	
B.5.	Household activities (Childcare, cleaning, cooking, gardening)	
B.6.	Personal Entertainment (friends and family gatherings, movies/ tv, etc.)	
B.7.	Sleeping	
B.9.	TOTAL HOURS	

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SOCIAL STANDING

B.9.	(a) Does your community support your work as a sales agent?	[1] No
		[2] Yes
B.10.	(a) Do you think people in your community respect you and see you as a leader?	[1] No
		[1] Sometimes/On certain topics
		[2] Yes
	(b) Please explain.	
B.11.	(a) How often do you participate in community-based activities?	[0] Never
		[1] A few times a year
		[2] Once a month
		[3] Once a week
		[4] Each day
	(b) Please explain.	
B.12.	(a) Were you involved in local politics or community decisions before starting your business?	[1] No
		[2] Yes
	(b) If yes, are you more involved now?	[0] No
		[1] Yes, a little bit more involved
		[2] Yes, I am much more involved

PREPARED BY:





B.12.	(c) What is your position?	
	(d) If no, are you involved in local politics or community decisions now?	[0] No
		[1] Yes, a little bit more involved
		[2] Yes, I am much more involved
(e) Please explain.		
B.13.	(a) Is your opinion respected more in the community now that you are a sales agent?	[0] No
		[1] Yes
	(b) How?	
B.14.	How would you describe yourself?	
B.15.	(a) What percentage of women in your VDC have a 10-5 paid job?	[0] 0-25%
		[1] 25-50%
		[2] 50-75%
		[3] 75-100%
	(b) What do some other women in your village do for paid work? (Ex: farming, household work, business, teaching, construction, day to day planting, social work, etc.)	

PREPARED BY:





MOBILE MONEY

B.16.	(a) Do you know what mobile money is?	[0] No
		[1] Yes
	If no, "Mobile money is a way to pay for products, deposit money, and send money to friends through your phone."	
	(b) Have you used mobile money before?	[0] No
		[1] Yes
	(c) If not, are you interested in using mobile money for yourself?	[0] No
		[1] Yes
	(d) Additional comments	
	(e) Are you interested in collecting monthly mobile payments for Pay As You Go solar systems from your customers?	[0] No
		[1] Yes
	(f) Additional comments	
	(g) Would you prefer to collect monthly payments for larger systems or sell single products to your customers?	[0] Sell single, smaller solar products
	[1] Collect monthly payments from customers	
	[1] Do both/Whatever the customer wants	

C. STRENGTHS/BUSINESS

C.1.	(a) Has your job as a sales agent helped you get other work?	[0] No
		[1] Yes

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C.1.	(b) Additional Comments	
C.2.	(a) Has your job as a sales agent helped motivate you to start a business?	[0] No
		[1] Yes
	(b) Additional comments	
C.3.	(a) Are you currently in school?	[0] No
		[1] Yes
	(b) If yes, how do you decide to split your time between working and school?	
C.4.	Do you feel you have the basic business skills and marketing to work as a sales agent?	[0] No
		[1] A little bit
		[2] Yes
C.5.	How much have the Empower Generation trainings helped you understand business and sales?	[0] Very much
		[1] Somewhat
		[2] Not at all
C.6.	(a) What aspects of selling products are you most confident doing?	
	(b) What aspects of selling products are you least confident doing?	

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C.7.	(a) Was there a time that you used skills you learned as a sales agent in another part of your life?	[0] No
		[1] Yes
	(b) Additional Comments	
C.8.	Do you feel comfortable talking to your customers about solar energy?	[0] No
		[1] Yes
C.9.	Which of these groups do you feel more confident speaking to since you started your business?	[a] Customers one on one
		[b] Small groups of customers
		[c] Large groups of customers
		[d] Groups of men
		[e] Community leaders or elders
		[f] Different castes
		[g] Other:
C.10.	(a) Did you have any paid work experience before becoming a sales agent?	[0] No
		[1] Yes
	(b) Where was your work experience?	[0] Agriculture
		[1] Teaching
		[2] Shop
		[3] Social Work
		[4] Construction/Day Labor
		[5] Other:

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C.11.	How did you first hear about _____ ?
C.12.	If you were not a sales agent, what job would you be doing for work?
C.13.	What do you like about your job?
C.14.	If you could, would you want to work more with _____ ?
C.15.	What new skills have you learned while being a sales agent?

D. RELATIONSHIPS/COUNTERFACTUALS

D.1.	How do you feel about working for a female entrepreneur?	
D.2.	(a) If a woman, Do you think your customers respect you less because you're a woman?	[0] No
		[1] Yes
	(b) Explanation	
	(c) Have you seen that change over the years that you have worked as a sales agent?	[0] No
		[1] Yes

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D.2.	(d) Explanation	
D.3.	(a) Have you ever faced physical abuse, verbal abuse, harassment, or disrespect when selling your products?	[0] No
		[1] Yes
	(b) Please explain.	
	(c) When have you felt unsafe working as a sales agent?	
D.4.	(a) Was your husband/wife supportive of your decision to be come a sales agent?	[0] No
		[1] Yes
	(b) If not, is he/she supportive now?	[0] No
		[1] Yes
	(c) Has your relationship with your husband/wife changed since you became a sales agent?	[0] No
		[1] Yes
	(d) If so, how?	
	(f) Do you feel like your husband/wife restricts you from things that you want to do?	[0] No
		[1] Yes

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D.4.	(g) What kind of influence does your husband/wife have on decisions you make?	[1]	My husband makes the decisions
		[2]	My husband sometimes consults with me about decisions
		[3]	My husband and I make decisions together
		[4]	I sometimes consult with my husband about decisions
		[5]	I make the decisions in our house
	(h) Which kind of decisions can you make without checking with anyone?		
D.4.	(i) Do you have to check with anyone besides your husband/wife before making decisions?	[1]	No
		[2]	Yes
	(j) Who is that person?		
D.5.	How has your children's opinion of you changed since becoming a sales agent?		
D.6.	(a) Were your in-laws supportive of your decision to become a sales agent?	[1]	No
		[2]	Yes
	(b) If not, are they supportive now?	[1]	No
		[2]	Yes

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D.6.	(c) Additional Comments	
D.7.	If you were not a sales agent, what job would you be doing for work?	
D.8.	(a) Do you know someone who has been a victim of domestic violence?	[1] No
		[2] Yes
	(b) Have you or someone living in your house ever been a victim of domestic violence?	[1] No
		[2] Yes
	(c) Additional comments	
D.9.	(a) Have you or someone living in your house had to travel away from home for work?	[1] No
		[2] Yes
	(b) If yes, what kind of work was it for? Where did you/he/she go for the work?	
	(c) Was it well paid?	[0] No
		[1] Somewhat
		[2] Yes
	(d) Did your job turn out to be different than you or that person expected? If yes, in what way?	[0] No
		[1] Somewhat
		[2] Yes

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D.9.	(e) If yes, in what way?		
D.10.	(a) Have you or someone living in your house been solicited for prostitution or trafficking?	[1] No	
		[2] Yes	
	(b) Have you or someone living in your house ever been in a situation where you felt controlled by someone else?	[1] No	
		[2] Yes	
	(c) If yes, please explain.		
	(d) Have you or someone living in your house been a victim of a crime?	[1] No	
		[2] Yes	
(e) If yes, please explain.			
D.11.	(a) Do you think that increased employment opportunities for women as entrepreneurs and sales agents reduces the chance any of the described above exploitations happening?	[0] No	
		[1] Somewhat	
		[2] Yes	
	(b) Additional comments.		

PREPARED BY:





E. STATEMENT OF HOUSEHOLD FINANCES

GENERAL FAMILY FINANCES

		NPR
E.1.	What is your average monthly income?	
E.2.	What is your average monthly income from being a sales agent?	
	(b) Working for an income outside of an EG business (shop, farming, tailor business, teacher, social worker, etc.)	

FINANCIAL POSITION

E.3.	(a) Are you satisfied with the commission you get from selling products for _____ ?	[0] No
		[1] Somewhat
		[2] Yes
	(a) Do you think that increased employment opportunities for women as entrepreneurs and sales agents reduces the chance any of the described above exploitations happening?	[0] No
		[1] Somewhat
		[2] Yes
	(b) If no, do you want to sell more products to gain more commission?	[0] No
		[1] Somewhat
		[2] Yes
	(c) Do you think it is a good use of your time to sell solar products for _____ ?	[0] No
		[1] Somewhat
		[2] Yes

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E.4.	Who decides how your income from selling solar products is spent?	
E.5.	On what items do you spend your income from being a sales agent and how much do they cost?	
	(a) Item	(b) Cost
	(c) Item	(d) Cost
	(e) Item	(f) Cost
	(g) Additional Comments	
E.6.	If you earned more, what would you spend your income on?	

F. 2015 BUSINESS YEAR SUMMARY

F.1.	(a) So far, what has been the most rewarding thing about being a sales agent?	
	(b) What did you learn about yourself from these successes?	
F.2.	(a) What were some challenges in 2015?	
	(b) What did you learn about yourself from facing these challenges?	
F.3.	In the next five years, what do you want your work to look like? What are your goals for the future?	

PREPARED BY:



APPENDIX C

M&E – Impact Report Interviews: Customers EMPOWER GENERATION IN NEPAL (2015)

A. INTRODUCTION

A.1.	Interviewer: Are you willing to complete this interview?
	[0] No (Thank you for your time!)
	[1] Yes. Please sign here:
A.2.	Did they sign the consent form?
	[0] No
	[1] Yes

INTERVIEW OUTCOME

A.3.	Date __/__/_____
A.4.	Interviewer ID ____
A.5.	Data Entry Date __/__/_____

LOCATION INFORMATION

A.6.	VDC:	
A.7.	Village:	
A.8.	Customer Name:	
A.9.	(a) Time started:	(b) Time ended:

PERSONAL DETAILS

A.10.	Age:	
A.11.	Phone Number:	

PREPARED BY:



A.12.	Gender:	[0] Male
		[1] Female
A.13.	Number of people in household:	
A.14.	Number of Dependent people	
A.15.	Grid connected?	[0] No
		[1] Yes
A.16.	Caste	[0] Brahmin
		[1] Ex-Kamaiya
		[2] Dalit
		[3] Janjati
		[4] Tharu
		[5] Other:
A.17.	Saved as:	

B. CUSTOMER FINANCIAL INFO.

HOUSEHOLD EXPENSES

		NPR
B.1.	Estimated Monthly Income	
B.2.	Estimated Monthly Expenses	

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B.3.	How much does your house spend per month on each of the following items?			
		NPR	UNIT	How often do you buy?
	(a) Electricity/Inverter			
	(b) LPG/gas			
	(c) Firewood			
	(d) Kerosene			
	(e) Candles			
	(f) Emergency lights			
	(i) TOTAL			

ENERGY & TIME

B.4.	When it's load-shedding, what do you use to get energy? How long do you use each product? What about when it's non-load-shedding? How long do you think you have electricity in a day?	
	(a) How long to load-shedding hours typically last?	[0] We don't have load-shedding each day
		[1] 1-2 hours
		[2] 3-4 hours
		[3] 4-5 hours
		[4] 6-7 hours
		[5] 8+ hours

PREPARED BY:





B.4.	LOADING-SHEDDING HOURS		NON-LOAD-SHEDDING HOURS	
	ACTIVITY	HOURS	ACTIVITY	HOURS
	(b) Firewood			
	(c) Kerosene			
	(d) Candles			
	(e) Emergency lights			
	(f) Electric lights (Grid)			
	(g) Solar lights			
	(h) Other:			
B.5.	(a) How many solar products do you own?		[0]	1
			[1]	2
			[2]	3
			[3]	4+
			[4]	0
	(b) What kind are they? (If more than 1) And why did you buy them?			
B.6.	(a) Did you spend less money for lighting products after purchasing your solar light?		[0]	No
			[1]	Yes
	(b) What do you spend less money on?			

PREPARED BY:





B.7.	(a) Where did you buy them?	[0]	EG EP
		[1]	EG Sales Agent
		[2]	Market
		[3]	Donation
		[4]	Other:
	(b) If bought from an EG EP or SA, what made you want to buy from them instead of someone else?	[0]	This light was cheaper than others
		[1]	The EP/SA was the only solar light retailer in community
		[2]	I trust EP/SA as community member
		[3]	I bought the light because of the warranty offered
		[4]	Other:
B.8.	(a) How do you feel about your solar product?		
	(b) Are there other solar products available to you in your community?	[0]	No
		[1]	Yes
(c) What are they?			
B.9.	Are most of the other households in your village connected to the grid?	[0]	No
		[1]	Yes

PREPARED BY:





B.10.	(a) Are you interested in having a larger solar home system?	[0] No
		[1] Yes
	(b) If yes, explain that it is a larger system, with a larger cost. Would you like to purchase it upfront or pay in monthly installments over time?	[0] I don't want to pay more for a larger system
		[1] I would still buy the larger system and pay in monthly installments
		[2] I would purchase the system upfront
	(c) If you had a larger system, what type of appliances would you also want?	<input type="checkbox"/> Mobile charging
		<input type="checkbox"/> Laptop charging
		<input type="checkbox"/> Radio
		<input type="checkbox"/> Fan
		<input type="checkbox"/> TV
<input type="checkbox"/> Refrigerator		
<input type="checkbox"/> Motor for pulling water		
<input type="checkbox"/> Other:		
B.11.	(a) Do you know what mobile money is?	[0] No
		[1] Yes
	(b) Have you used mobile money before?	[0] No
		[1] Yes
	(c) If yes, Who in your family uses mobile money?	

PREPARED BY:





B.11.	(d) If yes, Which provider do you use?

C. CONSUMER FEEDBACK/PURCHASE HISTORY

C.1.	What product did you purchase from _____ ?	
	(a) Product	(d) Product
	(b) Brand	(e) Brand
	(c) Model	(f) Model
C.2.	How long have you been using this product? (When did you buy it?)	
C.3.	How did you pay for this/these product(s)?	[0] Cash
		[1] Credit
		[1] Installment
C.4.	Who uses this/these product(s) the most in your home?	
C.5.	(a) How do your children use this light?	
	(b) If they use it to study, what did they use before you had the light?	
	(c) How many hours do they study with the light?	

PREPARED BY:





C.5.	(d) Does having the light impact their grades/marks?	[0] No
		[1] Somewhat
		[1] Yes
C.6.	(a) Have you noticed better health in you or your family after you purchased the light?	[0] No
		[1] Somewhat
		[1] Yes
	(b) If yes, please explain.	
C.7.	Has your solar lantern/light stopped working since you purchased it?	[0] No
		[1] Yes
	(a) If yes, what did you do?	
C.8.	What do you like about your solar product?	
C.9.	(a) Would you recommend a solar product from _____ to your friends or family?	[0] No
		[1] Yes
	(b) Why or Why not?	
C.10.	(a) Do you plan to buy additional solar products?	[0] No
		[1] Yes

PREPARED BY:





C.10.	(b) If yes, what do you plan to buy?	[0] Same product I have (_____)
		[1] A light with a mobile charger
		[2] A home system for light
		[3] A home system with a fan and TV

D. EXPERIENCE WITH ENTERPRISE & EMPOWER GENERATION

D.1.	(a) Who convinced you to buy a light? How?	
D.2.	(a) Did you purchase your product from a woman?	[0] No
		[1] Yes
	(b) Do you know that the business is owned by a woman?	[0] No
		[1] Yes
	(c) What do you think of the business being owned by a women?	
D.3.	(a) What company do you think we work for?	
	(b) Have you heard of Empower Generation before we came today or before purchasing a light?	[0] No
		[1] Yes
	(c) If yes, what do you know about Empower Generation?	

PREPARED BY:





D.3.	(d) If yes, how did you hear about Empower Generation?	[0] From the EP
		[1] From a Sales Agent
		[2] From a family member
		[3] From a friend
		[4] From a Sales Promotion Program
		[5] From social media (Facebook)
		[6] Other:
(e) If no, "Empower Generation is a social enterprise that supports women entrepreneurs, like _____, to start businesses and sell solar products. _____ is supported by an organization in the United States and provides trainings and workshops and connects entrepreneurs to quality products that have a warranty.		
(f) Does this change how you feel about the business you purchased your product from?		
D.4.	(a) Do you think solar lights are making an impact in your community?	[0] No
		[1] Somewhat
		[2] Yes
(b) How so? Please explain.		
D.5.	(a) Do you think _____ and other women-owned businesses are making an impact in your community?	[0] No
		[1] Somewhat
		[2] Yes
D.5.	(b) How so? Please explain.	

PREPARED BY:





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