SELCO Foundation

Annual Report

2016-2017

SELCO Foundation:
Executive Summary 2016-2017

Over the last decade there has been tremendous focus on the un-electrified areas of the world. Numerous incentives, investments and philanthropic monies have been allocated to encourage the diffusion of different types of lighting systems: mostly solar but also other forms of sustainable energy. Attention has been on various models like individual home lighting systems, micro and mini grids to grid interactive systems. There is an inherent assumption that providing electricity, via lighting, would lead many of the families completely out of poverty. It could be partially right but only for a small fraction of the population: one that does have a basic social structure and needs a little nudge, like children's education to cross over to the lower middle class category.

For rest of the poor populations the critical lifeline to get out of poverty is gainful employment and access to better services and opportunities. There is a clear-cut case that accessibility of energy can pave the way for those very opportunities: provided many pieces of the eco-system puzzle are put in place. The critical pieces being availability of efficient technology, affordable financing and access to markets: each of those are a challenge in themselves and presently require good amount of philanthropic monies to put those in place. While one appreciates the efforts and resources being allocated to provided lighting, a little more targeted focus on technology and financial models for heath, education and livelihoods could make the impact many folds more.

The challenges in the technology arena is multifold. The spectrum could be from non-availability to highly inefficient substitutes. For example, in the case like blacksmiths one still must rely on centuries old methodology while in the case of rice mills there has been no importance given to the efficiency of the motors being used. As most of these populations lie under the informal sector there is a severe lack of documentation of problems and thus there is a dearth of solutions.

The variance of income streams make it perplexing for local financial institutions to offer standard financial products which in the present forms could be either unaffordable for the poor or would have a mismatch because of the cash flow scenarios. One of the primary reasons why some of the financial products are expensive because they are designed for consumptive loans and not for asset building loans.

The third pillar of the eco-system is the access to markets. Market linkages for the informal sector in the most complex and an expensive proposition. Advances in technology and competition for large scale manufacturers has further complicated this challenge for the poor.

SELCO Foundation over the last year has strengthened the verticals of health and livelihoods as it realized it was critical of one had to create a link between sustainable energy and poverty reduction. The team also realized that the solutions can be arrived at provided one could look at all the three above mention challenges simultaneous and by a cross-sectoral team. The critical aim of SELCO Foundation is to produce a set of processes that could serve as a template for other solutions to piggy back on.

In 2016-2017, SELCO Foundation piloted numerous interventions for the poor using sustainable energy. These interventions, as covered in the report, encompass technology innovations, efficiency of appliances, tweaking the financial products and expanding the marketing channels for the poor.

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Introduction: SELCO Foundation

Globally 1.2 billion people do not have adequate access to basic energy services. India has 300 million out of its 1.2 billion people without access to energy.

Denying the poor, access to basic energy services disallows them the human right to a decent standard of living perpetuating the cycle of inequality and poverty. There exist strong correlations of access to energy having an impact on areas of wellbeing, health, education and livelihoods across household, work, individual, institute and community levels.

SELCO aims to bridge social and economic disparities via access to reliable, affordable and clean asset based energy solutions. SELCO's philosophy is rooted in a conviction that the poor should be part of the solution and not the problem. Lack of energy perpetuates poverty as it prevents the poor from accessing basic needs and in many cases earning opportunities.

SELCO Foundation was thus established in 2010 with the goal to use sustainable energy solutions as a catalyst to improve quality of life and economic opportunities for the under-served.

Its mandate is three fold:

- Pioneer and build the ecosystem to enable innovations that link sustainable energy and poverty reduction.
- Develop poor-centric solutions by addressing aspects of technology, financial and social linkages leading to a holistic solution that is socially, financially and environmentally sustainable.
- Through the innovations, help develop concepts and processes for other parts of the world to cater to the heterogeneous nature of poor segments.

By applying the above three mantras SELCO Foundation aims to bridge last mile gaps to deliver sustainable solutions, which innovate on replicable processes, while customizing it to site and segment for underserved communities.

Energy Access: What does it mean to us?

Lack of Access

An opportunity to build ecosystems

Only Energy Access ≠ Development

Key Catalyst for other Verticals

Much Beyond Basic Household Needs

What needs to be done:

1. Human Resource Development

Education (workshops, courses - inventional and sustainability) Vocational Training (technician, social entrepreneurship, social innovation)

2. Entrepreneur Incubation

Training (technology, operations) Support (Marketing, Recruiting, Networks) Mentorship and Handholding

3. High Risk Innovation

For different stages of innovation (ideas, prototyping, pilots) Entrepreneurship (long term, low interest rate, high risk financing for social entrepreneurs

4. Fund

End user and enterprise financing (for local small and medium size entrepreneurs) Investments (debt and equity)

5. Influencing Policy

Local and State Level

Input/ Output

End Users

Universities **Student Organizations**

Non-Governmental Organizations **Social Enterprises**

Financial institutes **Small and Medium Entrepreneurs**

To enhance quality of life and livelihoods by providing customized sustainable solutions that become assets for under-served communities.

Impact Reach Snapshot: 2016 - 2017

Type of Model	People Impacted 2016-2017 (direct)	
Basic Energy Access		
Home Lighting via Bank Financing	6000	
Integrated Energy Centers	1530	
Minigrids	1500	
Butter Churners, Hybrid Ultra Capacitors, Portable Lighting etc	1230	
Sewing machines, efficient looms	525	
Agri processing	2550	
Small business and industries (blacksmith, roti rolling, milking machine etc)	1010	
Basic Energy Access for PHCs	250000	per year
Cold Chain	180000	per year
Maternal and Childcare	2900	per year
Mobility in Health	25000	per year
Invention and Sustainability Program	17850	per year
Light for Education, Digital Education and Solar Hostels	6000	per year
Housing for Urban Migrants (pre fab and tent)	240	
No of Bankers Trained	97	
No of Sustainable Energy Entrepreneurs Incubated	15	
TOTAL People impacted	496447	

Energy Access Models

Many of the needs of the poor have been misunderstood and the solutions provided are more from a thought process of 'one size fits all'. There is an underlying assumption that the poor is a monolithic structure and needs standardized solutions. But needs and acceptability of a particular solution depend on the geography, terrain, cash flow or other social/ political factors. Thus, innovating for the poor does not end with technology innovation alone, but need to be coupled with innovations in delivery, financing and ownership models as well. Thus, changing the focus from the technology or the product to impact and looking at it from the lens of development brings to the centre the need to innovate on processes around delivery mechanisms, financial models, in addition to customization of the technology itself.

Home Lighting Systems

Building the ecosystem for need-based individual social enterprises that implement home lighting systems via bank financing

Regions: Karnataka, Tamil Nadu, Odisha, Manipur, Meghalaya, Assam

Partners: Eastern Envo, Mangaal, SELCO India, Jasmine Solar, Hill Solar, Aabha Innovation, Mukti Solar

Number of Households Impacted: 1200
Number of people Impacted: 6000

Integrated Energy Centre

Centralized charge stations for pay per use or rental services of basic energy access services

Regions: Karnataka, Odisha

Partners: Aabha, Mukti Solar, SELCO India

Number of IECs implemented: 9
Number of people impacted: 1350

Minigrids

Research and pilots on minigrids with appropriate local ownership, anchor loads and social glue models

Regions: Maharashtra, Karnataka, Tamil Nadu

Partners: SELCO Solar Light Pvt. Ltd.

No of research projects: 3
Number of people impacted: 1500

Individual Home Lighting System with End User Financing

Long term asset-based financing for owning high quality home lighting systems (with reliable end user servicing) provided by local social energy enterprises requires unlocking of financing for under-served user segments. The following tools were used to enable communities to access affordable energy financing:

- **Joint Liability Group**[1] **(JLG)** formation and financial literacy
- Identifying and training of local **Banking Correspondents**[2] **(BCs)**
- Easy to access **financial inclusion kiosks** in remote locations managed by BCs
- Placing **risk guarantee funds** in financial institutes for users that are high risk from a banking perspective
- **Revolving funds** to demonstrate credibility for very vulnerable families

Background

For true social sustainability, the poor need to be the owner of assets: and for that to happen they need to be financed in a manner they could afford the assets. Affordable financing has been one of the biggest barriers to energy access.

Mechanisms like risk guarantee, interest subsidies, margin money support, revolving funds and group lending, -one of the ways to address this need was leveraging JLGs or Joint Liability Groups as a model. This model had been successfully applied in Karnataka where bank financing was unlocked for home lighting systems, for households spanning entire villages.

Moving into other regions in India this learning was taken forward and adapted to local contexts and the existing infrastructure there if any.

Below are a few example case studies of projects done under Individual Home Lighting System with End User Financing:

Case Study 1: 500 households in Kalahandi, Odisha via Syndicate Bank

In Kalahandi Odisha, some of the worlds poorest tribes have existed for centuries and have remained un-bankable due to remoteness and poverty levels. By placing a risk guarantee fund within the bank for 500 households and convincing the bank to open a branch in the area through support in JLG formation, savings and financial literacy- the foundation has made the families financial included in the formal banking system.

Case Study 2: 150 households in Churchandpur, Manipur via Rural Women's Upliftment Society

Rural Womens Upliftment Society (RWUS) plays the role a local financial institute to provide appropriate loans for end users in over 30 villages in remote, conflict ridden areas. A revolving fund was placed within RWUS to prove to larger financial institutes the credit worthiness of the end users. An initial fund for 60 households finance continues to be revolved for many more households.

Case Study 3: 1000 households in Jamui, Bihar via Bihar Grameen Bank

Two NGOs -SEWA and Nav Vikas Ganga supported Bihar Grameen Bank in bridging the last mile gap for end user finance by identifying and training banking correspondents. Further more these 667 banking correspondent hubs in every village has now been leveraged via target setting of 1000 households and 50 livelihoods in BGB.

12 more examples similar to the cases above have been implemented over the year including basic subsidies of interest rates and margin monies.

[1] groups of 6-10 members that get a joint loan for the individual energy systems in order to create a 'peer pressure circle' for the end users. This curbs payment defaults, aids easy loan processing (due to lesser number of loans) and increases the credit worthiness of the group.

[2] an individual who works with the bank as a local representative, carries out tasks such as identifying and evaluating end users, door to door collections, enabling banking transactions and formalities etc.

Integrated Energy Centers

Integrated Energy Centers (IEC) are centralized charging stations that can be implemented in new or existing infrastructure, can be run by an NGO, an operator or an entrepreneur and can house multiple services like lighting, mobile charging, laptop printer xerox, refrigerator, mixie grinder, financial inclusion, health check ups, audio visual aids etc. Typically IEC services are pay per use or rental or offered on a need basis to a community.

Background

IECs is an ongoing program within the foundation since 2013 to develop newer ownership models, services and sustainable infrastructures in various geographies. Over the last 2 years 50+ IEC have been implemented across urban, rural and tribal contexts.

Minigrids

Villages that have a mix of household loads and large income generating loads (like rice mills etc.) are ideal candidates for micro-grids: the larger loads give financial stability to the system. One needs to understand the existing and perceived future needs of the selected areas, prevailing social structures, cash flow dynamics, income streams etc. to determine if micro-grids make economic sense or individual systems. All pilots and implementations prove certain models and processes that are high scalable and impactful.

Background

SELCO Foundations role is to capture leanings and implement successful working models of mini grids in the form of demonstrations to avoid unintended large scale failures in the sector of distributed renewable energy (DRE).

Case Study 1: Urban IEC with Neighborhood Improvement Program (NIP) -150 families

Urban IECs have been traditionally implemented via local operators and entrepreneurs. NIP has been conceptualized with the local city officials- BBMP (Bangalore Bahurat Mahanagar Palika) to leverage city infrastructure for implemented IECs. The current model is developed as part of a city bus stand. Apart from basic energy needs of the bus stand the NIP IEC also caters to lighting and mobile charging for hawkers and slum dwellers. The model can be replicated by using governing information hubs, vegetable shops etc as nodal points for energy access driven services for the under-served.

Case Study 2: IEC run by entrepreneurs in MM Hills, Indiganatha - 300 households

SELCO Foundation provided a margin money grant to Veeranna, a local petty shop owner to start an IEC in a remote tribal location. He got the remaining loan from MYRADA, a micro finance institute that played a role in identifying him as an entrepreneur as well. Veeranna how runs a refrigerator, a television a mixer grinder and mobile charging kiosk for temple visitors and local village residents. He has finished paying his loan with the first year of operation.

7 more types of IEC have been implemented this year with the major focus being on how maintenance can be shifted to local enterprises and how moving forward more entrepreneurial IEC across urban and tribal needs.

Case Study 3: Ghatpendri Minigrid in a forest rehabilitated community of Pench Tiger Reserve- 250 households

Two mini-grids on the edge of the tiger reserve in Ghatpendri were implemented by Conservation Action Trust and SELCO Foundation. The ownership of the mini grid lies with the local panchayat and the NGO, Stapuda Foundation plays a vital role in ensuring maintenance, collection and smooth running of the the mini grid. This mini grid model still needs self sustaining livelihood interventions and social glues.

Home lighting systems in Thiumul Rampur, Kalahandi district in Odisha

Sustainable Energy for Livelihoods

A range of different occupations and skill sets make up the the informal demographic, a lot of these have been practiced over generations and knowledge transferred to every subsequent generation. However, efficient technological interventions haven't made great inroads into these myriad communities either due to lack of contextualization of the technology itself or the financial means to acquire it. In the past year we have developed solutions that enable existing practitioners to improve their productivity or reduce the drudgery involved in the trade thereby leading to savings or income increase within each of the livelihoods

Some of the interventions include efficient:

1. Blacksmith Blower
2. Motorized Sewing Machine
3. Green Looms
4. Kowdi
5. Laptop Printer Photocopying Centres
6. Agri-Processing Machines
7. Roti Rolling Machines
8. Milking Machines

Small Livelihoods (Solar -roti rolling, milking machine, refrigeration, blacksmith, laptop printer xerox)

Increased Production rates for Roti Rolling, in addition to empowering new product diversification with an sustainable energy efficient solar powered roti rolling machine.

Regions: Karnataka, Maharashtra, Tamil Nadu, Bihar, Assam, Odisha

Partners: SELCO India, Star, SKDRDP, Ksheera

Number of Entrepreneurs supported: 202

Number of people impacted: 1010

Sewing Machine, Solar Looms & Efficient Looms

Enabling increase in productivity, by providing energy efficient solar powered sewing machines. Enabling increase in productivity, and reduction in drudgery, by providing energy efficient Solar Powered Loom.

Regions: Karnataka, Tamil Nadu, Maharastra, Bihar, Manipur, Odisha, Assam

Partners: SELCO India, Mukti Solar, Mangaal, Eastern Envo, DevNrgee, KVIC, NEST, MWGSN, Rang Sutra, Napasar, VGS, KHDC, Mitan., Mukti Solar

Number of Solar Sewing Machines and looms implemented: 55+15

Number of people impacted: 275+250

Agri Processing & FPOs

Enabling Value Added Processing by providing Sustainable energy, potentially along with efficient processing solutions – Rice Hulling, Chilly grinding, flour milling, Dhal milling, Maize shelling, and millet processing.

Regions: Karnataka, Tamil Nadu.

Partners: SELCO India, Sitiligli, Timbaktu, Vruuti, GRAAM, IFHT, Organic Mandhya, CSA, Other Organic Federations.

Number of "Projects" implemented:

- Sustainable Energy empowering value added processing at FPOs : 2
- Entrepreneur Service Model : 2 (1 Dhal & 1 Chilly)

Number of people impacted: 2550

Solar Powered Sewing Machines for Rural and Tribal Tailors

Key Concepts

Appropriate Technology: In the form of a DC Motor and a suitable belt and pulley for a sewing machine with an appropriate Solar System Design.

Finance: Unlocking finance by encouraging financial institutions to set targets for livelihood oriented loan applicants.

High Grade Machinery: For variety in stitches like industrial stitch and embroidery.

Livelihood Centres: For training and production at scale.

Background

Tailors are one of the most widespread occupations of India. Most rural and tribal communities depend on these locally present craftsmen for their clothing and linen needs. A typical Indian village may host at an average 2-3 tailors. These tailors cross geographies and are present across the country making them an extremely important yet ignored trade group.

Efficient DC Motors for tailors without access to regular power was first experimented with in Karnataka. This intervention reaped positive results and hence the program was extended to different geographies and contexts.

Some of the problems recognised while assessing the needs of these tailors was the lack of a flexible work timing. Most tailors using inefficient AC motors worked at the behest of electricity supply timings which in most cases was extremely erratic. This led to low productivity and loss of opportunity for the tailors in question.

Case Study 1: Ramsingh Kabadi: A tailor from tribal Odisha

Ramsingh Kabadi owned an inefficient AC Motor to meet his clienteles demands. However, due to erratic power supply he was unable to meet his production requirements. A DC Motor was suggested to him but a bank loan would be necessary for Ramsingh to own the asset. Reluctant at first, Ramsingh finally decided to meet with bankers along with our staff. The loan was soon approved and as ascertained his productivity increased multifold and his work hours were stabilised as well. In the coming few months we learnt that Ramsingh's confidence in the financial instution had risen greatly and he had on his own terms applied for a loan for a second machine and employed his own staff as a means to grow his business.

Case Study 2: Mass production of handicrafts in tribal Tamil Nadu

Sittlingi was once a remote tribal village with very little access to basic amenities. Two individuals then entered the village and set up a hospital and encouraged the use of organic farming practices. They also set up a special livelihood centre which revived the local Rajasthani Lambadi textile craft which was brought in with the early settlers in Sittlingi. Local women were thus given an opportunity to use high grade industrial stitching machines. Unfortunately due to lack of power, these machines were rendered useless and productivity for the women was at a constant decline. These machines were then given solar backup which ensured that the women could practice their trade at a time suitable to them. Today, demands are soaring and the Lambadi stitching women will soon have to expand their enterprise.

Case Study 3: Scaling through livelihood training centres

Vocational Training Centres (VTC) were used as one of the channels to reach a large number of end users. Channel building for identifying end users is an integral part of the scaling strategy. VTCs train women as tailors and are one such channel end users can be given awareness on technical, financial and ownership of efficient sewing machines run using sustainable energy.

Ramsingh Kabadi in his tailoring centre in Thiumul Rampur, Kalahandi District, Odisha
The Lambadi livelihood centre in Sittlingi, Tamil Nadu

Solar Powered DC Blowers for Blacksmiths in Rural India

Key Concepts

Appropriate Technology: In the form of a DC Fan and a coupling pipe in combination with a speed controller. One light with the system

Finance: Unlocking finance by encouraging financial institutions to set targets for livelihood oriented loan applicants.

Contextual changes: Development of a mobile version of the unit.

Line extensions: Testing and piloting of efficient angle grinders.

Background

Blacksmiths are often a forgotten profession though they form an integral part of the agrarian society. Blacksmith's as a community lie at the bottom of pyramid, and have worked using traditional technology over many generations. One of the key aspects of the blacksmiths workshop is a furnace kept hot using different versions of manual blowers or inefficient, large AC blowers. The more common and laborious manual blowers are generally operated by either other family members or by other hired help.

This problem was first introduced to us in Karnataka from an interaction with a blacksmith and a fellow SELCO member. Since then, over fifty other blacksmith blowers have been implemented. This automation greatly helps this dying profession to be continued by the following generation. There have been cases where blackmith's next generation have returned to the profession after the advent of the blower.

Case Study 1: Development of the new technology

Krishna Acharya is a blacksmith hailing from Karnataka. Facing a similar of issue of having to hire additional labour for operating his manual blower he seemed help from a SELCO staff member. The DC Fan solution was consecutively developed which was then modified using a coupling pipe, a usage earlier developed by Krishna Acharya himself. Today the solar powered blower has greatly advanced his productivity as well as saved him valuable costs which would have been incurred by hiring an additional labourer.

Case Study 2: Mobile blowers

While piloting the Blower technology with blacksmiths in Karnataka, multiple typologies of blacksmiths began to appear as possible users of the DC blower but not necessarily in its current form. One such case was of a blacksmiths who's place of work was at quite a distance from his home. His shop was a makeshift one and due to lack of adequate security he was unable to install a panel. The solution thus developed was of a mobile version of the blower with a Lithium Ion battery. The battery would be charged everyday using the panels installed in his house which could then be easily transported to his shop.

Efficient Technologies for Livelihoods: Ongoing Projects

Efficient Looms

The traditional handloom of India is used by a large weaving population spread across the geography of India. This handloom requires the weaver to use all four limbs in the weaving process. We have piloted the efficient loom or Sun Kharga which converts this 4 limb motion into a single limb motion. This technology can be retrofitted to the existing handlooms thus not making the weaver purchase a whole new loom. The productivity of this loom is comparable to a power loom and the power consumption significantly lower.

Solar Powered Fridge

The Solar Powered Fridge is currently being piloted in various geographies in partnerships with existing entrepreneurs who run local grocery stores and cafes in rural India. This Fridge is being tested for a being a valuable source of additional income by aiding the entrepreneur to increase his/her product diversity (Like chilled milk, cold drinks, perishable products, etc.)

Lok Seva Kendra

The Lok Seva Kendra is a livelihood centre model piloted in rural and tribal india. This livelihood centre houses basic services like photocopying, computing and printing and photography. This model has proven to be successful in various areas and is not being developed as a replication model for scaling.

Roti Rolling Machine

Flatbreads are a common food item for a large part of India. There exist in India various cottage enterprises making flatbreads for consumption among local commercial and housing institutions. A solar powered Roti Rolling Machine was developed to address the rising demands of higher productivity amongst these cottage enterprises. After successful tests this technology is now being piloted amongst other such entrepreneurs and amongst new entrepreneurs looking for a source of livelihood. Along with the technology, training, capacity building and aiding market linkages is also being developed to help these new entrepreneurs. `

Sustainable Energy for Decentralised Healthcare Delivery

Two statistics highlight the growing imbalance of development in India today. First – over the past three decades, the growth of top 0.1% of our population is equivalent to that of the bottom 50%. Second - every sixth person does not have basic energy access, and every third person gets electricity that is very unreliable. These two are closely interlinked. The absence of reliable education, healthcare and livelihood opportunities keep much of the rural populations trapped in poverty.

Access to reliable electricity acts as a further barrier for the delivery of basic services for the poor. Access to basic healthcare in remote rural areas can be challenging for multiple reasons. A patient that might have sacrificed a day's work to travel many hours to the Primary Health Center (PHC) might be turned back or referred to the next tier hospital, either because there is no doctor available, or there is no infrastructure to treat the patient, or there is no electricity to run the equipment when needed.

The result is either inadequate healthcare for that patient, or an increase in expenditure to avail basic care. A 2015 NSSO survey found that over 72 % of the rural and 79 % of the urban population rely on private hospitals for treatment. The average cost of treatment in a private hospital is four times that of a public hospital, draining the poor of time and resources that could've been put to more productive use.

Health and Energy Access

1. To Critically understand the energy gap hampering the delivery of quality health care
2. To Design optimized DRE systems to bridge the energy gap and develop a framework and criteria for optimization
3. Identify technologies, devices and processes that can increase the efficiency and mobility of healthcare delivery

Interventions

1. Decentralised Renewable Energy for PHCs
2. Sure-Chill (Solar Direct) Vaccine Storage
3. ePartograph
4. Mobility in healthcare

Regions

Karnataka, Tamil Nadu, Odisha, Meghalaya, Assam, Chhattisgarh

Partners

Eastern Envo (Boat clinic), SELCO India(Health centres, mobile dental unit), Aabha Innovation and Mukti Solar (Orissa) , Godrej (surechill)

Themes	Type of Interventions	Region	Number of health centrs	People impacted
Energy access for PHCs	DRE solution for Primary health centre	Karnataka, Orissa, North East (Assam, Meghalaya* Arunachal Pradesh*)	11	average (OPD 2000 IPD 100) per health centre/ month. Total Approx people impacted:/month **Yearly: Approx 2,50,000**
Cold Chain	SureChill (Solar Direct) Vaccine Storage	Karnataka, North East, Orissa, Chhattisgarh	16	(approx. 800 immunization per PHC/Month) Total: 12,000/Month **Yearly: 1,80,000**
Maternal and child care	ePartograph	Karnataka, North East	5	Number of Mothers registered and treated at PHC-average 15 birthing/PHC/Month Total: 60/Month **Yearly total: 900**
	Swasthya Saathi Health Kit	Orissa	45	Approx **2000 to 3000** people/Year
Mobility in healthcare	Dental health unit	Karnataka	1	Treating 25,000 children/year

Meeting Energy Demands in Primary Health Centres(PHCs)

Key Concepts

Need Based Solutions: *The health centers, which essentially respond to these local needs, also have varying characteristics and therefore different energy requirements.*

Service Networks: *Training and engaging local energy enterprises with good service history in the installation and maintenance of these systems can ensure periodic servicing for the energy systems, increasing their reliability and durability.*

Financing: *Energy interventions in health centres have the potential to reduce expenses both tangibly and intangibly.*

Capacity Building: *Training of local staff is crucial since they can optimize utilization of energy when power cut duration is more than initial design or during extended spells of bad weather.*

Background

Access to reliable electricity acts as a barrier for the delivery of basic services for the poor. Access to basic healthcare in remote rural areas can be challenging for multiple reasons. A patient that might have sacrificed a day's work to travel many hours to the Primary Health Centre (PHC) might be turned back or referred to the next tier hospital, either because there is no doctor available, or there is no infrastructure to treat the patient, or there is no electricity to run the equipment when needed. The result is either inadequate healthcare for that patient, or an increase in expenditure to avail basic care.

SELCO Foundation leverages sustainable energy as a catalyst for inclusive development, by building an ecosystem that develops highly replicable innovations for making reliable services available closer to the doorstep of the poor. We believe that Decentralized Renewable Energy (DRE) can improve healthcare delivery by improving quality of services,

Case Study 1: Public Private Partnerships and Additional Services at Primary Care

In Gumballi the solar system was designed to support equipments for dental care and eye care. A dentist at Gumballi PHC, Dr. Sagar expressed saying "We are very happy that the dental unit is connected to the solar and now we have round the clock power to run the compressor and Dental chair. Before we used to send the patients back home due to power cuts, or they have to wait for long hours. Now more procedures can be done due to uninterrupted power supply. Now we also see many more patients, in fact double the previous numbers." Additionally, on an average around 27% of reduction in electricity consumption amounting to Rs. 800 was noted when compared to previous year, in addition to a saving of Rs. 3,500 per month on diesel expenses. In total, this amounts to almost 60% reduction in total expenditure on energy.

Case Study 2: Mobility in Healthcare

Centre for North East Studies and Policy Research (C-NES) in partnership with the National Health Mission, Government of Assam has been operating Boat Clinics providing primary health care to the remote island populace in the Brahmaputra and across it since 2005. Typically, all the loads on Boat Clinics are powered by a diesel generator, the use of which is limited by the amount of diesel that can be stored on the boat, resulting in the services being terminated early every day. All the equipments on the boat clinic now run on solar. Now services stay open till all patients are treated (especially for emergencies). The staff have more time at night to complete their work and for leisure. The boat clinic at Jorhat is a pilot that will be submitted to the National Rural Health Mission for institutionalisation and implementation of other boat clinics in similar need and geographies.

Case Study 2: Critical Secondary Care in Tribal Areas

THI or Tribal Health Initiative is located in the heart of the Sittlingi Tribal Area. Power issues were rampant here which made the administration rely on expensive, dirty fuels to power their critical equipment like the Operation Theatre. After the solar installation for the Operation Theatre at THI, the machines now run uninterruptedly. Expenses on diesel have gone down significantly, as earlier they would have to purchase diesel once in every two weeks. The DG set is only used in the case of emergencies. THI is paying back part of the system cost over a period of three years.

Solar Powered Boat Clinic in Jorhat, Assam
Solar Powered Laboratory Equipment in use at a Primary Health Centre in Kaniguma, Kalahandi, Odisha

A Clean Energy Cold Chain Technology for Healthcare Services

Key Concepts

Energy Efficient Equipments: AC and DC versions suited for diferent types of energy solutions and are guaranteed to store as per medical guidelines.

Appropriate Technology: Innovations in health technologies need to be designed keeping in mind the resource constraints, logistical challenges, criticality and usability in rural contexts.

Case Study 1: In Boat Clinics

The boat clinic has a solar powered vaccine refrigerator, making it possible to also start storing vaccines, medicines and lab reagents, which otherwise had to be stored in ice boxes for a limited time. Due to increased hold-over time, boat clinics now also conducts immunisation.

Case Study 2: In Primary Health Centres

PHCs are now equipped an efficient cold chain technology to help store the vaccines, medicines etc with no repercussions due to power outage. There is no wastage of vaccine vials due to power cuts. Health centres which have not so far been involved in immunization programs are now considering starting immunization, because of the availability of a reliable storage mechanism through the SureChill.

Background

While conducting our surveys for our existing program of solar powering PHC's, a severe lack of a cold chain was mentioned by people at every level. Maintaining of cold chains was always hard while transporting vaccines, antibiotics, blood from sub centres to PHC's to district hospitals.

SELCO Foundation partnered with Godrej Industries to test and pilot their 'Godrej Medical Refrigerators with Sure Chill technology' for vaccine, medicine and blood storage. The refrigerators have AC and DC versions suited for different types of energy solutions and are guaranteed to store as per medical guidelines.

Efficient Technologies for Healthcare Delivery: Ongoing Pilots

Breath Counter

Pneumonia is one of the 3 major killers upto the age of 5. Counting breaths per minute is a simplest way to detect abnormal breathing which may be an early indication of pneumonia in infants. Community health worker assesses the child for emergency signs and if she finds any abnormality, she immediately refers the child to the higher centre. Accessible health workers in remote communities have limited literacy and clinical skills.
Maintaining coordination between counting breaths and keeping time while remembering cut-offs for different age ranges is difficult. In collaboration with Jan Swasthya Sahyog and SHRC Chhattisgarh SF and Remedio has redesigned the breath counter a device where health worker needs to input data for age range and press counter button for number of breaths observed. The counter switch counts up to one minute and gives alerts based on pre-fed data on cut-offs.

Comprehensive Medical Kit

A maternal kit with all the required equipment which are to be made available to ANM and ASHA auxiliary health workers which is portable and in place for any required assistance before, during or after childbirth. The kit will include the basic kits for maternal and child care including ANC, PNC and Birthing. The kit will include basic treatment kits for management of Eclampsia and PPH, e-Parotgraph (tablet), a Clean delivery kit, Baby warm Jacket and Ambu Bag. The portable kit also includes basic diagnostic kits for physical examination, BP Monitor and Pulse oximeter, Fetal doppler and breath counter for vitals, blood tests (Hemoglobin, Blood sugar levels, Malaria RDT), Urine test (pregnancy test, albumin and sugar). The equipment will be powered by Solar powered system (which includes solar panel, Li-Ion Battery, Charge Controller, AA/AAA battery charger, 12-volt DC points) IT will also support charging point, 3 Watt LED Lamp, Headlamp.

E - Partograph (Labour Connect)

During intrapartum period, world faces two million neonatal mortality and 2, 25,000 maternal deaths during intrapartum period every year. More than 99% of those deaths occur in low and middle income countries. The partograph is a form on which labor observations are recorded to provide an overview of labor, aiming to alert midwives and obstetricians to deviations in labor progress as well as maternal and fetal wellbeing. When deviations in labor progress are recognized early and corrected, complications are prevented and normal labor and delivery can occur. Partograph use was associated with less maternal blood loss and neonatal injuries. When adequately used and timely interventions taken, the partograph was an effective tool. Labor Connect is a Mobile tablet based intelligent labor monitoring tool which not only allows the staff nurse to register and enter vital signs of a pregnant woman but also reminds to monitor the labor vitals, as per the standard WHO intrapartum protocol. It also generates alerts in case of complications, based on an in-built algorithm. The doctor at a remote location can also view the live labor progress and guide the staff nurse.

Sustainable Energy for Education

In the context of low income communities (specifically remote rural/tribal communities), multiple issues plague the education system. Some of the most pressing interconnected issues include- lack of strong and consistent school management committee and systems; basic infrastructure (water, energy, sanitation etc); teachers regularly taking classes and lack of context-based teaching and learning modules. Due to these and other issues the student interest, attendance rates and learning levels remain compromised. More specifically, unreliable access to the grid in remote areas, cause loss of valuable study time during school hours and at home during the night.

Additionally, students often view issues surrounding sustainability, food-water-energy and development as global problems with no local significance. There is a need for students and the youth to be oriented to these basic sustainability concerns that are plaguing the world. The projects under this category also look at building content and programs that encourage students to go out into their communities, seek, analyse and engage with the issues identified to build their own solutions.

Invention and Sustainability Education Programme:

Invention and sustainability education implementation in Rural government schools through teachers.

Regions: Karnataka (Belthangady, Yadagir, Hubli), Odisha (Th. Rampur, Kalahandi)

Partners: Rotary club, SDM Education trust, Kalike, SRTT, Gram Vikaas, TATA Trusts, Karrtabbya

No of research projects: 3 (coconut water extractor, DC iron press and school bell)

Locations	District	Number of teachers impacted:	Total no. of schools reached (per year)
Karnataka	Dakshina kannada, Yadgir, Hubballi Dharwad	Yadagir = 20 teachers Belthangady = 45 teachers Hubballi-Dharwad = 25 teachers	98 Schools 14700
Odisha	Kalahandi	Kalahandi = 16 teachers through TTP + 2 from Gram Vikas School + 4 from the regular ISEP Schools	**21 schools** **3150 students** **+** **710 students attended a mini workshop on ISEP**

Invention & Sustainability Education Program

Key Concepts

Learning outcomes: *To sensitize the children (especially of rural and tribal areas) on social, environmental and economic concerns around the Food-Energy-Water nexus that affect the local community. .*

Learning Methodologies: *Hands-on activities to gain conceptual understanding, an exposure to the world of inventions and inventors, exercises that can boost problem solving abilities.*

Transferring Knowledge: *Curated content mapped with the school syllabus to provide as an aid to the teachers with a lot of hands-on activities to give a platform for learning by doing.*

Sustainable Education: *Students through the modules in ISEP are sensitized to think about their local issues and how to solve it with local materials.*

Background

The Invention and Sustainability Education Programme was started to focus on providing hands-on experience to students for the subjects they are studying in their classroom. The entire idea was to provide them with platform where a student will be able to relate the learning of the classroom to the real world application and be able to work on issues identified at local level. The idea of the programme and the modules has been designed keeping sustainability and use of local resources in mind.

ISEP has been piloted altogether in 29 Government schools in Yadgir and Ujire in the state of Karnataka, and Kalahandi in the state of Odisha for the past 4 years. The programme is currently reaching out to 119 schools through the teacher training programmes in the academic year 2017-18.

The next stage of this programme is 'Replication and institutionalization' given that the body of evidence has been generated that supports the objectives of the programme.

Case Study 1: Adapting to govt. school systems and transferring knowledge

To enable this programme through an open source philosophy with partners and other educational institutions, relevant content in the form of concepts, activities, facilitator manual, student workbook, teacher training modules, videos and story book are being consolidated regularly. From this academic year, ISEP's knowledge has been transferred to government school teachers of around 119 schools through its Teacher Training Programme in the blocks of Belthangady, Yadagir, Hubli in Karnataka and Th. Rampur, in Kalahandi, Odisha. With SELCO's philosophy of making replicable models, the programme is contextualized for the two geographies namely, Karnataka and Odisha. The content is translated in the local languages and with the help of local partners the modules are developed keeping the native environment and background in mind.

Moving forward the approach is also to work with other education institutes and organizations, which will take the ISEP learning and with the help of contextualization from SELCO Foundation, make it part of their system.

Case Study 2: Invention Fairs

Invention Fair is annual display of solutions developed by students of Grades VI-IX through "Invention and Sustainability Education programme" from the schools across rural and tribal areas of Karnataka and Odisha. The students have not only developed around 200+ innovations in these years but have also demonstrated greater understanding of issues around sustainability relating to agriculture, energy, water, waste management, safety and health. Be it the issue of intake of nutritious food, disposal of waste from home to outdoor, wastewater management, study table that holds many essential items at arm's length, LED light cycle for night travel, concerns around pure drinking water, bamboo hanging garden, handmade sanitary napkins for girls etc., the range of topics tackled reflected a keen enthusiasm for connecting what is learnt in school and through books with the problems that are faced on a daily basis and providing effective solutions for them.

Three particular innovations, namely the coconut cutter, movable dustbin and monkey repeller have been taken to next level and is being part of a solution to the local community.

Our efforts has been, and with more focus in the coming year will be to take these innovations to the community with the help of proper partnerships and incubation and mentoring support.

Smart Anganwadi Program

Key Concepts

Monitoring Improved Learning Outcomes: *Greater development of analytical and cognitive skills in children, on par with their counterparts from private Anganwadis and Montessori schools. (Robust data collection platform built in along with the content to track usage patterns).*

Better Learning Environment: *Specially designed and developed content which uses motion sensors to ensure that an Interactive learning environment is created in the Anganwadi.*

Incentivising Attendance: *Significant increase in the attendance rates in the Anganwadis post theintroduction of the tablets.*

Aiding the Teacher's Effort: *Teachers effort get reduced with the introduction of tablets as she can convey concepts better and helps her to plan her daily activities.*

Sustainable & Reliable Power Supply: *Sustainable energy access is provided with the introduction of fan and light along with the tablets which are fully solar powered.*

Background

The government run Anganwadis are facing a huge drop in enrolment, some of the reasons are: lack of good facilities and lack of acceptance of technology in comparison to the private Anganwadis or Montessori schools; land ack of access to interactive education materials especially the ones introduced through technical interventions. This shows a clear cut access gap here which leads to gap in access to quality education which can further impact the learning outcomes.

Smart Anganwadi project is proposed which will contribute to the improvement of the Anganwadi which includes, sustainable energy access solution by the use of solar powered system enough to run a tubelight and fan in an Anganwadi and providing tablets with curated educational content (Highly interactive games) is given to the teachers, who ensure that an interactive learning environment is created.

Case Study 1: Beeriga Anganwadi

is in the Puttur taluk in Dakshin Karnataka.At the time of implementation of the smart Anganwadi project there were close to 15 children coming to the Anganwadi. The Anganwadi had been facing a drop in attendance rates and also had issues with intermittent power. Training was provided to the teacher on how to use the tablet and the content present in the tablet. The content included interactive applications, videos and animations which covered topics like language, numbers, colours, shapes etc. Post the implementation of the pilot, the teacher has noticed significant improvement in the learning outcomes. The kids are able to grasp concepts better and at a much more faster rate. The teacher also feels her job has become easier with the introduction of technology. Handling the gadgets is a major attraction for the kids and contributes to better attendance rates as well with close to 20 kids attending the Anganwadi on average.

Sustainable Built Environment Solutions for the Poor

Incorporating passive technologies (that bring in natural lighting and ventilation), appropriate materials that provide natural cooling/heating inside the structure, can result in buildings that are inherently efficient in its use of energy. While this is a known fact across the build and design community, specific challenges emerge when trying to incorporate these techniques for low income communities. These constraints might be due to dense living environments or spatial constraints, lack of appropriate financing, access to skill and construction/material knowledge etc. Thus, there is a need to develop and innovate upon specific technologies and design or planning solutions that help build these missing processes in delivery of sustainable 'affordable' housing for infrastructure at the bottom of the pyramid.

A team of architects, designers and civil engineers, work directly with vulnerable, low income communities, to create models for delivery of sustainable and energy efficient environments, which directly impacts the overall well-being of the user of the space.

Access to better housing
Portable housing for urban migrants built to provide access to better natural lighting, ventilation and overall living conditions. Workshops conducted across communities to disseminate knowledge on techniques and technologies to build better housing.

Regions
Karnataka (Bangalore, Belgaum)

Partners
Mahesh Foundation, Masons Ink, Fedina

Number of houses constructed (pilots): 14

Number of beneficiaries having access to better housing: 48

Number of beneficiaries attending awareness workshops on better housing: 207

Number of beneficiaries exposed to techniques and technologies to build better housing: 1038

Housing for Urban Migrants

Key Concepts

Ease of Assembly & Portability: *Can be assembled and dismantled in 8 hours by unskilled people and transported anywhere in the back of a truck.*

Flexibility: *Can adapt to various geographies and climatic conditions as well as large or small family sizes.*

Scalability: *Can be optimised to dense large scale communities and easily mass produced.*

Sustainability: *Has a long lifespan, affordable and can be built to be resilient to extreme conditions.*

Background

In a snapshot , a notified slum which ideally exists for over 30 years, has metered electricity and water access which impacts their quality of life positively. While there are typical construction workers colony where several amenities are provided by an infrastructure organisation. Then there is a transient category wherein most seasonal urban migrants some of whom do aspire to make urban living permanent, fall in.

Owning a temporary portable dwelling unit is perhaps the biggest investment an ultra poor transient family would make in megacities like Bangalore. Therefore, in order to cultivate the awareness of a cheap and durable alternative, prototypes were constructed in various communities in Bangalore so that they could 'see and believe'. By allowing one or more families to voluntarily shift to the new units and then experience the difference of living in a better environment, it is expected that they can influence the people in the community and convince them of the advantages of living in a dwelling unit with adequate light, head room and ventilation.

The HUM Project, in its essence, aims to provide viable options the housing / shelter / built environment to vulnerable urban poor communities. The design aims to deliver a significant improvement in the living conditions of people by providing ample amount of natural light and ventilation, improved indoor air quality, security and protection from pest and rodents, thereby increasing the livelihood productivity and providing a healthy environment safe for habitation.

Case Study 1: Sagar Nagar Slum Community in Kanbargi, Belgaum

About 260 vulnerable households are living in Sagar Nagar Slum. They comprise of daily wage laborers and hawkers (mostly women work and provide for the family). They lack land rights and have been squatting on vacant land for more than a decade. This community live in extreme poverty coupled with unhygienic living conditions including open defecation, improper garbage disposal, sanitation facilities. They are also susceptible to flooding during monsoons, because part of the community is low lying. They keep rebuilding their structure when adverse environmental situation occurs (high winds, rains, accidental fires). They fear evacuation and thus they are very insecure and deprived of basic needs of life. Education and health facilities are also not easily accessible.

They live in temporary shelters made of old clothes, tarpaulin rags, old jute bags, discarded flex materials, wooden sticks as props, and blue plastic sheets. The houses lack light and ventilation
and are in constant need of repair and maintenance. For cooking and lighting, kerosene and firewood are used. Electricity is not available for this community.

Six housing structures were introduced as pilot projects in the five different socioeconomic communities within the slum as an alternative.

Case Study 2: Bridge School at Kasavanahalli, Bangalore

'Portable Tent School', a model developed to adapt interactive learning spaces for children from migrant communities. The school is encouraged to be creative, adaptable and fun for learning.
The structure is prefabricated and can be assembled on site in a day and can be flat-packed and reassembled in any community with a day's notice. It caters to basic needs of natural light and ventilation while providing a safe space for learning from the elements. The interiors have storage, raised plinths to safe guard from rains and rodents and safe flooring for children to read and study on. The structure encourages children to interact and develop an ownership with the built.

Kasavanahalli tent school is run by Samridhi Trust on government land along side a government primary school. Tent school aims to streamline the education of out of school migrant children
along the strategy of short term education (6 months). The two classrooms were constructed as a extension due to large amount of enrollment rates. Some classes were held outside in the covered veranda.

Portable Housing for Urban Migrants in Kanbargi Slum, Belgaum
Low income, Pucca Housing in Bangalore

Low Income Housing: Griha Kendra

Sustainable: *Built of durable natural materials that increase thermal comfort in compact living spaces where the structure and the application of processes are environmentally responsible and resource-efficient throughout a building's life-cycle.*

Incremental: *Where the structural stability and layout of the housing increase the potential of add on services and structures to the built*

Cost Effective: *Affordability of material and interior fittings and fixtures*

Local Masons: *Providing employment to local masons and training them in skilled construction methodology*

Background

The construction industry in India is responsible for 22% of carbon emissions in the country. This can be attributed to the fact that cement and steel are the most used materials in the industry. These materials have a high value of embodied energy (total energy consumed in producing the product during its entire life cycle).

Project "Griha Kendra" aims to improve housing and living conditions in communities that fall largely under the second category in the aforementioned list. They consist of communities that have been settled in the same location for about 20-25 years and have started constructing individual houses themselves. Although allotment papers from authorizing agencies have been distributed within communities, the ownership of the land lies with the government, hence making it difficult for residents to obtain housing loans against collaterals.

For the purpose of this project two communities have been chosen in urban Bangalore. The communities – Old Baiyyappanahalli and New Baiyyappanahalli - have existed for about 20 – 25 years.

Case Study 1: Old Baiyapannahalli - Kuppamma

As community members were unaware of healthy and efficient techniques of construction, it was important to raise awareness on the monetary and health benefits of healthy construction. Thus one demo house was constructed in the community as example. For the purpose of the demo houses, extremely underprivileged beneficiaries were identified. These were widowed women above the age of 60 who are unable to construct better homes for themselves.

The construction of the demo houses would also be a training ground for masons from the local community who would be exposed to efficient construction techniques. Residents of slum communities are dependent on local masons for the construction of the homes hence it is critical that masons are involved in the process as key stakeholders. It is through masons that awareness and knowledge spreading on construction techniques can be incorporated in any slum community.

The plot of 10' x 13' is located in the Old Baiyyappanahalli community of Bangalore. Kuppamma lived in a dilapidated house that is 30 years old. Her house is covered on three sides with other houses. She lives alone and had a toilet constructed in her house in recent years which was completely accessible only from the outside. Her kitchen was placed right at the back of house which created an unhealthy living environment.

The design followed the principle of basic design wherein the available funds were utilized to provide the basic amenities and necessities that the client would be unable to afford otherwise. This included the basic load bearing structure, toilet, RCC roof, staircase, plumbing, electrical wiring and basic carpentry works.

An important aspect of the design that needs to be noted is the incorporation of a rain water harvesting system in the design. With the larger aim to make such houses self sufficient in terms of energy use, an underground and overhead tank along with water filters have been incorporated into the design. The RCC roof has been designed as a filler slab (replacing the area of tension in the slab with filler material to reduce weight and cost of the slab).
The wall material Sunvik blocks were used for construction, procured from Bangalore city.

Banker Capacity Building

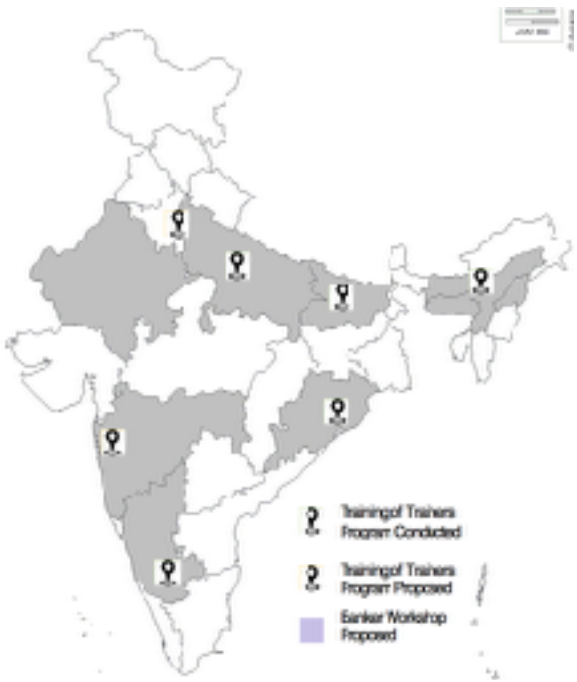
India currently has more than 260 million people who lack access to reliable and adequate grid-electricity (Climate Group, 2015). A robust ecosystem for decentralized renewable energy solutions can rapidly accelerate the access timeline. One aspect of this ecosystem is access to affordable and flexible finance for end users and small businesses. To address the bottleneck of access to finance, capacity building of bankers on Lending for Decentralized Renewable Energy (DRE) is a critical step. For the capacity building to have the most impact, the training of financiers on DRE should be institutionalized within the banker training institutions in the country through the training of their faculty.

SELCO in order to build awareness among bankers and enabling financing for DRE, organized a specific program with the below major steps:

Phase 1:
Identification of Training Institutions
Building of Content on Financing for DRE

Phase 2:
Training of Trainers from Bank Staff Training Colleges (STC) and Regional offices on Financing for DRE (TOT Program)

Phase 3:
Training of Bankers by trainees from the TOT program
Encouraging institutionalization of training in Bank STCs.



Identification Workshops/ Programs

The key to sensitization of the bankers and trainers is to ensure that there are systems for monitoring and support post the training. To achieve the same it is important to enlist suitable partners. During the period between January to March 2017, Bankers Institute of Rural Development in Lucknow, Indian Institute of Banker Management in Guwahati and State Level Bankers Committee in UP, Bihar, Karnataka, Odisha and Assam and NABARD regional offices were partnered with to organize workshops for trainers from banks.

Regions
Odisha, Assam, Karnataka, Bihar, Lucknow, Rajasthan, Meghalaya, Tamil Nadu

Partners
BIRD –Lucknow and Mangalore, IIBM – Guwahati, SIDBI, NABARD, State Level Bankers Commitee

Number of institutions where relationship was established: 40

Number of geographies: 8 states

Training of Trainers Program

The Training of Trainers Program for bank trainers from staff training colleges and administrative offices were conducted in five geographies during the period January to March of 2017. The workshops were hosted by Apex training Institutions and/or state level banking regulatory bodies. The aim of the program was to equip trainers in bank staff training colleges with the capacity to impart training on DRE financing, such that the knowledge can be transferred to the bankers they regularly train.

Regions
Odisha, Assam, Karnataka, Bihar, Lucknow, Rajasthan, Meghalaya, Tamil Nadu

Partners
BIRD –Lucknow and Mangalore, IIBM – Guwahati, SIDBI, NABARD, State Level Bankers Commitee

Number of Programs: 5
Number of trainees: 96

Photo on Top: Training of Trainers Program conducted in IIBM, Guwahati on the 9th and 10th of March 2017
Photo Below: Mr.Ganagi, CGM, NABARD, Karnataka viewing the demo of Solar Powered Sewing Machine in ToT program conducted in Bangalore on the 14th and 15th of March 2017

Approach to Banker Capacity Building

The approach has been to train faculty from bank training centres on all aspects linked to financing for the decentralised energy sector- starting with solar energy solutions and then move on to other DRE technologies.

These centre and trainers were identified through the relationships built with Apex training institutions, banks and the State Level Bankers Committee. And in the first phase of the program over 40 banker training institutions were identified in different parts of the country and robust partnerships were built with over 20 of them.

STRATEGIC PARTNERS TO ENHANCE FINANCING FOR DRE

1. State Level Bankers Committee and NABARD
2. Apex Training Institutions Bankers Inst. of Rural Dev (BIRD), Indian Inst. Banker Mgt. (IIBM), SIDBI MSME INTER. Training Inst. (SITI)
3. Bank Staff Training Colleges (ex. Baroda Academy, State Bank Learning Center, Syndicate Inst. of Bank Mgt.)

Identification & Monitoring
- Support with liasioning with banks and identifying the right participants.
- Monitoring the progress of lending by banks for DRE.

Policy Advocacy & Training
- Hosting the training
- Support with faculty and conduction of the programs
- Support in formulation of policy reco. and advocacy

Institutionalization
- Conducting training and sensitizing bank staff on DRE
- Supporting bank staff in evaluating DRE proposals

The below table details the highlights from the Training of Trainers workshops conducted for Bank Trainers.

Place	Partners	Key highlights
Bhubaneshwar, Odisha at SITI 3rd and 4th of February 2017	SLBC – UCO Bank, SITI (SIDBI MSME International Training Institute), NABARD	Participants: 18 Bankers from 15 banks, 4 RE entrepreneurs Role of NABARD in promoting RE by Dr.K.C.Panigrahi, CGM, NABARD Bio-gas Tech. & Schemes by Mr. B.K.Swain, Dy. Director, OREDA Overcoming Barriers by Prof. Umakanta Nayak, MBA Dpt., CUTM
Lucknow, UP at BIRD, 14th and 15th February 2017	SLBC – Bank of Baroda, Bankers Institute of Rural Development, NABARD	Participants: 22 Bankers representing 14 banks, 2 RE entrepreneurs Role of NABARD in promoting RE by Pratima Mishra, DGM, NABARD Solar Micro Grids and Bio-gas Tech. by Mr. Atul S.Shrivastav, UPNEDA Overcoming Barriers in Rural Financing by Dr. Dinkar Rao, Ex-Chairman, Prathama Gramin Bank Proposal Assessment for Solar Pumping by Mr.M.R.Gopal, BIRD
Patna, Bihar at SBLC, 1ST and 2nd March 2017	SLBC – State Bank of India, State Bank Learning Center, NABARD	Participants: 19 Bankers representing 15 banks, 3 RE entrepreneurs Role of NABARD in promoting RE by, Mr.M.M.Ashraf, AGM, NABARD Solar Micro Grids and Bio-gas Technology by Mr.Ashwini Ashok, Project Manager, BREDA
Guwahati, Assam at IIBM 9th and 10th March 2017	SLBC – State Bank of India, Indian Institute of Banker Management	Participants: 19 Bankers representing 11 banks, 5 RE entrepreneurs Role of NABARD in promoting RE by Dr. Hari Krishna Raj, AGM, Pico Hydro Technology by Mr.V.Ramasubramaniam Overcoming Barriers in Rural Financing by Mr.B.B.Sangam, DGM, RBI
Bengaluru, Karnataka 17th and 18th March 2017	SLBC – Syndicate Bank, Indian Institute of Banker Management	Participants: 18 Bankers representing 12 banks Role of NABARD in promoting RE by Mr. M.I.Ganagi, CGM, NABARD and Mr.Suhas Patre, NABARD Overcoming Barriers in Rural Financing by Mr.Somashekar, Ex-Director General National Academy of RUSETI

Photo on Top: Training Of Trainer program for Bankers in SIDBI International MSME Training Institute (SITI), Bhubaneshwar on the 3rd and 4th of February 2017.
Photo Below: Dr.D.V.Deshpande (Director BIRD), Dr. Dinkar Rao (Ex-Chairman Prathama Gramin Bank) inaugurating the TOT program in BIRD, Lucknow on the 15th February 2017

Photo on Top: Ms.Monica Walling founder of Greentech Solar presenting to bankers at the Training of Trainers Program conducted in IIBM, Guwahati on the 9th and 10th of March 2017

Energy Enterprise Development

SELCO Incubation program was started with an aim to address the challenge of energy access through sustainable social enterprises which can provide clean energy solutions to communities in rural, tribal and poor urban areas. The program amalgamates the learnings of the past 23 years of SELCO India to enhance the capacity of local energy enterprises. The important steps are:

Identification and selection: *Of entrepreneurs involving critical activities and workshops.*

Training and preparation of business plans: *Provide strategic direction to the incubatee.*

Mentorship & Network Building: *Business development services through mentorship and creation of network among entrepreneurs to engage with stakeholders and advisors.*

Support: *Enterprise Market Analyses Support to streamline their business models.*

Appropriate Investment: *Support to raise the right mix of social investments at different stages of growth which include grants for sunk costs such as initial market exploration or product development, loans for inventory and stock and equity for growth and expansion.*

Identification Workshops/ Programs

The identification programs and workshops were organized by reaching out to potential entrepreneurs through multiple channels such as NGOs, educational institutions, advertisements in multiple media streams etc.

Regions: Odisha (districts of Raygada, Gunpur, Nabarangpur etc.), Meghalaya, Guwahati

Partners: CUTM, RSETIs in Odisha, SIRD, PRAGATI, CSATD, SHRADDHA, Shillong Polytechnic etc.

Number of Programs/Events/Workshops : 20
Number of participants: 300

Induction and Training Programs

Post the identification process, entrepreneurs are interviewed and given activities to understand their ability and interest to become entrepreneurs. Energy entrepreneurs, service entrepreneurs and their members were shortlisted for intensive induction and exposure programs which included technical and managerial training with field visits and activities.

Regions: Odisha (districts of Gunpur, Nabarangpur, Mayurbhanj, Kalahandi etc.), Meghalaya, Assam

Partners: CUTM, RRTC, DBTech, EDI, RSETI etc.

Number of Programs: 10
Number of trainees: 100

Business Planning

SELCO categorizes entrepreneurs into different segments based on their market size, product range, geography, customer base etc. Each of these entrepreneurs need to strategize their operations based on contexts and their own inherent ability. Each incubatee is supported to develop his business plan.

Regions: Odisha, Meghalaya, Assam, Manipur

Partners: SELCO Solar Light Pvt. Ltd

Number of business planning/ ideation exercises: 23
Number of entrepreneurs established: 10

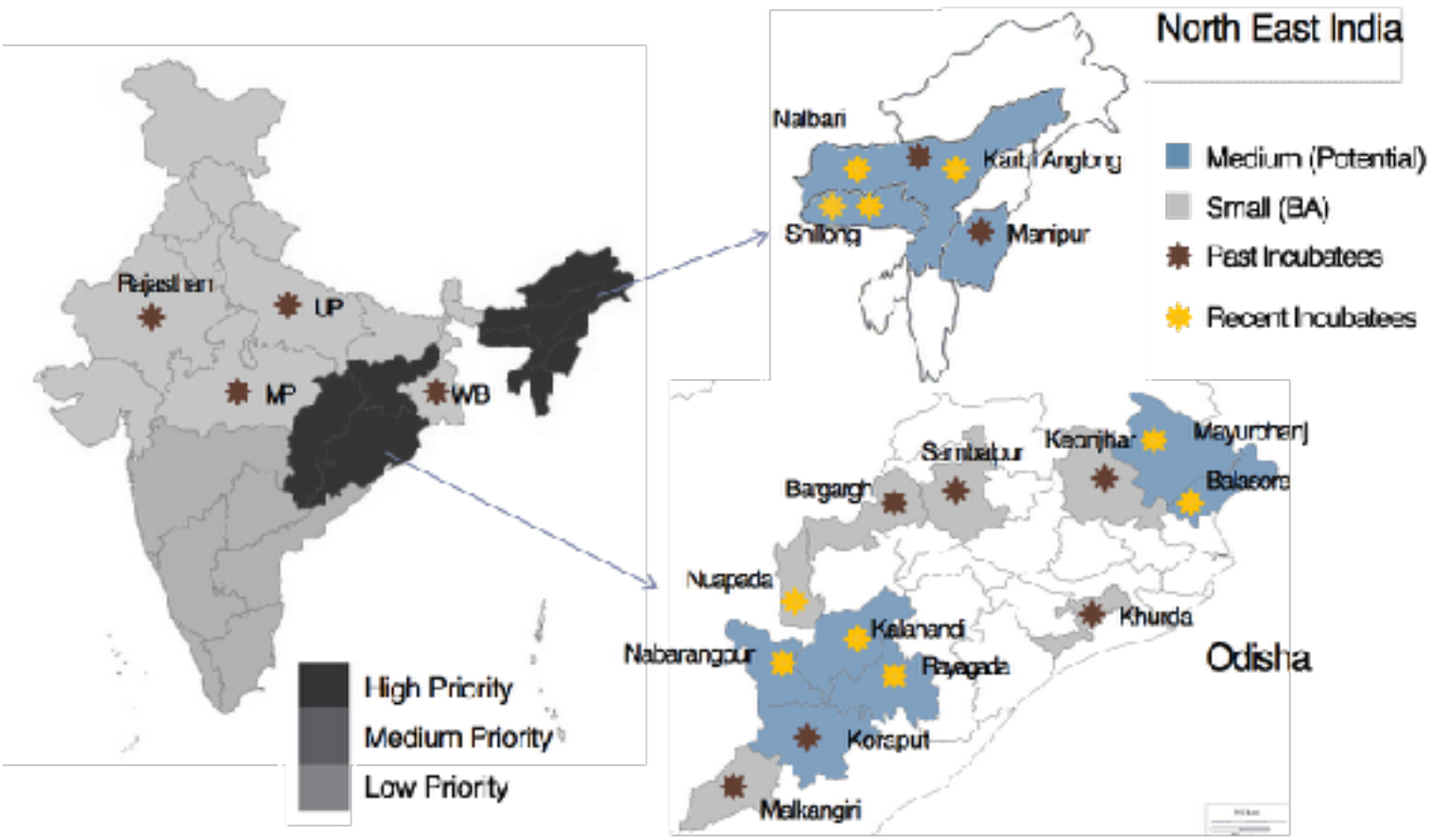


Photo on Top: Technical Training in Koraput, Odisha conducted by SELCO Foundation, SELCO India
Photo Below: Map of the presence of SELCO Incubatees

Entrepreneur Support

SELCO Incubation aims at empowering small entrepreneurs to grow into medium and eventually larger enterprises with the ability to reach more end users. A special focus will be maintained on non-english speaking local entrepreneurs. The figure below captures the various support areas on which SELCO works with its entrepreneurs during the various stages of the enterprise's development.

Enterprise Building: *Mission and Vision Alignment Human Resource building, Skill development, training and development*

Operational Support: *Operations, Finance and supply chain management, Technology (Product Support), Marketing and Communications Support*

Knowledge Transfer: *Process and model transfer, Business Plan Development, Partnerships, networks and linkages, Helping secure and manage appropriate funding and investment*

Background

SELCO through its two decades of experience has also realized that there is a strong linkage between reduction in poverty and sustainable energy. One of the crucial ways to link them together is by creating enterprises that are driven by passion to solve the critical issue of poverty in a socially, environmentally and financially sustainable manner.

The Incubation center focuses on identifying entrepreneurs from the grassroots who understand the social, cultural and economic context of the region and are able to customize energy solutions technically and financially to suit their needs. This in turn dictates that the incubation center helps the entrepreneur contextualize his business model and choose the most suitable operational practices and processes conducive for business operation in the region.

The regions in which the incubatees operate have poorly developed basic infrastructure resulting in high transportation costs, poor logistics facilities, poor communication and internet connectivity. The end-users targeted are from remote areas whose family monthly incomes average Rs.5,000 to Rs.6,000. The end-users often live in unelectrified homes and do not have access to mainstream financing, good health or educational facilities.

Below are a few example case studies of linkages and support provided to entrepreneurs.

Case Study 1: Shreyas Solar gets access to quality products and flexible credit periods

A strong supply chain is essential for the successful operation of an energy enterprise. With start-up enterprises, the need for flexible credit cycles can determine the ability of the enterprise to survive in the market. The incubation team has been able to establish vendor linkage with flexible credit terms for start-up businesses. Sappan Basantia founder of Shreyas Solar located in Gunpur in Odisha was linked with Pioneer Solutions in Bhubaneshwar for procurement of solar products and components.

Case Study 2: Advocacy support for Registration of Enterprise in Meghalaya

Monica Walling a newly identified incubatee from Meghalaya operates in an area hampered by poor connectivity, civil unrest, poor communication etc. When Monica tried to register her enterprise Green Tech Solar the government insisted that to register the entity the entrepreneur must have an Aadhar card. Several of the North Eastern states had boycotted the Aadhar Card and the entrepreneurs did not have the same.

In an effort to help the entrepreneurs register their business entity, the incubation undertook advocacy activities with EDI and other institutes and the government relented by providing interim and new identities similar to Aadhar and the incubatees were able to register themselves.

Case Study 3: Pilot Livelihood Projects

The technical and social capacity of the entrepreneurs were built in a effort to help them broaden their product range by piloting livelihood interventions. Prabhat Pradhan of Mukti Solar located in Nabarangpur district of Odisha was supported both financially and technically to implement solar powered refrigeration and sewing machine solutions. He was also guided in assessing the economic viability of these livelihood products for specific livelihood entrepreneurs. The solar-sewing machine solution was provided to the entrepreneur Sanjay Nag in Koraput district in Odisha and solar refrigeration for two small hotels run by Ghanshyam Pattnaik and Jaga Sarabu respectively.

Ecosystem Development for Energy Enterprises

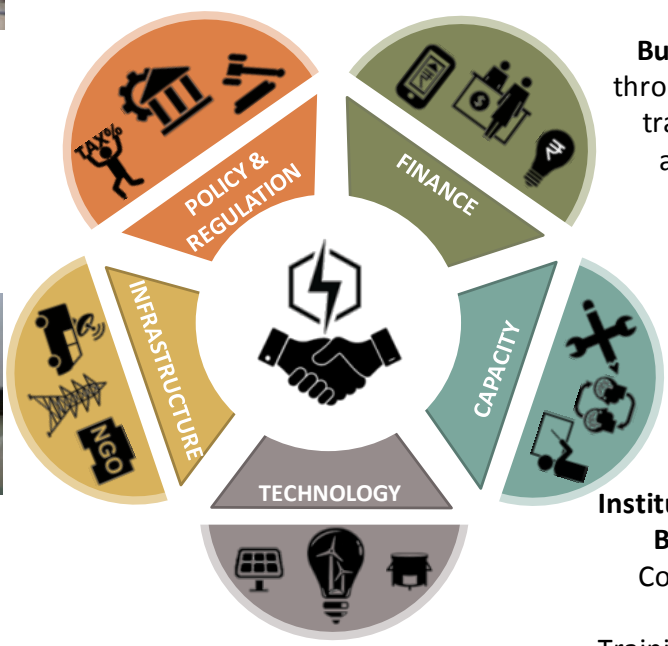
Since the early days of SELCO's operations it was evident that for energy services to reach the under-served it would not suffice if the focus was on technology alone but would require customised technology that made the energy solution appropriate, combined with affordable financing and efficient policy support. The facets of such an environment can range from suitable forms of enterprise financing, end-user financing, availability of appropriate technology, strong supply chain, availability of trained workforce, conducive policies and so on. This forms the foundation for innovating, testing, implementing and replicating sustainable solutions that meet the needs of the poor.

Engaging with Policy makers on district level energy planning, taxation policies, enterprise registration policies etc.

Building Financial Ecosystem through Banker Workshops, BC training, launching programs and schemes with banks on Renewable Energy etc.

Building the social fabric through **partnerships and linkages** with NGOs and community to replicate processes and products etc.

Institutionalizing Technical and Business Training in RSETIS, Collaboration with Centurion University – Odisha, Training programs with Regional Rural Training Centre – Meghalaya and EDI -Assam



Vendor Linkages and developing Innovative Livelihood Solutions such as solar powered loom, solar powered sewing machine, solar powered laptop-printer etc.

6

Photo on Top: Installation of Mr.Prabhat Pradhan of Mukti Solar in Nabarangpur Odisha
Photo Below: Installation of Mr.Joysing Teron of Hills Solar in Karbi Anglong in Assam

University Engagement Programme

Village and Slum Engagement: *Making students aware of ground realities of the rural and urban poor (in villages and slums)*

Holistic Thinking: *Emphasizing on the importance of socio-cultural, economic and environmental solutions*

Inter-disciplinary: *Inculcating the importance of working in multidisciplinary teams (technology + business + process)*

Social Design: *Social innovation and its relevance with practical design thinking processes and tools while working with underserved communities*

Background

Solutions developed towards improving the environment while maintaining focus on social and financial sustainability can transform communities. SELCO believes that without innovation and user centric approaches these solutions will remain short term and inefficient. For innovation to thrive there is a constant need for fresh thought processes, new energies and passionate minds.

The potential for students to engage, grow and learn by partnering with communities and working on global issues is immense and can be harnessed through SELCO's university engagement programme.

Case Study 1: Problem/Ideas

Problem statements were shared with students for understanding the context of different issues that could be worked up on. Two institutes were part of the Problem Statement Engagement Programme. Students from these two institutes identified problems and worked on six projects. They went through series of iteration process as the feedback from the end user and through trial and error method. The six projects they worked on are as follows:

- Solar powered pushcart
- Extraction of water through humid air
- Purification of biogas
- Arecanut tree climber
- Sonar water rover
- Antitheft mechanism for solar panels

The solutions students developed can be taken up forward and implemented in the communities.

Case Study 2: Inventing Green

An integrated approach to re-designing forms and functions by prioritizing material selection, manufacturing processes, types of stakeholders and supply chains for renewable energy components. The aim of the project is to convert renewable energy systems into truly sustainable energy systems by re-looking at the embodied energy of the entire system and such that it's not just the solar panel that is "green". Students through the project will discovering the feasibility of using alternative eco-friendly materials for product design and development in balance of systems* for renewable energy systems. This shall be done by using a specific example of a renewable energy system and dwelling into its components such as light fixtures, model mounting structures, battery boxes, street light poles, packaging of the systems etc.

Students could work on either of the following

- Life cycle analysis
- Material innovation
- Design innovation
- Understanding ecosystem + system design
- End products

Conclusion

In the last one year, SELCO Foundation has done numerous interventions that have led to the belief that the energy access field has much more potential for social and economic impact than just simple lighting. The learnings from last 12 months have challenged the solutions being provided to solve the 'off-grid' problem. Single interventions cannot be touted as bringing families from off-grid to on-grid: one needs to get away from making the grid as the central catalyst of poverty reduction.

The solutions, that need to be holistic, use sustainable energy as a catalyst to create a level playing field for the poor to prosper. Interventions need to happen at the household level, community and at the state level for to truly transform societies. The solutions in the report, bring to light the challenges of creating the eco-system for the poor. On the other hand, many of the interventions also demonstrate sustainability at different levels to other parts of society.

SELCO FOUNDATION

SELCO Foundation

#690, 15th Cross, JP Nagar 2nd Phase,
Bangalore - 560078

080 - 2649 3145

info@selcofoundation.org

www.selcofoundation.org

M/S RAMESH ASHWIN & KARANTH

CHARTERED ACCOUNTANTS
Firm Reg. No: 010680S

Partners
Ramesh B N (M.No : 015170) M9448468958
Ashwin B R (M.No : 214199) Mob: 9886415958
Prashanth Karanth (M.No: 214235) Mob: 9886282946

11-09-2017

INDEPENDENT AUDITOR'S REPORT

To the Trustees of Selco Foundation

We have audited the accompanying consolidated financial statements of Selco Foundation (Trust), which comprise the Balance Sheet as at March 31, 2017, and the Statement of Income and Expenditure and the Receipts and Payments Account for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation of these consolidated financial statements that give a true and fair view of the consolidated financial position, consolidated financial performance and consolidated Receipts and Payments of the Trust in accordance with accounting principles generally accepted in India. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the consolidated financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with the Standards on Auditing issued by the Institute of chartered Accountants of India. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Company's preparation and presentation of the consolidated financial statements that give a true and fair view in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by management, as well as evaluating the overall presentation of the financial statements

.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

M/s. RAMESH ASHWIN & KARANTH
F. R. No. 010680S
Chartered Accountants

No.37/E, 2nd floor, Next to Surana College.South End Circle,Basavanagudi, Bangalore-560004
Ph.No: 080-40918409 Email: rakca2004@gmail.com

M/S RAMESH ASHWIN & KARANTH

CHARTERED ACCOUNTANTS
Firm Reg. No: 010680S

Partners
Ramesh B N (M.No : 015170) M9448468958
Ashwin B R (M.No : 214199) Mob: 9886415958
Prashanth Karanth (M.No: 214235) Mob: 9886282946

Opinion

In our opinion and to the best of our information and according to the explanations given to us, the consolidated financial statements give a true and fair view in conformity with the accounting principles generally accepted in India:

(a) In the case of the Balance Sheet, of the state of affairs of the Trust as at March 31, 2017;

(b) In the case of the Income & Expenditure Account, of the Surplus for the year ended on that date; and

(c) In the case of the Receipts and Payments account, of the cash flows for the year ended on that date.

For Ramesh Ashwin & Karanth
Chartered Accountants
F.R No. 010680S

M/s. RAMESH ASHWIN & KARANTH
F. R. No. 010680S
Chartered Accountants

Prashanth Karanth
Partner
M No. 214235

No.37/E, 2nd floor, Next to Surana College.South End Circle,Basavanagudi, Bangalore-560004
Ph.No: 080-40918409 Email: rakca2004@gmail.com

SELCO Foundation
 # 690, 1st Floor, 15th Cross, 2nd Phase, JP Nagar, Bangalore 560078
Balance Sheet as at 31st March 2017

Particulars	Schedule	31/03/2017 Amount(Rs)	31/03/2016 Amount(Rs)
FUNDS AND LIABILITIES			
Non Corpus Fund	1	129,207,063	48,312,870
Total Liabilities		129,207,063	**48,312,870**
PROPERTY & ASSETS			
Fixed Assets	2	4,239,222	**1,359,556**
Current Assets, Loans & Advances			
Cash and Bank Balance	3	120,461,501	57,710,776
Current Assets	4	14,643,007	5,699,177
Less: Current Liabilities & Provisions	5	10,136,666	16,456,639
Net Current Assets		**124,967,841**	**46,953,314**
Total Assets		**129,207,063**	**48,312,870**

See accompanying notes to the financial statements

As per our report of even date

For SELCO FOUNDATION

For Ramesh Ashwin & Karanth
Chartered Accountants,

Trustee Trustee

Prashanth Karanth
Partner

Place : Bangalore
Date : 11/09/2017

M No. 214235
F.R No. 010680S

SELCO Foundation
 # 690, 1st Floor, 15th Cross, 2nd Phase, JP Nagar, Bangalore 560078
Income & Expenditure Account for the year ended 31st March 2017

Particulars	Schedule	31/03/2017 Amount(Rs)	31/03/2016 Amount(Rs)
INCOME			
Grant Received - Foreign	6	178,065,394	53,873,758
Donations - Local	7	71,238,975	43,671,687
Interest received		9,927,116	3,617,167
Interest received - other source		57,507	4,624
Professional income		667,784	91,500
Total Income		**259,956,776**	**101,258,736**
EXPENDITURE			
Project Cost	8	163,683,486	87,876,453
Research & Development Costs		4,210,192	1,700,587
Administration Costs	9	9,989,502	7,237,565
Depreciation	2	1,179,402	587,078
Total Expenditure		179,062,583	**97,401,683**
Surplus		80,894,193	3,857,053
Provision for Taxation		-	-
Surplus (Carried to Balance Sheet)		80,894,193	3,857,053
Significant Accounting Policies & Notes to Accounts	10		

See accompanying notes to the financial statements

As per our report of even date

For SELCO FOUNDATION

Trustee Trustee

Place : Bangalore
Date : 11/09/2017

As per Our report of even date
For Ramesh Ashwin & Karanth
Chartered Accountants,

M/s. RAMESH ASHWIN & KARANTH F.R. No. 010680S Chartered Accountants

Prashanth Karanth
Partner
M No. 214235
F.R No. 010680S

SELCO Foundation
 # 690, 1st Floor, 15th Cross, 2nd Phase, JP Nagar, Bangalore 560078
Receipts And Payments Accounts For The Year Ended 31.03.2017

Particulars	Amount(Rs)	Amount(Rs)
Opening Balance		
Cash		95,265
Bank		14,107,185
Receipts during the year		
Grant Received	178,065,394	
Donation Received	71,238,975	
Interest received - From Banks	9,601,101	
Interest received - From Other Sources	57,507	
Professional Income	747,034	
working capital advance received	500,000	
Net Receipts		260,210,011
TOTAL		**274,412,461**
Payments during the year		
Project Costs	178,746,952	
Administrative Costs	9,440,067	
Research & Development Costs	4,207,450	
Fixed Asset purchased	4,059,066	
TDS AY 2016-17	1,005,751	
Fixed Deposits	70,128,247	
Net Payments		267,587,533
Closing Balance		
Cash		24,876
Bank		6,800,052
Total		**274,412,461**

For SELCO FOUNDATION

Trustee Trustee

Place : Bangalore
Date : 11/09/2017

As per Our report of even date
For Ramesh Ashwin & Karanth
Chartered Accountants

Prashanth Karanth
Partner
M No. 214235
F.R No. 010680S

SELCO Foundation
Schedules Annexed to and forming Part of the Balance Sheet as at 31st March 2017
SCHEDULE 2

FIXED ASSETS

Particulars	Rate %	WDV as on 1-Apr-16	Additions during the year		Sale/ write off	Depreciation	WDV as on 31-Mar-17
			Used for more than 180 days	Used for less than180 days			
Computers	60%	409,369	795,279	329,673		821,693	712,628
Furniture & Fixtures	10%	474,385	715,036	84,134		123,147	1,150,408
Plant and Machinery	15%	369,295	40,912	77,439		67,341	420,305
Vechicle	15%	42,985		2,016,593		157,692	1,901,886
Camera	15%	63,524				9,529	53,995
TOTAL		1,359,558	1,551,227	2,507,839	-	1,179,402	4,239,222

For SELCO FOUNDATION

Trustee Trustee

M/s. RAMESH ASHWIN & KARANTH Chartered Accountants F. R. No. 013[illegible]0S

SELCO Foundation
690, 1st Floor, 15th Cross, 2nd Phase, JP Nagar, Bangalore 560078

Schedules forming part of the accounts

Particulars	31/03/2017	31/03/2016
Schedule 1		
Non corpus Fund		
Opening Balance	48,312,870	44,455,817
Add: Profit for the period	80,894,193	3,857,053
Total	129,207,063	48,312,870
Schedule 3		
Cash and Bank Balance		
Cash On Hand	4,176	39,475
Cash On Hand - Fcra	20,700	55,790
Bank Balance		
Syndicate Bank 02532010000030 Ujire	40,301	38,787
Syndicate Bank 04251010005966 C.A/C	24,317	24,431
Syndicate Bank A/C - 04252010066141	4,061,596	8,661,033
Syndicate Fcra A/C 04252010067978	1,944,715	3,629,451
Syndicate Bank Usaid 4252010076849	22,564	176,225
Syndiate Bank -04252010081750 (Giz)	299,447	565,264
Syndicate Bank 01112200020295 Manipal	2,282	9,110
State Bank Of India Sb A/C 36211961243	12,368	
Fixed Deposit Axis Bank	4,213,502	4,001,969
Axis Bank A/C 915010023357123	392,462	1,002,885
Syndicate Bank Fixed Deposit	106,916,364	38,292,800
FD Against Guarantees	2,506,707	1,213,557
Total	120,461,501	57,710,776
Schedule 4		
Current Assets		
Tax Deducted at Source	1,531,208	525,457
Loans and advances	5,672,113	3,186,437
Interest on FD - Receivable	1,328,981	1,002,966
Project Advances	4,803,704	248,066
Rent Advance	1,307,000	657,000
Debtors		79,250
Total	14,643,007	5,699,177
Schedule 5		
Current Liabilities		
Tour & Travelling		11,389
Audit fees	115,640	32,481
TDS - Salary	215,663	71,081
TDS Rent 194 I	21,560	14,700
TDS - Professional	291,321	126,655
TDS - Contractor	13,176	16,965
ESIC payable	15,530	9,255
Professional Tax	12,450	7,650
EPF payable	237,596	148,971
Rent payable	275,905	175,615

For SELCO FOUNDATION

Trustee

Trustee

M/s. RAMESH ASHWIN & KARANTH
F. R. No. 010680S
Chartered Accountants

Particulars	31/03/2017	31/03/2016
Salary payable	2,274,987	1,395,810
Security Deposit	108,440	89,650
Creditors for Expenses	547,786	120,866
Consultation, Interns, Service Fees	1,084,047	472,489
Project exps payable	3,310,099	10,774,472
Provison for Expenses	17,896	22,270
Provison for Gratuity	816,004	316,142
Provison for LTA	240,635	200,179
Current liablity-Advance repayable		2,000,000
Provison for Leave encashment	537,932	450,000
Total	10,136,666	16,456,639
Schedule 6		
FCRA Grant		
Asha For Education	943,000	
Conservation Action Trust- Cat	2,802,261	1,200,000
Climate Parliament		182,000
Doen Foundation	33,215,000	4,089,606
Giz	12,394,655	5,403,000
Good Energy Foundation - Clean - Delhi	8,585,914	
Good Energy Foundation - High Risk Innovation -Hace	37,325,000	
International Institute For Sustainable Development	102,690	
Lemelson Foundation	6,003,900	11,297,158
Lemelson Foundation -Technology	22,526,289	
Marilyn Smith	164,173	
Meyer Burger Technology	673,811	
Mott Foundation	3,363,827	9,936,838
Oak Foundation	5,592,012	
Renewable Energy And Energy Efficiancy Partnership	5,762,420	1,139,698
S3IDF		1,623,000
Shakti Sustainable Energy- Incubation	9,538,000	
Shakti Sustainable Energy- TOT	3,722,500	
Societe Generale Global Solution Centre Pvt Ltd	1,800,000	
The David And Lucile Packard Foundation	18,094,299	8,070,178
Thomson Reuters International Services Pvt Ltd	1,695,191	
USAID	3,683,692	5,689,450
Women'S Rehabilitation Group	76,759	
World Wide Fund For Nature - India (Wwf)		1,933,750
Armstrong Energy Global Foundation		1,027,144
First Advantage Global Op C P L		750,000
First Advantage Private Limited		750,000
Rahman Bin Hasbardi- Singapore		48,250
Rotary Club Of Corpus Trust		633,800
Solarspring Gmbh		99,886
Total	178,065,394	65,563,490
Schedule 7		
Local Donations :		
TATA Education and Development Trust	17,000,000	
THE J.R.D TATA TRUST	8,128,000	
Menda Foundation	33,556,325	
Mineral Enterprises Limited (MEL)	7,816,400	
Others local contribution	4,738,250	
Total	71,238,975	-
Schedule 8		
Project Cost:		
Anganavadi Project	149,829	
Basic Energy Access	130,427	
Community Program	442,017	

For SELCO FOUNDATION

Trustee

Trustee

M/s. RAMESH ASHWIN & KARANTH
F. R. No. 010680S
Chartered Accountants

Particulars	31/03/2017	31/03/2016
Integrated Energy Centre	2,085,561	
Inventing Green Project Expenses	4,467,161	
Invention Education Program	1,482,152	
Livelihood Programs	6,931,979	
Maker Space	717,250	
Meeting Expenses- Projects	393,030	
Monitoring and Evaluation	131,249	
New Lab Setup	959,808	
Professional Fees - Project	10,260,728	
Renewable Energy for FPO	1,600,000	
Renewable Energy for Livelihood/households	3,166,400	
Replication of Programs	1,222,832	
Solar Digital Education System	24,770,206	
Solar Health Interventions- PHC, Mobile	8,756,961	
Solar Lab Setup -Industrial Training Institutes	6,483,578	
Solar Lighting System	8,600,924	
Solar Mini Grid Project	3,862,796	
Solar Mission Project_ Low Income HH	2,071,846	
Solar Portable Pump Project	398,815	
Solar Projects	4,978,632	
Staff Managerial Capacity Building	2,351,983	
Stipend for Interns	600,130	
Training Expensess- Financial Institutions	3,556,457	
Training of Coopertive Socitey	1,200,000	
Transportation Charges - Project	108,090	
Urban Community Lab Projects	1,195,425	
Water Purification	2,154,583	
Light for Education Program	3,600,348	
Renewable Energy- Awarmes Program	50,032	
Service Charges -Project	62,020	
Support - Agriculture/ Distress Farmers	16,500,000	
Tribal Community Lab Projects	845,198	
Travel, Boarding Costs- Project	12,390,342	
Project HR	25,004,697	
Total	163,683,486	
Schedule 9		
Administrative Expenses:		
Rent	3,216,334	2,217,346
Insurance for office furniture	45,582	37,899
Electricity Charges	222,156	174,111
Travel, Boarding & Conveyance costs	226,692	343,683
Transportation charges	5,750	10,135
Documentation charges	258,924	19,815
Communication Costs	1,006,288	511,306
Postage and Courier	96,095	59,250
Repairs & Maintenance	101,777	29,273
Office Maintenance	897,521	711,849
Vehicle Maintenance	177,981	15,001
Printing & Stationery	433,388	654,472
Professional Fees	235,587	232,950
Service Charges	204,067	135,346
Audit fees	146,691	43,259
Rates, Taxes & Fees	7,500	7,500
Bank Charges	75,260	44,927
Miscellaneous Expenses	2,951	1,657
Assets write off		52,573
Salaries	1,753,995	944,623
Leave encashment	199,899	540,442
Mediclaim insurance	268,098	174,665
Staff welfare	280,044	167,868
Recruitment Expenses	64,811	32,943
Meeting expenses	4,145	5,081
Training expenses	57,967	69,593
Total	9,989,502	7,237,565

For SELCO FOUNDATION

Trustee

Trustee

M/s. RAMESH ASHWIN & KARANTH
F.R.No. 010680S
Chartered Accountants

Schedule – 10

Significant Accounting Policies

a) **System of accounting**: The Association follows mercantile system of accounting (barring certain exceptions as noted in significant accounting policies on Revenue Recognition and the books of accounts are prepared on a going concern concept.

b) **Fixed Assets:** Fixed assets are valued at cost less depreciation.

c) **Depreciation**: Depreciation has been provided on reducing balance method as per Income Tax Act 1961.

d) **Income Tax**: Since the trust is registered under section 12A of the Income tax act 1961 the income earned by the trust is not liable for Tax. As such no tax provision has been made in the books of accounts.

e) **Revenue Recognition:**

- Donations, Grants (both inland and foreign) and Interest on project loan are recognized on receipt basis.
- Interest on bank deposit and professional income is recognized on accrual basis.

Notes on Accounts

a) **Employee Retirement Benefits**

Employee benefits include provident fund, gratuity, Leave Encashment and ESI.

Defined contribution plan:

The trust's contribution to provident fund and ESI are considered as defined contribution plan and are charged as an expense as they fall due based on the amount of contribution required to be made and when the services are rendered by the employees.

Defined benefit plans:

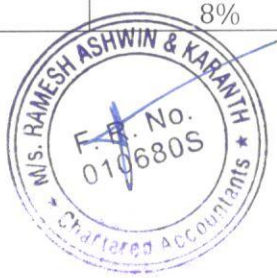
For defined benefit plans in the form of gratuity fund & Leave encashment, the cost of providing benefits is determined using the Projected Unit Credit (PUC) actuarial method, with actuarial valuations being carried out at balance sheet date. Actuarial gains and losses are recognized in the Statement of Profit and Loss in the period in which they occur. Past service cost is recognized immediately to the extent that the benefits are already vested and otherwise is amortized on a straight-line basis over the average period until the benefits become vested. The retirement benefit obligation recognized in the Balance Sheet represents the present value of the defined benefit obligation as adjusted for unrecognized past service cost, as reduced by the fair value of scheme assets.

Trust adopted Accounting Standard 15 "Employee Benefits" ('AS 15') as specified in Rule 3 of the Companies (Accounting Standard) Rules, 2006:

A. Gratuity

Particulars	31 March 2017 (Rs.)	31 March 2016 (Rs.)
Change in present value of obligation		
Present value of obligation as at the beginning of the year	3,16,142	-
Current service cost	4 27,523	-
Interest cost	23,711	-
Actuarial (gain) / loss	48,628	-
Benefits paid	-	-
Present value of obligation as at the end of the year	**816,004**	**3,16,142**
Change in plan assets		
Plan assets at the beginning of the year	-	-
Expected return on plan assets	-	-
Contribution by the Trust	-	-
Benefits paid	-	-
Actuarial gain / (loss)		-
Plan assets at the end of the year	-	-
Liability recognized in the financial statement	499,862	-
Expense recognized in the Statement of Profit and Loss		
Current service cost	**427,523**	-
Interest cost	23,711	-
Actuarial (gain) / loss	48,628	-
Expense recognized in the Statement of Profit and Loss	**499,862**	-
Constitution of plan assets		
Other than equity, debt, property and bank a/c	**Not applicable**	Not applicable
Funded with LIC	**Not applicable**	Not applicable

Particulars	31 March 2017 (Rs.)	31 March 2016 (Rs.)
Main actuarial assumptions		
Discount rate	7.50%	8.00%
Expected future salary increase*	6.00%	6.00%
Expected rate of return on plan assets	0.00%	0.00%
Demographic assumptions(Withdrawal and Mortality Rate)		
Withdrawal rates, based on age (per annum)		
Particulars	As on	
	31.03.2017	**31.03.2016**
Withdrawal rate:		
Up to 25 years	8%	8%

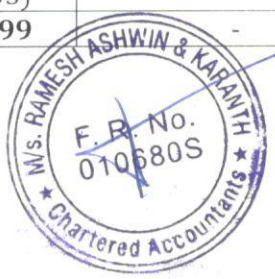


26 to 30 years	7%	7%
31 to 35 years	6%	6%
36 to 40 years	5%	5%
41 to 45 years	4%	4%
46 to 50 years	3%	3%
51 to 55 years	2%	2%
Above 56 years	1%	1%

Particulars	For the year ended 31 March 2017	For the year ended 31 March 2016
Present value of obligation at the end	**816,004**	-
Fair value of plan assets at the end	-	-
Net liability recognized in Balance Sheet	**816,004**	-
Experience adjustment on plan liabilities (loss) / gain	-	-
Experience adjustment on plan assets (loss) / gain	-	-

B. Leave Encashment

Particulars	31 March 2017 (Rs.)	31 March 2016 (Rs.)
Change in present value of obligation		
Present value of obligation as at the beginning of the year	4,50,000	-
Current service cost	1 82,183	-
Interest cost	29,551	-
Actuarial (gain) / loss	(11,835)	-
Benefits paid	(111,967)	-
Present value of obligation as at the end of the year	**537,932**	**4,50,000**
Fair value plan assets as at the beginning of the year		
Acquisition Adjustment	-	-
Actual Return on Plan Assets	-	-
Employer's Contributions	111,967	-
Employee's Contributions	-	-
Benefit Paid	(111,967)	-
Fair Value of Plan Assets as at the End	-	-
Liability recognized in the financial statement		-
Expense recognized in the Statement of Profit and Loss		
Current service cost	**182,183**	-
Interest cost	29,551	-
Actuarial (gain) / loss	(11,835)	-
Expense recognized in the Statement of Profit	**199,899**	-



and Loss		
Constitution of plan assets		

Particulars	31 March 2017 (Rs.)	31 March 2016 (Rs.)
Main actuarial assumptions		
Discount rate	7.5%	8.%
Expected future salary increase*	6.%	6.%
Expected rate of return on plan assets	-	-
Demographic assumptions(Withdrawal and Mortality Rate)		
Withdrawal rates, based on age (per annum)		

Particulars	As on	
	31 March 2017 (Rs.)	31 March 2016 (Rs.)
Withdrawal rate:		
Up to 25 years	8%	8%
26 to 30 years	7%	7%
31 to 35 years	6%	6%
36 to 40 years	5%	5%
41 to 45 years	4%	4%
46 to 50 years	3%	3%
51 to 55 years	2%	2%
Above 56 years	1%	1%

Particulars	31 March 2017 (Rs.)	31 March 2016 (Rs.)
Present value of obligation at the end	**537,932**	**4,50,000**
Fair value of plan assets at the end	-	-
Net liability recognized in Balance Sheet	**537,932**	**4,50,000**
Experience adjustment on plan liabilities (loss) / gain	-	-
Experience adjustment on plan assets (loss) / gain	-	-

Signatures for Schedule 1 to 10

For SELCO FOUNDATION

Trustee Trustee

Date: 11.09.2017
Place: Bangalore

For Ramesh Ashwin & Karanth
Chartered Accountants,
F.R No. 010680S

Prashanth Karanth
Partner
M. No. 214235