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State Bank of India

Innovative Solar Projects

A collaboration between
SELCO Foundation, SELCO Solar Light Private Ltd.,
Syndicate Bank, Karnataka Vikas Grameen Bank, State
Bank of India



Innovative Solar Projects

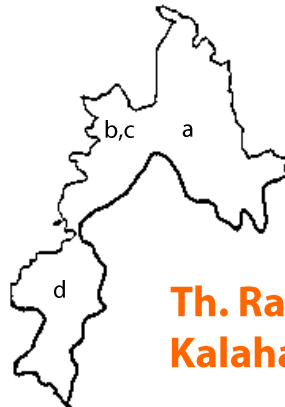
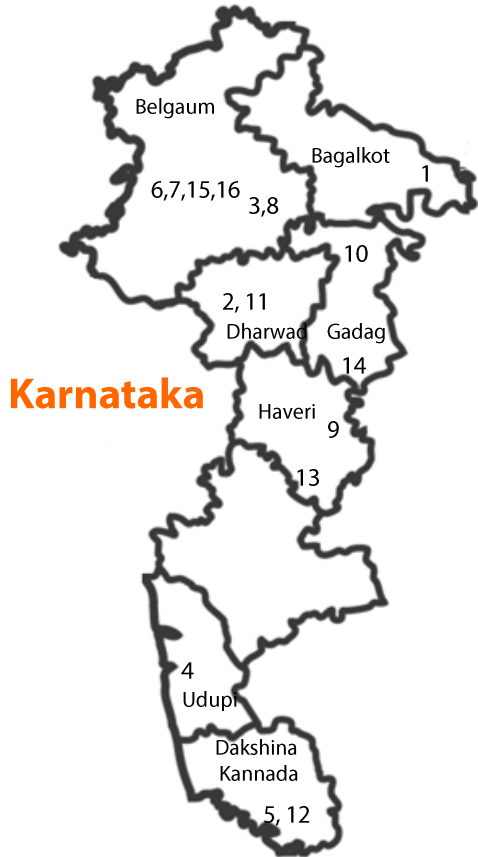
Geographical Location



1. Bagalkot Ilkal Weavers
2. Hubballi Tabala Maker
3. Belgavi Solar Fridge
4. Udupi Integrated Energy Center
5. Mangalore Mobile Fast-food Center
6. Belgavi Solar Thermal For Enterprise
7. Lighting For Jaggery Manufacturing
 - a. Laptop –Printer, Dumerpadar
 - b. Laptop –Printer, Badchatrang
 - c. Sewing Machine, Badchatrang



8. Inchal Home System
9. Haveri Home System
10. Gadag Home System
11. Hubballi CC-TV Camera
12. Mangalore Home System
13. Haveri Slum Home System
14. Nagavi, Gadag Home System
15. Belgavi Solar Thermal For Household
16. Belgavi Solar Inverter For Household
 - d. 500 Household Lighting



Message from KVGB



Society is highly dependent on electrical energy particularly life is at a standstill without electricity. Energy crisis is being faced by the country for a very long time and gap is still widening. Due to which, the world's attention has been diverted to alternative sources of energy particularly 'SOLAR ENERGY'.

Karnataka Vikas Grameena Bank, a leading Regional Rural Bank of the country has started financing Solar Lighting systems way back in 1995. The Bank is proud to inform that it was the first Financial Organization to associate with Dr. Harish Hande, the Magsaysay Awardee in the field of Solar Energy ever since 1994.

It is a matter of pride that KVGB has financed more than 53,500 lighting units involving an amount of Rs 80.00 crore. 127 branches out of 600 are running on solar power and is planning to bring more number of branches under the same during 2016-17. The Head office of our Bank is set to use its own electricity through rooftop solar. More so Bank has converted more than 120 villages as 100% Solar villages and aimed to increase the same to 200 villages during 2016-17.

This book contains many such success stories and I hope that people will be inspired by reading this book and opt for solar energy.

- Mr. Ashok Reddy Nukala,
Chairman, KVGB



Message from SELCO

Poverty eradication and sustainable energy go hand in hand. Critical catalyst is making that link happen is financing. Karnataka Vikas Grameena Bank, over the last two decades has proven that very linkage in multiple ways. Further more by doing these 16 innovative livelihood linked projects, together KVGB and SELCO have delved deeper into the economic strata of the society: breaking the myth that poorer households cannot avail the benefits of solar energy. With more than 300 million people in our country lying below the poverty line, this project offers a hope and the motivation for all of us to create many more solutions involving sustainable energy and finance: two critical pillars in the development of India.

- Dr. Harish Hande, SELCO





Badchatrang Laptop – Printer Kiosk

Solar for Livelihood



Need:

Mr. Daneshwar Majhi an enterprising youth from Badchatrang village of Kalahandi district in Odisha wanted to set up a shop to provide photocopying, printing facilities to people of his gram panchayat. People in the region had to travel 70 kms one way just to get a Rupee one worth of photocopying. In 2016 SELCO Foundation met with Daneshwar to understand his aspirations, but it was realized that the region did not receive reliable power supply to establish this shop.

Solution:

SELCO Foundation and Bhawanipatna branch of Syndicate Bank have supported Daneshwar to set up his shop through a MUDRA loan.

Impact:

The entrepreneur has set up his shop and is providing valuable services to community. He is also providing videographer services and earned a profit of Rs.2,000 – 3,000 in his first month of operation.

Financial Details	Technical Details of a system
Total Project Cost : Rs.1,71,500	Solar module: 75 Wp, 3 nos
SELCO Grant (Margin Money) Rs.25,000	Solar Battery: 150 Ah
SELCO Risk Fund: Rs.35,000	Invertor : 850 VA
Entrepreneur Contribution: Rs.70,000 (for shop)	Laptop
Syndicate Bank Loan: Rs. 76,500	Printer: 2 nos.
Interest/Tenure: 9.68%, 60 months	•Epson L 360
	•Epson PM245
	Camera

Highlights:

SELCO Foundation provided a risk fund to the bank to build the banker confidence in financing the project and also provided margin money support..



Need:

Thumaul Rampur block in the Kalahandi district is a remote region that is deprived of several basic facilities such as reliable access to electricity, water, road, communication, transportation etc. Despite the grid being connected to several households there is no reliable availability of electricity and - housed within a forest reserve - repairs to the grid are not made in time. This results in households not having electricity for weeks or months, especially during the monsoon.

Solution:

SELCO Foundation joined with Bhawanipatna branch of Syndicate Bank led by Mr.Naveen Kumar Biswal and a solar enterprise Mukti Solar led by Mr.Prabhat Pradhan to support 500 households with home lighting system.



Impact:

The households enjoy a better quality of life and stronger savings and bank relations.



Financial Details	Technical Details (per sys)
Total Project Cost for 500 sys: Rs.41,85,000	Solar module: 20 Wp
SELCO Grant: Rs.12,50,000	Solar Battery: 20 Ah
SELCO Risk Fund: Rs.13,42,500	Luminary: 3.5 W LED, 2 nos.
Margin Money: Rs.2,50,00	
Syndicate Bank Loan: Rs. 26,85,000	

Highlights:

- The households were formed into JLGs to enable the culture of savings and bank financing was then provided to the households.
- Since the bank branch is 70kms away, the bank is planning to open a kiosk-banking counter to cater to these households.



Badchatrang Solar Sewing Machine

Solar for Livelihood



Need:

Mr.Ramsingh Kabadi is th owner of a tailoring shop in Badchatrang village of Kalahandi district in Odisha. His business was performing well and he was earning close to Rs.6,000 – 7,000 per month. But he was unable to meet the increasing demand as he was unable to expand his business and absence of electricity prevented him from working beyond 4 -5 pm in the evening.

Solution:

SELCO Foundation and Bhawanipatna branch of Syndicate Bank led by Mr.Naveen Kumar Biswal have supported Mr.Ramsingh to purchase an energy efficient solar powered sewing machine through a MUDRA loan. The system was installed by Mr.Prateek Rath’s team from ABHA Innovations.

Impact:

The entrepreneur has employed another person and increased from one to two sewing machines. He is also strongly building his relationship with the bank to enhance his credit worthiness.

Financial Details	Technical Details
Total Project Cost : Rs.24,185	Solar module: 60 Wp
Margin Money: Rs.5, 000	Solar Battery: 40 Ah
Syndicate Bank Loan: Rs. 19,185	PMDC Motor : 60 W
Interest/Tenure: 9.68%, 28 months	Sewing Machine

Highlights:

The bank provided the loan considering the asset purchased form the loan as a primary security without taking any other collateral.



Need:

Mr.Haru Majhi an enterprising youth from Dumerpadar village of Kalahandi district in Odisha wanted to set up a shop to provide photocopying, printing facilities to people of his gram panchayat. People in the region had to travel 70 kms one way just to get a Rupee 1 worth of photocopying. In 2016 SELCO Foundation met with Haru to understand his aspirations, but it was realized that the region did not receive reliable power supply to establish this shop.

Solution:

SELCO Foundation and Th.Rampur branch of State Bank of India have supported Haru Majhi to set up his shop through a MUDRA loan.

Impact:

The entrepreneur has set up his shop and is providing valuable services to community. He has also purchased a camera to provide photography services and help people in filling of panchayat forms and applications.

Financial Details	Technical Details of a system
Total Project Cost : Rs.1,82,475	Solar module: 75 Wp, 3 nos
SELCO Grant (Margin Money) Rs.25,000	Solar Battery: 150 Ah
SELCO Risk Fund: Rs.45,000	Invertor : 850 VA
Entrepreneur Contribution: Rs.71,460 (for shop)	Laptop
SBI Loan: Rs. 86,015	Printer: 2 nos.
Interest/Tenure: 12%, 60 months	•Epson L 360 •Epson PM245 Camera

Highlights:

SELCO Foundation provided a risk fund to the bank to build the banker confidence in financing the project.



Need:

Ilkal is located in the Bagalkot district of Karnataka and in the outskirts of the town, live a community of 300 households most of whom are the famous Ilkal handloom sari weavers. In 2013 SELCO first met these home based enterprises who were unelectrified which affected their standard of living and work. The entrepreneurs income was Rs.3,500-Rs.5000 per month earning Rs.200 per sari which the family took 2-3 days to weave. They do not have access to public transportation facility or clean drinking water.

Solution:

The Bagalkot branch of SELCO and Ilkal branch of KVGB have supported 80 households with lighting systems during 2014 and 2015.

Impact:

The entrepreneurs are able to weave a sari in a day, providing them flexible and longer work hours and children study better in the evening.

Financial Details	Technical Details of a system
Total Project Cost for 80 sys: Rs.7,55,000	Solar module: 18 Wp
SELCO Grant: Rs.80,000	Solar Battery: 15 Ah
SELCO Risk Fund for 12 sys: Rs.36,000	Luminary: 2.4 W, 2 no.
Margin Money: Rs.80,000	
KVGB Loan: Rs. 5,95,000	
Interest/Tenure:12.50%, 60 months	

Highlights:

To address the challenge of insufficient collateral two Joint Liability groups of 5 members each was formed for the loan and for 12 end-users a risk guarantee fund was provided by SELCO. For the remaining end-users KVGB has extended credit without insisting on collateral.



Need:

The Aanikeri slum in Haveri district is home to 32 families who live on less than Rs.150 a day which they earn making broomsticks, selling embroidery work, hair pins and other small consumables. They live on government land in temporary houses, depending on kerosene for lighting and without access to clean water or structured sewage system.

Solution:

Haveri branch of SELCO and the Hamsabhavi Branch of KVGB led by Mr.Bhajantri supported 30 households with lighting system.

Impact:

The women entrepreneurs produce more broomsticks and their income has increased. The family also enjoys a better quality of life and stronger savings and bank relations.

Financial Details	Technical Details of a system
Total Project Cost for 30 sys: Rs.2,10,000	Solar module: 12 Wp
SELCO Grant: Rs.22,500	Solar Battery: 15 Ah
SELCO Risk Fund for 30 sys: Rs.90,000	Luminary: 3.6 W
Margin Money: Rs.22,500	
KVGB Loan: Rs. 1,65,000	
Interest/Tenure:12.50%, 24 months	

Highlights:

The families earn daily wages, to help them repay the loan KVGB has assigned to them pigmy agents who visit their homes to collect the loans on a daily basis. This has also helped some families to develop a savings culture.



Need:

The 40 year old Nehru Nagar Saralabettu slum in Udupi has over 200 families, many of whom work as contract laborers in the hospitality sector of educational institutions. They live on disputed land with no ownership rights in poorly ventilated homes. Without connection to the electric grid they charge torch batteries at their work place, when this was prohibited they were forced to depend on kerosene. Living without proper sanitation facilities they also face severe social prejudice.

Solution:

Udupi Branch of SELCO, Rural Community Lab of SELCO Foundation implemented an Integrated Energy Center (IEC), supported by Mr.K.R.Upadhy and his team from the KVGB Indrali branch. The entrepreneur Mr.Basawaraj operates a centralized battery and mobile charging station powered by solar. Presently 48 houses benefit from home lighting. Households charge their batteries in the day which powers the lights in their homes during the evening.



Impact:

The houses are spending Rs.200 per month for lighting which is Rs.100-150 lesser than before. Mr.Basawaraj makes a profit of approx Rs.7,000 per month and is slowly expanding.

Financial Details		Technical Details
Total Project Cost : Rs.1,22,000		Solar module: 75 Wp, 1 no 60Wp, 4 no.
SELCO Grant:	Rs.4,600	Solar Battery: 60 Ah,100 Ah 1 no.
Margin Money:	Rs.15,000	Luminary and battery set: 48 no.
KVGB Loan:	Rs. 1,02,400	
Interest/Tenure:	12.50%, 36 months	Mobile charging : 10 per day



Highlights:

The project has led to development of micro-entrepreneurship and has paved way for other social interventions by enabling community cohesion and trust.



Mangalore Mobile Fast-Food Center

Comprehensive Solar Solutions for Livelihood



Need:

Mr. Arun Suvarna is an enterprising 33 year old who after working in a hotel in Pune wanted to start a similar business in his home town in Kateel, Mangalore. He decided to launch the "Taste of Coasts" a mobile fast-food center to provide "Karnataka" delicacies. He was challenged by the need for a reliable and affordable power source to run the kitchen.

Solution:

Mangalore branch of SELCO and the Kateel KVGB team led by Mr. A.V. Bhat have enabled the solar powering of the mobile bus that houses the kitchen. The solar system powers 5 lights, 3 exhaust fans, 2 DC pedestal fans and a mini fridge (Godrej Chotukool).

Impact:

The entrepreneur provides fast food services in multiple locations and is most popular among college students.

Financial Details		Technical Details	
Total Project Cost :	Rs.1,00,000	Solar Module:	75 Wp, 3 no.
Margin Money:	Rs.20,000	Solar Battery:	120 Ah, 2 no.
KVGB Loan:	Rs. 80,000	Luminaries:	10W, 5 no.
Interest/Tenure:	12.50%, 36 months	DC fan:	18 W, 2 no.
		DC fridge:	1 no.

Highlights:

The Solar powered Mobile Fast Food center has been an innovative project for both SELCO and KVGB and has popularized solar energy among the inhabitants of Kateel.



Belgavi Solar Fridge

Solar Solution for Livelihood



Need:

Shankarappa Siddappa Gorbhal, age 60 years, is an entrepreneur running a small restaurant “Shree Veerabadreshwara” for the past 15 years in the Hooli village of Belgavi district. The family-run enterprise earned a monthly income of Rs.10,000 -15,000. But Shankarappa could not expand his product range due to severe power-cuts making it difficult to store perishables.

Solution:

The SELCO Bailhongal branch and the Hooli Branch of KVGB led by Mr.Santosh Giriyanavar have supported the project. The SELCO Foundation has provided an interest subsidy through the Entrepreneur Fund program to create a favorable loan repayment installment for the entrepreneur and hedge the seasonal fluctuations in the revenue.



Impact:

The community has access to chilled milk, cold drink, butter-milk, lassi etc from Shankarappa’s restaurant. His incremental monthly profit from the fridge alone is roughly Rs.4,000 and is planning to expand his offerings by selling ice-cream, flavored milk etc and purchase a solar powered vending machine.

Financial Details		Technical Details	
Total Project Cost :Rs.1,12,000		Solar Module: 300 Wp	
SELCO Interest Subsidy: Rs.21,125		Solar Battery: 110Ah, 2 no.	
Margin Money:	Rs.22,000	Solar Fridge: 240 Its	
KVGB Loan:	Rs. 90,000		
Interest/Tenure:	12.50%, 60 months		

Highlight:

This innovative livelihood intervention has increased business profitability. The interest subsidy has been structured such that the entrepreneur is able to repay the loan from the incremental revenue from the sale of products in the fridge across seasons.





Need:

Mr.Gurunath Alagavadi lives with his family in outskirts of the Kusugal town in Dharwad district. His home is located at a distance from the main habitation making it prone to theft and attacks by delinquents in the region. The family installed closed circuit television cameras (CC-TV), but power cuts of 6-8 hours each day made the effort futile. The power outages also resulted in poor visibility outside the home in the evening, increasing the family's vulnerability.

Solution:

The Hubballi branch of SELCO designed a solar power generation system that provides lighting, recording of footage and energizes four CC-TV cameras. Mr.R.D.Holalakeri of the Kusugal branch of KVGB supported the project.

Impact:

- The family has benefitted from better security and visibility.
- The solar system enables 24*7 recording of the house peripheral.
- Throwing open new vistas for bank lending.

Financial Details	Technical Details
Total Project Cost: Rs. 32,000	Solar module: 50 Wp, 2 no.
Margin Money: Rs. 7,000	Solar Battery: 110 Ah
KVGB Loan: Rs. 25,000	Luminary: 2.4 W, 1 no.
Interest/Tenure: 12.50%, 36 months	3.6 W, 1 no.

Highlights:

For SELCO it was a unique experience in powering a CC-TV system expanding the relevance of clean energy in the rural context. Despite the loan amount being small, the bank came forward to support a critical need of this household.



Need:

The 35 families in Mullottu, Kateel in Mangalore live in a remote unelectrified region. They earn Rs 300 – Rs.400 each day working as casual laborers. In the absence of land documents they were unable to obtain grid access and instead used candle, kerosene and oil for lighting spending Rs 200-300 per month for the same.

Solution:

The Mangalore branch of SELCO and the Kateel KVGB branch led by Mr.A.V.Bhat have supported 12 houses with lighting and mobile charging solutions. A risk fund was provided by SELCO as collateral for the bank lending to build banker confidence on this community that has never banked before.

Impact:

The households have access lighting encouraging uptake of new home-based livelihoods and mobile charging provides them with better communication facility.



Financial Details	Technical Details
Total Project Cost 12 sys : Rs.1,73,300	Five Houses: 2 Light system Module: 18 Wp Battery:15 Ah Luminaries: 3.6W, 5W, 1 no.
SELCO Risk Fund for 11 sys: Rs.50,000	
SELCO Grant for 11 sys: Rs.10,000	Two Houses: 2 Light & Fan sys Module: 40 Wp Battery: 60 Ah Luminaries: 7W, 2 no. DC fan:1
Margin Money: Rs.2,000	Five Houses: 4 Light system Module: 30 Wp Battery: 30 Ah Luminaries: 2.4W, 2 no. 7W & 5W, 1 no.
KVGB Loan: Rs. 1,61,300	
Interest/Tenure: 12.50%, 36 months	

Highlights:

The bank has appointed a pigmy agent who collects the repayments and enables the households to develop a savings culture. The project has also enabled banking interactions for these families who previously did not even have bank accounts.



Belgavi Solar Thermal for Enterprise

Mr.Mamu Sheik owns a marriage hall and wanted to opt for solar water heating. The Bailhongal branches of KVGB led by Mr.Kamat and SELCO have together supported the enterprise with solar thermal application in the form of a solar water heater solution.

Financial Details	Technical Details
Total Project Cost : Rs.60,000	500 liters per day Evacuated tube collector based system
Margin Money: Rs.15,000	
KVGB Loan: Rs. 45,000	
Interest/Tenure: 12.50%, 36 months	



Belgavi Solar Inverter for Household

Mr.S.S.Madivalar wanted to adopt solar by investing in a solar inverter system. The Bailhongal branches of KVGB led by Mr.Kamat and SELCO have together supported the household for setting up of the inverter system.

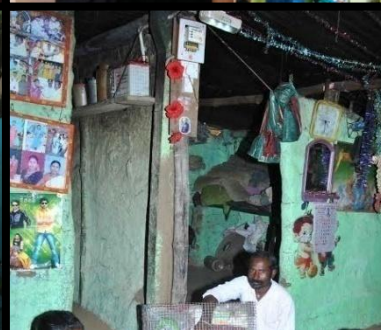
Financial Details	Technical Details
Total Project Cost : Rs.87,500	Solar Module: 230 Wp, 2 Solar Battery: 150 Ah, 2 Inverter : 800 VA
Margin Money: Rs.21,875	
KVGB Loan: Rs. 65,625	
Interest/Tenure:12.50%, 60mnths	



Belgavi Solar Thermal for Household

Mr.Lakshman Vari wated to install solar lighting and water heating system for his home. A six light system costing Rs.29,500 and water heating of 200 liters per day capacity costing Rs.25,900 was provided to the household. The Bailhongal branches of KVGB led by Mr.Kamat and SELCO have together supported the household.





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