

About the Project:

BVT is implementing a project to provide and improve livelihoods of rural entrepreneurs through decentralized solar energy solutions in Karnataka sponsored by Small Industries Development Bank of India (SIDBI) under its Swavalamban Challenge Fund (SCF) Window-I.

The major objective of the project is to identify and facilitate access to solar energy based livelihood solutions namely Roti Rolling, Dc Fridge and Sewing Machine generate to about 150 potential /aspirant entrepreneurs at Haveri, Koppal, Raichur and Yadgir districts of Karnataka.

To achieve the above objective, as per the operational modalities, we are planning to organize about 36 different awareness cum training programs about these 3 livelihood solutions and generate interest / leads at the operational areas for facilitating access to solutions/ installations. The various programs proposed are, Awareness cum Training Programs for Partner organization, Awareness programs for Financial institutions and Skill training for transforming the livelihoods into sustainable entrepreneurs. The project will be implanted in association with Service provider – Selco Solar Light Ltd , local partners organizations- NGOs, Financial institutions, MFIs, SHGs, Govt. departments and other stakeholder of the sector.

About SIDBI & Swavalamban Challenge Fund (SCF)

Small Industries Development Bank of India (SIDBI) set up on 2nd April 1990 under an Act of Indian Parliament, acts as the Principal Financial Institution for Promotion, Financing and Development of the Micro, Small and Medium Enterprise (MSME) sector as well as for co-ordination of functions of institutions engaged in similar activities.

SIDBI has always been actively engaged in welfare and promotion of MSMEs through various means viz. refinance, direct finance, bill discounting, venture capital, collateral guarantee etc. Since its formation in 1990, SIDBI has been impacting the lives of citizens across various strata of society through its integrated, innovative and inclusive approach, be it traditional domestic industry, small, bottom-of-the-pyramid entrepreneurs, medium enterprises to high-end knowledge-based industries and export promotions. With this intend and the aim to fuel economic activities and promote development by sourcing and implementing innovative development solutions in the country, SIDBI has introduced the Swavalamban Challenge Fund.

SCF is a competitive mechanism to crowd-source innovative and outcome driven solutions to development challenges. It aims to provide financial support to non-profit organizations/educational institutions/social start-ups which have focus on sustainable livelihood, financial inclusion, and access to financial services and promoting the culture of entrepreneurship. SCF is also open to projects that innovate, create jobs, leverage investments and markets so as to promote resilience and sustainable incomes, in these testing times.

About Bharathiya Vikas Trust, Manipal

About BVT

Bharathiya Vikas Trust (BVT) was established during 1978 by a great Visionary, Padma Bhushan Sri T.A. Pai , Former Union Minister with the objective of promoting rural development through self-empowerment. With more than 40 years of committed services to unreached communities of rural areas, BVT is striving in enhancing the quality of life of families of rural areas and underprivileged through addressing challenges of key developmental sectors and trying to build a developmental ecosystem of inclusive growth.



To achieve its mission, BVT has been working in 4 key verticals of developments; namely Women Empowerment & Education, Good Governance, Sustainable Energy & Financial Institutions & Agriculture and Human values with a multifaceted approach which helps in fostering the growth of rural development and bring a tangible change or enhance the quality of life.

During its long and constructive journey of more than 4 decades or so, BVT has implemented various efforts/projects / programs to propagate the Solar technology in the areas of capacity building & Training. BVT has trained more than 10,000 officials/ executives of various financial institutions – Nationalized & Pvt Banks, Cooperative Banks/ Societies/ MFIs, etc in effective solar financing. Similarly, BVT has trained more than 3000 micro-entrepreneurs & technicians helped the potential entrepreneurs / Technicians to take up self / wage.

During the last more than 25 years BVT has conducted more than 300 training programs for various levels of officials from various agencies like Banks, RRBs, Govt Departments, Panchayats, NGOs and other Rural Development agencies, KMF, Co.Op.Socs, Schools, Health Departments, etc

Apart from these programs BVT has also conducted more than 250 training programs for rural poor women and more than 120 tailoring & embroidery training programs in which more than 1500 women candidates have benefitted from the programs.

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BHARATHIYA VIKAS TRUST

**Proving & Improving
Livelihoods of Entrepreneurs
through DRE Clean Energy Solutions.**



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**SIDBI under Swavalambana
Challenging Fund-Window-I**

1. Solar Powered Roti Rolling

Background:

The art of Roti making is a common home based livelihood. Women usually utilize their existing home kitchens as the production units - making different kinds of rotis and selling them in local restaurants, canteens, nearby cities. But their business is often limited by their physical capacity- entrepreneurs often complain of body pain and not being able to meet the market.



The solar powered DC roti rolling machine increases the output manifold in such scenarios, and increases business opportunities, leading to increase in income.

The solar powered roti rolling machine in combination with an efficient motor provides reliable and economical backup power for entrepreneurs preparing jowar rotis as a livelihood. The roti rolling machine enables entrepreneurs to increase their production speed, provides backup during power cuts and helps reduce electricity bills.

Problems:

- LOW PRODUCTIVITY, HIGH DRUDGERY : Long hours of manual work leading to high drudgery and even higher demand for labour for lesser productivity and poor efficiency.
- LACK OF ACCES to affordable technology, hassle free financing and market linkages
- UNRELIABLE POWER: Production is affected due to lack of uninterrupted power connectivity.

Benefits/ Impact:

- REDUCTION IN DRUDGERY AND INCREASED PRODUCTIVITY
The solar roti rolling machines have enabled entrepreneurs to increase their productivity from 50-200 rotis a day to 500-1000 rotis a day. On average, solar roti rolling machine customers see their income double and are able to avail of long term financing bringing with EMIs low enough to make it affordable.

- ENHANCE PRODUCTIVITY AND IMPROVEMENT IN INCOME:
Spike in income which has tripled or quadrupled their income levels. Entrepreneurs Can able to increase their daily production capacity 2 times resulting in additional income. Entrepreneurs could able to diversify their business through the intervention. Reduce the dependency on grid supply & Uninterrupted and reliable power supply.

- EMPLOYMENT CREATION AND MARKET INNOVATION:

The increased market demand has made women entrepreneurs to spread awareness among other women in their communities and also employ them as additional labour.

Technical Specifications

Particulars	Option 1: 500 Rotis / day	Option 2: 1000 Rotis / day	Option 3: 2000 Rotis/ day
Solar Module	40 Wp, 12 V X 2	75 Wp, 12 V X2	300 Wp, 24 V X1
Solar Battery	60 Ah, 12 V X 2	80 Ah, 12 V X 2	100 Ah, 12 V X 2
Hybrid Charger	10 A, 12 V X 1		
Roti Roller Machine	150 W, 24V, 1500 RPM X 1		
LED Light	5W,12V X 1		

2. Solar Powered Sewing Machine

Stitching the Lives towards Empowerment

Background:

Tailoring is one of the most important livelihoods in India. Traditional tailors who generally serve local customers in small cities and villages uses manual sewing machine. To achieve higher productivity some of them modify their machine by retrofitting motor with a universal motor of 1/10HP or 1/12HP.



However, typically 1/12HP universal motor consume around 100 Watt to run a tailoring machine at nearly 1000 spm (stitches per minute) speed, the same results could be achieved by a 60W PMDC motor consuming only 75 Watts which reduces the capital cost about 15- 20 %.

Problems:

For businesses involving tailoring, regular sewing machines can be difficult to use for long hours resulting in pain in the legs.

Sewing machines which are fitted with electric motors, besides the cost factor, some of typical motors are not energy efficient and the irregular supply of electricity causes constant disruptions to the business. This hampers the productivity and efficiency.

Solar powered Sewing machine which is having more efficient PMDC motor will Improve productivity and reduces the amount spent on electricity. This helps in increasing productivity, saves energy costs and reduces drudgery.

Impacts:

Better time management, ability to complete work orders on time - Ability to deliver stitched clothes on time. Steady productivity on a daily basis. Reduction in drudgery & Improved health and well-being, The design of the machine is such that new tailors can also use it easily, Capable of stitching any design and cloth. Ability to have leisure time activities & Improved participation in social gatherings. Reduces the energy consumption by 40%, reduces the capital cost about by 15% and enhance the productivity and income – Ability to enhance savings, create assets and economic prosperity with social security.

Technical Specifications :

Particulars	Option 1 : 4 hrs	Option 2 : 6 hrs	Option 3 : 8 hrs
Solar Module	40 Wp, 12 V X 1	60 Wp, 12 V X1	60 Wp, 12 V X1
Solar Battery	30 Ah, 12 V X 1	40 Ah, 12 V X 1	60 Ah, 12 V X 1
Hybrid Charger	10 A, 12 V X 1		
PMDC Motor	600 W, 12V, 3000 RPM X 1		
Pulley, Pedal, Belt	1 set		

3. Solar Powered DC Refrigerators

Background:

Sustainable, decentralized cold storage solutions are critical in providing efficient and reliable storage to reduce post-harvest crop wastage at different stages of food value chain. Last mile cold-storage solutions for dairy and meat value chain at the local delivery points is essential to maintain / enhance the freshness and quality/ standard of goods.



Households to have clean refrigeration solutions to save food wastage as well as reducing commute to buy fresh perishables.

Thousands of small establishments/ Shops across rural and semi urban India are selling many products and need to keep various food items, Chocolates, confectioneries, Bakery products, Dairy products, Ice creams, etc for many days. Last mile cold storage solutions will play very crucial role in enhancing their business and income.

Solar powered refrigerator is required to keep the food products fresh to avoid premature spoilage of vaccinations, medicines, milk, milk by products cold beverages etc., and access to cold and perishable products is difficult in un-electrified areas.

Problems:

- Spoilage of the products is an issue in areas with unreliable grid supply.
- Compromised quality of products result in complaints from customers and loss in business.

Impact:

- Decentralized solar powered DC fridge has given the local enterprises a reliable solution for cold storage
- Access to cold and perishable products in electrified areas
- Free from power outage problems
- No complaints on quality of stored products
- Reduction in electricity bills and increasing in income.

Technical Details :

Sl. No.	Particulars	Option 1: 100 Ltrs	Option 2 : 200 Ltrs	Option : 250 Ltrs
1	Solar Module	100 Wp X 2	150 Wp, X 3	400Wp X 2
2	Solar Battery	200 Ah	200 Ah, X 2	150 Ah X4
4	Refrigerators Inbuilt Controller/inverter	100 Ltrs	150 Ltrs	250 Ltrs