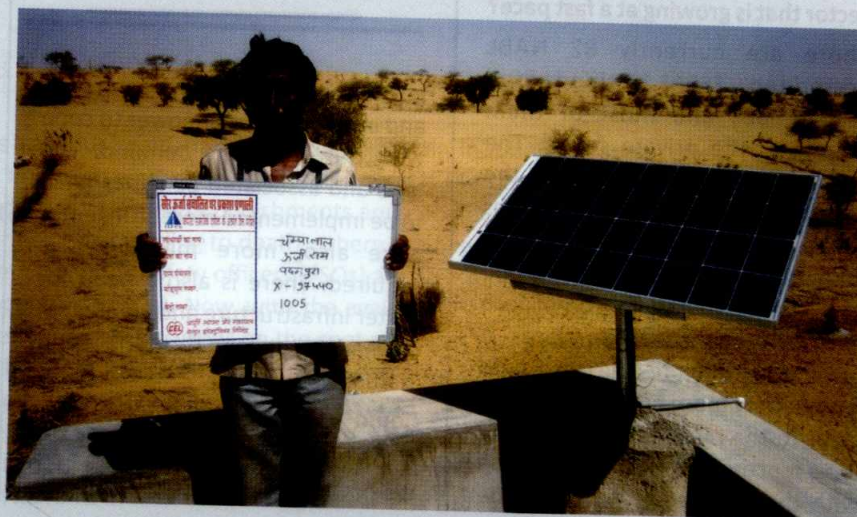




Uplifting lives of Tribes by Providing Basic needs of Energy (Lighting) and Drinking Water

India Infrastructure Finance Company Ltd (IIFCL) was set up by the Government of India in 2006 with the main objective of channelizing long-term finance to infrastructure projects under the scheme for financing viable infrastructure projects through a Special Purpose Vehicle called India Infrastructure Finance Company Ltd (IIFCL), broadly referred to as SIFTI. As a public sector company, IIFCL's Corporate Social Responsibility (CSR) activities are closely linked with the principles of sustainable economic



development. The objective of these efforts is not only to help the society by providing facilities for health, education, civic amenities, etc. but also to create opportunities for skill development, self-employment, to promote greater environmental responsibilities and encourage environmentally friendly technologies for sustainable development. IIFCL in terms of its recently approved CSR policy is also committed to promoting projects for improving environment, sustainability have

selected M/s Central Electronics Limited as an executing agency for a project called "Social Upliftment of Tribes by Providing Basic needs of Energy (Lighting) and Drinking Water"

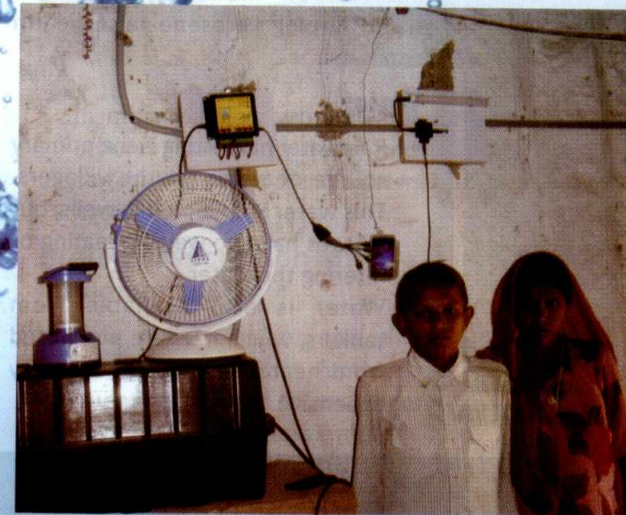
About CEL

Central Electronics Limited (CEL) is a Public Sector Enterprise under the Department of Scientific and Industrial Research (DSIR), Ministry of Science & Technology, Government of India. It was established in 1974 with an

capacity of 40MW per annum.

CEL's Experience in Rural Development Projects

Over the past several years, CEL has designed and installed solar photovoltaic systems for a wide range of applications, with a strong focus on remote and rural areas. As part of the Corporate Social Responsibility of several public companies, CEL has undertaken complete project management responsibilities for their rural electrification and development projects, including procurement, installation and commissioning of the



objective to commercially exploit the indigenous technologies developed by National Laboratories and R&D Institutions in the country. CEL has developed a number of products for through its R&D efforts and in close association with the premier National & International Laboratories including Defence Laboratories. In recognition of all these efforts, CEL has received a number of prestigious awards including "National Award for R&D by DSIR".

CEL is a DSIR recognised R & D company and has pioneered the development and commercial production of Solar Cells, Modules and Solar PV systems based on crystalline silicon technology in India. CEL is ISO-9001:2008 & ISO-14001:2004 certified company, backed by a strong and highly dedicated and well qualified R&D team and has a strong presence in solar PV business. The company has recently commissioned a state-of-the-art solar PV module manufacturing plant with a

products and overall operation and management for five years. In 2001, CEL pioneered the concept of "Remote Village Electrification" in India by successfully electrifying 90 tribal villages in Dantewara district of Bastar Region (Chhattisgarh State) under the joint initiative of Ministry of Tribal Affairs and Ministry of New & Renewable Energy, Govt. of India. In addition to the above, CEL executed several projects in remote and un-electrified villages of Rajasthan,



breeding. Economically this district is generally poor. Hunger arising out of the lack of source of livelihood and basic needs of life has forced a difficult life on the tribals of the district. Upon careful analysis of the ground realities of many villages of the district, following broad issues were found present in all of the villages proposed to be covered by the project:

Energy Access

- All proposed areas do not have access to electricity. Residents have expressed an interest in receiving electricity access.
- On average, village households spend Rs.250 per month on kerosene, much of which is purchased from the open market.
- Kerosene is used for lighting and cooking purposes. Carbon dioxide and carbon monoxide emissions from burning kerosene raise health concerns.

Water

- Rainwater harvesting is the primary source of water for the villagers. This water is collected in wells, but villages have no way of treating or filtering the water.
- Water is also available from tankers, which must be purchased from nearby towns and are very expensive.

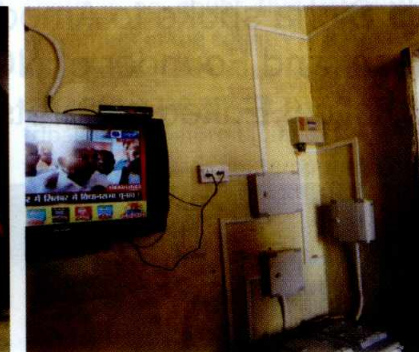
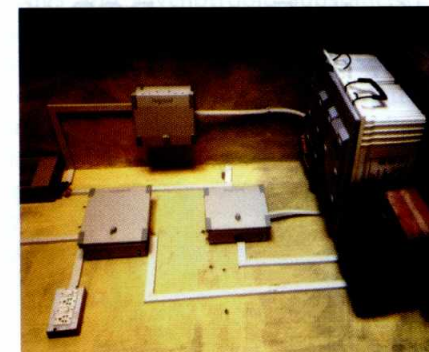
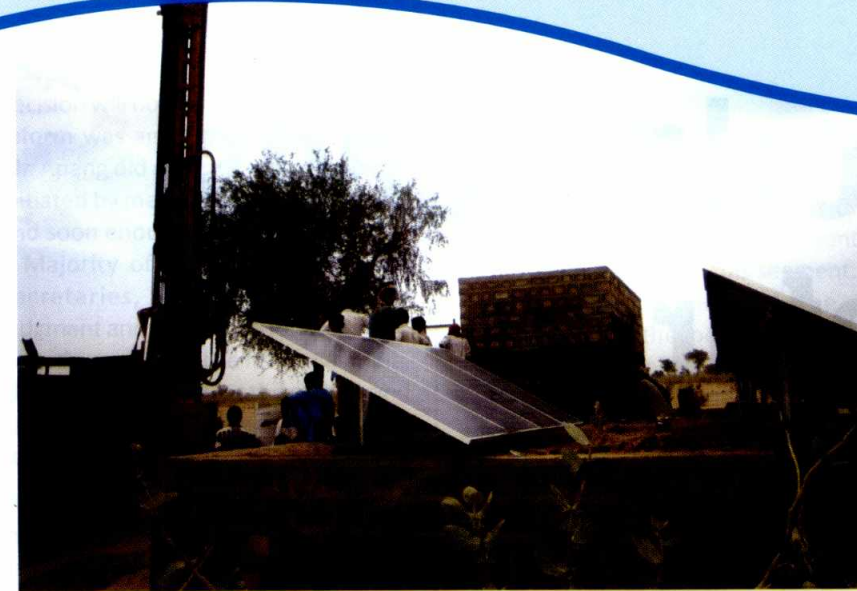
Village Details

Sl no.	District	Panchayat samiti	Garmpanchayat	Villages
01	Jaisalmer	Sankara	Padampura	Padampura, Sanova Nada and Badarsar
02	Jaisalmer	Sankara	Manasar	Rawatpura, Natasar, Ramasar, Bhurpura Manadev Nagar and Bhom Singh Pura
03	Jaisalmer	Sankara	Bhurajgarh	Kamansar, Abhapura, Sympura, Parwatsar

Jharkhand, Orissa, Manipur, Jammu & Kashmir, Uttar Pradesh. These projects involved providing home lights, streetlights, and solar lanterns to the areas.

The IIFCL Project

The project is located in the district of Jaisalmer, Rajasthan. Initially a team of CEL official and IIFCL official conducted a baseline survey in the villages of Jaisalmer district in western Rajasthan. This district falls in the dry zone of the state. Most of the population of these areas are tribal and earn their livelihood by cattle



- In most villages, groundwater is around 150-300 ft. deep, and in certain areas the water is extremely hard.

Project Description and Implementation

With a clear focus on the village priorities, the project focuses on interventions related to solar energy and water. These interventions will impact individuals and households through their social development and the larger community through economic prosperity resulting from better education and skill enhancement.

For houses, a standalone rooftop solar system has been provided that converts sunlight into DC electricity through a solar photovoltaic module mounted on a metal support structure. The generated electricity charges a storage battery, which can supply electricity after the sun sets.

These systems are capable of powering a 20W fan, A 100 W panel will be provided to each household, enough

to power a small 20 W fan, 2lights, a mobile charging unit, and solar lantern. The battery pack included will provide approximately 10 hours of battery backup for normal lighting and fan usage.

For the schools, Solar Power Pack has been provided to operate fans, lights, water pumping system and computers. For the community centers, solar power pack for operating fan, TV and lights was provided.

Most of the villages in India have lack of access to potable water and it is a major issue for villagers. The main source of water comes from rainwater harvested in small pits. Village residents have no way to purify this water, and many complain of falling sick because of drinking dirty water. Currently, villagers use a winnowing sieve or simply filter water through cloth. Many have to turn to buying water, which costs Rs 1,000 for a full tank.

CEL is well equipped to make an impact in these villages as it has a strong in-

house expertise in providing solar powered water pumps. These solar water pumps are specially designed to lift water for irrigation, drinking and other similar applications. These solar powered water pumps are good options for areas where there is no electricity.

For the villages which are proposed to be covered under the project, CEL has used pumps, which can pump water from 240 meters depth. Helical rotor pumps, which can be powered from independent solar panels, are most suitable to reach the water table in the village area, which can be more than 200 meters deep. The pumps are water-lubricated and constructed with high-quality non-corrodible stainless steel components.

The project is expected to make a positive impact in the lives of villagers. Broadly, following social/ environmental outcomes/ impact are likely to accrue from the project:

- Electricity for each household, reducing dependence on kerosene
- Electricity and modern facilities in schools encouraging children of the villages to attend classes.
- Clean drinking water supply, improving health of villagers
- Improved livestock watering and irrigation
- Increased availability of water for cooking, cleaning and sanitation
- Solutions with high reliability and life expectancy
- Solutions that are cost-efficient
- Opportunity for higher employment

This model for development takes advantage of synergies between development efforts to decrease cost while providing a more comprehensive solution than one-off development efforts. This method also aims to deliver a more focused intervention to bring about development in the identified villages in a sustainable and scalable manner.