SAFE DRINKING WATER & SOLAR POWER

RAJGHAT, DHOLPUR-RAJASTHAN

CHAMBAL VALLEY

भारत मत

ग्वालियर, मंगलवार 25 जुलाई 2017

तैरती हुई लाशें हटा कर पानी भरता है राजघाट, मूलभूत सुविधाओं का अभाव

The Project aims to ensure provision of safe drinking water in Rajghat Village – where villagers are currently forced to drink water from open-river stream carrying among other things dead bodies and is house to crocodiles.

Further, the project also aims to setup a solar micro-grid to provide electricity to the village

Project Brief

- About 50km away from Tajmahal at Agra, lies Rajghat Village is about 5km from Dholpur in Rajasthan, on the border of Madhya Pradesh and Rajasthan. As part of Dholpur Nagar Panchayat in Chambal ki Ghaati (Chambal river basin) region, Rajghat falls under National Chambal Sanctuary.

- **Rajghat village is devoid of all basic amenities of life. It has no source of clean drinking water. It has no electricity. Nearest metalled road from the village is about 5 km away. In the absence of any road, there's no way for any vehicle reach the village. Villagers walk to the main road every day. Rajghat has a population of 300-350 persons. Government school is up to class 4 with very few students.**

-

- Villagers source their water (including drinking water of course!) from the river Chambal. Besides being heavily polluted, there is also an added risk of being attacked by gharials (crocodiles) and encountering human corpses that sometimes come floating in by the river bank. **There have been incidents of men and children being dragged away by crocodiles.** In the absence of alternate source of water, villagers continue to risk their lives.
- There haven't been any weddings in the village in over 20 years now. There have been only two weddings in the village in two decades. It is popular as village of bachelors. They have heard of things like fridges, air conditioners, and washing machines, but the mere thought of using them is a distant dream. *A few have mobile phones. They have to walk 2 km to nearest town to get them charged,*"
- Authorities have their explanations ready for leaving Rajghat devoid of any development efforts. 'It lies in National Chambal Sanctuary especially earmarked by government for protection of critically endangered gharial and the Ganges river dolphin. Being in forest area, t*here can be no construction within 500 metres of the river. No roads can be built'.*

  Authorities also fail to give a satisfactory reply on why people are allowed to stay there, "*They have been staying for years! Ideally, the government should be rehabilitating those staying near the forest area. But in their case, there is no such proposal on the table*" Authorities say they would provide pumped water to villagers in next few months. But villagers say, they have been hearing same promises for decades now!

  "*Time and again people come, say things will happen. Neta log aate hain aur vote leke chale jaate hain. Fim directors film bana ke chale jaate hain. But koi kuch nai karta. Dekhte dekhte mujhe 50 saal ho gaye, says a local resident Prabhu Dayal.*

Provision of Safe Drinking Water at Rajghat Village:

- In the absence of power supply, solar power would be the only dependable source for functioning of filtration systems and UV bulbs would need power source.
- Filtration systems would need to be rugged & sturdy and require minimal maintenance.
- Fortunately, being surface water source in a rocky terrain, Chambal River water is low on dissolved salts. Just filtration and control of microbial contaminations would make it fit for human consumption.
- Removal of suspended particulate, colour, smell etc and hedging it against microbial contamination would be able to make water fit for human drinking.
- The daily drinking water need for the entire village is estimated to be about 1200-1500lpd.

- It is proposed to design, supply and install a 200lph solar based filter backed by UV radiation facility. System would be skid mounted, have multi grade sand filter (to remove coarse particulate), activated charcoal filter (to remove color, smell or odor from water), micron cartridge filter (to remove fine suspended particulate). At the end of it all there will be a UV tube to radiate purified clean water to check microbial contamination.
- A solar power pump having capacity to produce about 500lph backed by solar panels would be included in the scope of supplies besides the skid mounted product water tank.

Financials:

Details	Cost
Solar Panel to generate power to operate a 0.5HP DC pump	Rs. 30,000
Solar based 0.5HP DC pump Shakti brand	Rs. 65,000
Filtration system with SS skid, sand filter, carbon filter, MCF & UV	Rs. 60,000
700liter skid mounted loft tank	Rs. 5000
Cartridges consumables for 2 years	Rs. 10000
Transportation & installation	Rs. 25,000
Implementing Agency- Supervision, Travel and Overheads	Rs. 45,000
TOTAL FUND REQUIREMENTS FOR CLEAN DRINKING WATER	**Rs. 2,40,000 +Taxes**

*Taxation extra on actual

SOLAR DC MICRO-GRID FOR ELECTRIFICATION

For Rajghat, which has been devoid of any development, this project means cheap quality power at home and relief from kerosene, which is pollutant and health hazard, for which, often they have to pay expensive price due to black marketing.

For the villagers it is just more than light, it is an opportunity to do more after the dark. Many social enterprises sell products such as solar lanterns or wind-up chargers to meet their customers' lighting or charging needs. But in this region, where average family incomes are rarely higher than Rs. 500-800 ($10 per month), villagers would have to put themselves into debt to purchase such products

Keeping in mind long-term sustainability and needs of Rajgarh, KarmaKonnect researched and reviewed various electrification alternatives. We have narrowed down to using Solar Dc Microgrids that assure ***low-cost, local and sustainable solar power to the entire village***.

POWER SCENARIOS

	Scenario 1 Absolute minimum	Scenario 2 Low income household	Scenario 3 Medium income rural household	Scenario 4 Urban household
Lighting	✓	✓	✓	✓
Cell phone	✓	✓	✓	✓
Fan/Cooler		✓	✓	✓
Radio/TV		✓	✓	✓
Water pump			✓	✓
Other				✓
Peak demand per household	30 Wp	150 Wp	500 Wp	1 kWp
Annual energy demand per household	65 kWh	500 kWh	1,000 kWh	1,200 kWh

Quotation for Solar DC Micro Grid for 65 Households at Rajgarh

There are two components of the entire system: A) Fixed component for which we are sure about the quantity required b) Variable component: Which requires us to do a site survey to estimate the actual quantity required. So for now we are quoting the per unit rate of the wire, conduit and accessories required.

TECHNO COMMERCIAL OFFER: FIXED COMPONENT – CORE MATERIAL

Sno.	Items	Make	Specifications	Quantity	Warranty
1	Solar PV Module	Navitas	300W/24VDC	4 nos.	10 years + 15 years
2	Solar Battery	Southern Batteries Pvt Ltd (Hi-Power)Brand	200Ah tall tubular @C/10 type	4 nos.	5 years
3	DC LED Lamp with Bed Switches	ORITTO	3W , 10~30VDC	130 nos.	2 years
4	Solar Charge Controller	Phocos GmbH/UTL/Suncraft	40A 24V	1 Nos.	1 year
5	MS Poles + Panel Mounting Structure	Prabuddha Power	10 Ft Pole 3 inch dia / 30mmx3mm MS angle used for Panel mounting Structure All structures Epoxy coated	3 sets	NIL
6	Mobile Charging Unit with Mounting Square Blocks	Standard Make	1A	65 nos.	NIL
7	Thimbles	Dowells	As per requirement	1 set	NIL
8	DC Distribution Box	Prabuddha Power	2 in 4 out Configuration at system voltage 24VDC	1 Nos.	NIL
9	DC Array Junction box	Prabuddha Power	6 in 2 out at 24VDC system configuration	1 Nos.	NIL
10	Installation Cost	Technicians	Turnkey Installation Included	Bundled Service	NIL

Commercial Offer: **Rupees Two lacs fifty thousand only (Rs. 2,50,000.00)**

TECHNO-COMMERCIAL OFFER: VARIABLE COMPONENT

#	Items	Application	Make	Specifications	Packaging	Rate (INR/ meter)	GST Extra
1	1 sq mm Copper Multi strand flexible two core wire	Internal Wiring	KEI/Polycab	ISI/BIS	100 Mtr	7.5/- per mtr	28%
2	2.5 sq mm Copper Multi strand flexible single core wire	External Wiring	KEI/Polycab	ISI/BIS	100 Mtr	17.6/- per mtr	28%
3	4 sq mm Copper Multi strand flexible single core wire	External Wiring	KEI/Polycab	ISI/BIS	100 Mtr	26/- per meter	28%
6	PVC Cable Clips for various cabling/wiring.	All wiring as per req	Mangalam	NA	100 Nos.	1.5 per piece	28%
7	Rigid Conduit pipe 12/16 mm di	All wiring as per req	Crown/VIP Make	NA	3 mtr Pipe	20 Rs/meter	28%
8	Flexible Conduit pipe 12/16 mm dia	All wiring as per req	Crown/VIP	NA	25 mtr	5.5/-	28%

TOTAL FUND REQUIREMENTS FOR ELECTRIFYING THE VILLAGE	**Rs. 2,50,000 +Taxes**

Project Timeline & Monitoring:

- Installation of Drinking Water and Electricity solution shall be completed in 15 days post receipt of funds.
- KarmaKonnect will monitor the functioning of both the solutions and the stories of change and development will be communicated regularly to donors periodically.
- Water quality will be monitored periodically by taking water samples and getting them tested from local laboratories. Any corrective steps if needed will be instantly taken.
- Prabuddha Ventures will be training local youth in the maintenance of the solar panels and unit. The youth shall also be trained to install the panels in neighboring villages in the future by Prabuddha ventures.
- Additionally, donors will have the option to be given media coverage, as this is a much-hyped media issue and the development of Rajghat shall certainly attract a lot of attention (incidentally, this is the constituency of the Chief Minister-Shri Raje)
- **ALL DONATIONS ARE 50% tax-exempted under the KarmaKonnect Foundation 80(G) certificate.**