

Green Tech



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Power to off-grid backwaters

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SANDWIP, off the southeastern coast of Bangladesh, is an island with a population of around four lakh, devoid of almost all basic infrastructure. The island often hits newspaper headlines for the natural calamities that come its way.

With its formidable location in the northeastern cone of the Bay of Bengal, the national grid has bypassed Sandwip.

The Power Development Board's diesel-run power station covers only 20 percent of the island's area. A devastating cyclone in April 1994 had destroyed almost all the power infrastructure existing then. Most habitants in the area have been left without any power supply since then.

However, things began to improve from September 2010. Purabi Green Energy Ltd installed the country's largest solar powered mini-grid having a capacity of 100 kilowatts.

The mini-grid was installed in the Anam Nahar area of Sandwip and was

formally launched in February this year. It generates power for the local business offices and households.

Asma Huque, chairman of Purabi, said the company had plans to install a solar mini-grid for a decade that was finally realised now.

"Our target was to set up the project at a place where the national grid connection is not likely to reach in the near future," she added.

The project cost stood at around Tk 5.7 crore. Purabi received 50 percent of the investment as a grant and 30 percent as a soft loan. The rest 20 percent is its equity.

The grant worth Tk 3.85 crore was provided by German Development Bank (KFW), which is one of the leading and most experienced promotional banks in the world. It works on improving the economic, social and ecological conditions of the people around the world. The World Bank (WB) provided the Tk 1.71 crore soft loan.

"We still had to manage more than Tk 1 crore for the project by ourselves," said Huque.

Project installation began early 2010 and was completed by the end of the year.

The project cost seems high because expensive German technology is being used to develop the system. The storage system was developed through high capacity batteries from Germany that have a warranty of 10 years. Other batteries offer only two years of guaranteed service.

Ekramul Huque, resident engineer of Purabi Green Energy Ltd, said the mini-grid informally started giving connections on September 29.

"To date, we have given 15 connections to local shops and offices. Most of our capacity remains unused," he added.

Huque said their target areas are Ponditer Haat, Anam Nahar, Khantar Haat and Malek Munshir Bazar, where



Solar panels spreading across Sandwip on the southern coast power the largest solar mini-grid in Bangladesh.

around 305 shops, 95 houses and 5 mosques are located.

The interesting thing is, he added, the first connection was given to the local police station.

Swapan Saha, sub-inspector and in-charge of the Sandwip Police Station, said following the power connection, he no longer feels that he is in a remote village.

Saha was recently transferred to Sandwip from Kotwali Police Station in Chittagong town.

"When I first came here, I found out that there was no power at the

station and the policemen had to work at night using kerosene lamps," he said.

"It was too cumbersome working without electricity and it certainly affected the performance of the policemen posted here."

"Now we work at night at ease and efficiency at the office has also increased," he said.

Saha said this type of a project is viable for areas like Sandwip and therefore, similar initiatives should be taken in other off-grid pockets.

Kamrul Islam, branch manager of

Rupali Credit Cooperative Bank, said they previously received a supply of power at the branch from a local generator, but they suffered frequent voltage fluctuations.

"It used to create problems while we worked, especially with the computers as voltage fluctuations would shut the PC down," he added.

The cooperative manager said they had power supplies for only 6 hours before, which is at least 14 hours now, thanks to the mini-grid.

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German batteries that store power from the solar panels.

Solar systems empower business

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CHAR Montaz is an island in the southern coastal region of Bangladesh under the Galachipa upazila of Patuakhali district. Due to its geographic location, the area is at higher risks of natural calamities. Because of the dispersed nature of this area that is crisscrossed by large rivers, basic infrastructure development is not cost viable.

Land based transportation is non-existent in these regions and the only means of communication is river transportation. Furthermore, the level of salinity of the water limits agro-production yield here and fishing is

the main source of earning for a population of nearly one million. As a consequence of its geographic location, the islands are beyond any long-term plan for grid electrification services.

However, things had changed for the better when a cooperative named Upokulio Biddutayan O Mohila Unnyon Samity (UBOMUS), which stands for Coastal Electrification and Women's Development Cooperative, started its activities at Char Montaz in 1999.

The cooperative was established under a project, Opportunity for Women in Renewable Energy Technology Utilisation in Bangladesh and conceptualised and implemented by Prokashali Sangsad Ltd (PSL). World

Bank funded this project under the Energy Sector Management Assistance Programme.

UBOMUS, registered under the women and children's affairs ministry, has 35 members, all of whom are underprivileged. Women now change their fates through the cooperative.

Asma Huque, managing director of PSL, said the main goal of the organisation is empowerment of poor women through technology transfer and improvement of the quality of their lives in the community through energy service delivery.

"Typically, rural women are left out of mainstream services. UBOMUS aims at eradicating this, while providing solutions with clean energy for

lighting," she added.

According to Huque, the vision is to demonstrate the potential of rural women with small business development.

Capacity building in technical and business skills has resulted in women's empowerment from this economically underdeveloped area, which was apparent in the case of UBOMUS, she said.

Runu Begum, president of UBOMUS, said her life has drastically changed after joining the cooperative.

"Previously, I had a monthly income of only Tk 3,000. But now, I earn around Tk 30,000 from my business that was developed by the income from the cooperatives," she said.

Begum said she currently has one

cloth store and one photo studio at Char Montaz in her own building.

The cooperative has been carrying out its solar programme since 2003 and has already installed more than 14,800 solar systems. It produces high quality lighting products, which have been in use in the surrounding areas for the last 5 years.

Since early 2003, UBOMUS is assembling solar charge controllers of international standards for the local and national market.

According to experts, these controllers extend the useful life of the batteries by more than 20 percent in comparison to the other controllers available in the local market.

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A woman, left, makes CFL bulbs at Char Montaz. Another woman works on a solar inverter in the same area. They are members of a cooperative, Upokulio Biddutayan O Mohila Unnyon Samity.