



FACTSHEET

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Sustainable Energy Access

Micro solar power station in Sundarbans

Sundarbans, India



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The micro solar power station set up at Satjelia Islands adjoining Sajnekhali Wildlife Sanctuary

Access to safe, clean energy is fundamental to poverty eradication, to stopping deforestation, and to stopping climate change. Most poor people and inhabitants of remote locations meet the majority of their energy needs by collecting biomass (fuel wood, agricultural waste and dung). Many also have to use other expensive resources like kerosene.

Use of biomass and kerosene has bearing on biodiversity and deforestation (through the impacts of collecting firewood and human-wildlife conflict), and equally to climate change since black carbon (soot) and kerosene are significant contributors to global warming. Access to clean energy therefore, has clear connections between human wellbeing and environment protection.

In India today, many thousands of villages are without access to safe and clean energy. These villages are often too remote for grid electricity to be considered a technically or economically feasible option. For these villages to be electrified, the only solution is a standalone (distributed generation) power system.

Lighting homes in Sundarbans

On 9 March 2011, WWF-India and CAT Projects Australia inaugurated a micro solar power station at Rajat Jubilee on Satjelia Island in the Sundarbans region of West Bengal using the Bushlight India Model. The 'Model' is a comprehensive process for planning and establishing technically and financially sustainable, off-grid centralised renewable energy-based village energy systems. It is based on the highly successful 'Bushlight' project which, since 2002, has been providing remote indigenous communities in Australia with access to reliable renewable energy services. It is a scalable solution that can provide access to safe and clean energy in the form of grid quality electricity in remote areas. The micro solar power station at Rajat Jubilee connects 50 households, six local businesses and three community buildings and supplies uninterrupted grid quality power.

Smart meter that regulates the amount of electricity that one can use in a billing period.



The 'Bushlight' model involves a comprehensive community engagement and energy planning framework. At Rajat Jubilee, local residents underwent energy efficiency education and training which enabled them to draw up energy budgets for 24 hour cycles. The energy budgets then led to system design allowing provisioning of a predetermined, assured amount of daily energy to all consumers and providing the community with the information and tools to use this energy to complement and build their livelihoods as they need and choose on a day to day basis. This is made possible through the installation of unique demand side management hardware (programmable energy meter) called Urja Bandhu. It is hoped that the energy planning framework and programmable energy meter will prove to be of relevance to the remote village electrification work going on in the country and contribute simultaneously to human wellbeing and environment protection.



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People's power

The power station is owned and managed by a consumer cooperative society that was registered in late 2010 as part of the collaborative process. Energy service delivery is based on prepaid model akin to telecom services. The revenue so collected should cover the operating expenses and the cost of Annual Maintenance Contract (AMC) from year six until year 15 which is the design life of the power station. Cost of AMC for the first five years and cost of battery replacement has been capitalised in the project cost. The consumer cooperative has set the tariff based on energy slabs opted for by the consumers and has taken into account life cycle cost of the power station.

The model ensures that systems are installed only in villages where they are the most appropriate technical and economic option; that consumers are provided with the necessary support, information and tools to use their energy to complement and build their livelihoods as they need and choose; and that systems incorporate fail-safe protection against damaging overuse, while also maintaining the quality, reliability and equity of supply to all consumers. The system cost is little more than the standard centralised solar Photo Voltaic systems being installed in India today. However, the quality of the energy services delivered to consumers exceeds all existing models of service delivery using decentralised generation. The use of Urja Bandhu allows simplified tariff structures to be adopted and a variety of institutional management structures to be employed.

A healthy Sundarbans: for humans & wildlife

The Sundarbans delta region is among the largest in the world, measuring about 40,000 sq km. Lying in the low coastal zone makes this region more vulnerable to floods, earthquakes, cyclones, sea-level rise and coastline erosion. It is important to conserve Sundarbans as it not only has many rare and globally threatened wildlife species including the Royal Bengal Tiger (*Panthera tigris tigris*) but is also home to one of the highest densities of humans living inside it.



Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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