



## TECHNEWS

# Renewable energy flourishing in Bangladesh

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WITH our last reserves of oil and gas hastily running out on us, the likelihood of the world stepping into an energy crisis situation is not far away. As Thomas Edison once said, "I hope we don't have to wait 'til oil and coal run out before we tackle that." According to scientist R Buckminster Fuller, "There is no energy crisis, only a crisis of ignorance."

As such, the time has come for the world to buck up and tap into other sources of energy that are not just renewable, but also sustainable. A few such renewable energy resources that have been tapped so far include wind energy, solar energy, biomass, hydropower and geothermal energy.

In the past, renewable energy has generally been more expensive to use than fossil fuels. Plus, renewable resources are often located in remote areas and it is expensive to build power lines to the cities where they are needed. The use of renewable sources is also limited by the fact that they are not always available (for example, cloudy days reduce solar energy, calm days mean no winds blow to drive wind turbines, droughts reduce water availability to produce hydroelectricity). However, the production and use of renewable fuels has grown more quickly in recent years due to higher prices for oil and natural gas.

Bangladesh is blessed with an abundance of sunlight, water and biomass, which makes it an ideal location for generation of power from renewable



charged to run simple lights, appliances like a small TV, radio or cassette player, or to charge cellular phones. Besides homes, they can also be used to light shops, fishing boats etc. As opposed to conventional electricity, the client can enjoy the fact that there will be no monthly bills, no fuel cost, very little repair and maintenance cost (Grameen Shakti provides free monthly checkups during warranty period), easy installation and portability. Many customers are using PV systems for heating soldering irons for repairing household appliances, rural carpenters and other craftsmen are extending their working hours after sunset, and some buyers have installed PV systems to sell battery-based power in rural market places, especially to shop owners to help light their shops. Till date, Grameen Shakti has installed about 2,60,000 Solar Home Systems, with a minimum of 300 systems being installed a day. "Our sales have been growing exponentially every year," says Dipal C Barua, managing director of Grameen Shakti.

Another successful Grameen Shakti venture is Polli Phone which allows people in off grid areas the facilities of telecommunication through SHS powered mobile phones. The only problem however is that solar panels are still quite expensive (even though prices do continue to fall and the payments for the panels can be made in small installments) but the capacity of the power supply is quite less, about 37 watts. However, with a warranty of about 20 years, the panels could probably go a long way. If other energy sources, like wind, hydro or tidal power could also be incorporated with the PV systems, which would be cheaper but larger scaled.

On the other hand, their Improved Cooking Stoves program provides environmental friendly, cheap and healthy cooking stoves for use in individual households. The stoves produce clean methane gas from cow dung for cooking. "The stoves cook much faster than our conventional earthen stoves and don't produce unhealthy soot and smoke, thereby reducing health problems in my family," claims satisfied customers. Moreover, the byproducts from the plants provide effective fertilizers and productive fish feed. Many make an extra income by providing gas from their stoves to neighbors on a monthly rental basis.

Grameen Shakti has also been successful in promoting and constructing both domestic and larger sized biogas plants for rural villagers. Impact on biogas plant owners has been positive and demand is increasing day by day. All its clients are enjoying hassle free and pollution free energy for cooking and business activities. Bangladesh

has the potential for developing four million biogas plants. Grameen Shakti intends to further scale up its successful pilot project and develop a five-year action plan for expanding biogas program in Bangladesh.

Another innovative contribution of Grameen Shakti has been the establishment of technology centres in different villages that are dedicated to empowering rural women by providing free training in the assembling parts of the Solar Home Systems and providing Customer Service "Green Jobs", as they proudly call it. Through this venture, women are now earning as much as Tk. 7,000-8,000 in a month sitting at home.

Other sources of renewable energy like wind power is also being tapped. Demonstration wind power projects are being established, especially in the coastal areas of Bangladesh, along with data collection to better ascertain the wind resource. Two small wind turbines at Sitakunda and Chokoria of Chittagong district have been installed to provide power for fish farms established by Grameen Bank. Four hybrid power stations (combination of wind, diesel and PV) have also been installed in four cyclone shelters (set up by Grameen Bank) to provide power for Grameen Bank members to start micro enterprises in and around the shelters.

The hydropower program is still in the preparatory phase, but since it is mostly being examined in hilly districts, where a very small population resides, its application on a large scale is still doubtful. Their vision is to produce 7.5 million solar home systems, construct 2 million biogas plants, 20 million improved cooking stoves and 1,00,000 Green Jobs. "I have a dream of empowering 75 million people of Bangladesh through renewable energy technologies", says Dipal C Barua.

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