



TECHNOLOGY GYANESH PANDEY

The Energy Star

TEXT: USHA RAI

He generates electricity from husk power providing a brighter future for Bihar

Without light and energy it is not possible to change the face of rural India. “The backward villages of India cannot be mainstreamed for development unless there is education and access to education should not be blighted by a lack of electricity.” The thought drove Gyanesh Pandey and his friends to look for alternative power for some of the remotest villages of Bihar in east and west Champaran, Muzzafarpur, Sitamarhi and Laksarai.

Pandey knew about life without electricity. From Baithania village located in power-starved Chamaparan, his school years were spent outside the state. After completing his engineering from Banaras Hindu

University, he went to the United States for his masters in engineering. It was there he began studying non-conventional energy sources – solar, wind energy and bio-diesel – but they did not seem workable options for Bihar.

When he returned to India he stumbled on the idea of generating power from rice husk through a person providing gasification technology for rice mills. However, instead of using diesel for turbines he hit on the idea of rice husk. Some research work had already been done on rice husk power in the Indian Institute of Technologies but Pandey’s job was to make it happen. The first plant of Husk Power Systems (HPS) – born from the combined efforts of Pandey, his two friends, Ratnesh Yadav and Manoj Sinha and Charles W. Ransler, an American who studied with him in the US – was set up in 2007 in the wilderness of Tamkuha, West Champaran, some seven hours from Patna.



PHOTO: SAPARISHI BISWAS / OUTLOOK BUSINESS

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The plant converts waste rice husk to combustible gas that drives a small turbine. Today HPS has set up 60 mini-power plants, each generating enough power for about four villages — depending on the size of the villages and the power consumed. The mini-plants are also lighting up over 250 villages helping a population of 300,000.

Eighty five to ninety percent of the homes in the villages where power is available are buying a six-hour supply at ₹ 80 a month from HPS. It is enough to charge a mobile phone and turn on two CFL bulbs ensuring children finish their studies for the day and women their household chores. On a monthly basis HPS collects ₹ 40,000 to ₹ 50,000 as revenue from sale of electricity but gives back to villages about ₹ 10,000 a month by generating employment. With the amount of rice husk generated in the state, Pandey estimates that Bihar has the capacity to run 2,000 mini-power plants. Now HPS is developing a franchising model which will catapult it onto the global social enterprise stage. It will also enlist Indian partners who want to open their own HPS franchise.

The environment-friendly HPS power plants have reduced the annual consumption of 42,000 litres of kerosene and 18,000 litres of diesel in the villages. Since they are non-polluting, it is estimated that the HPS plants have saved 50,000 tonnes of Co2 being

released into the atmosphere between 2007 to August 2010. All these plus points have won HPS this June the coveted £120,000 Ashden Award for innovations in sustainable energy.

Pandey has developed other streams of activity too. Providing power to rural India is just one part of his big dream. Health, education, agriculture and women's empowerment are other aspects of rural life that he seeks to delve into. "With a network of roads, wire facilities coming to the region we will piggyback on the plants to set up medical care and health units in 2014," says Pandey.

A Husk Power University — run independently of HPS through a foundation called Samta Samriddhi — has been set up training people to run the power plants. Thus his vision for employment and empowerment of women is already taking shape. Using the char from the rice husk women are being trained to make incense sticks. To speed up production and ensure quality of the incense Pandey developed a machine that costs about ₹ 3,000. Some women have been given machines and trained so that they can earn at least ₹ 60 a day.

"It has been a continuous struggle but when you actually see villages light up and children studying at home, there is a huge sense of satisfaction," admits Pandey. ■

More on Gyanesh Pandey at www.huskpowersystems.com