

NATURE POWER

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Young Drivers of the Renewable Energy Bandwagon

Renewable energy in India has always been a risky business, be it due to high input cost, unsteady market or lack of government support. But these seven young entrepreneurs defied all this and much more. At a time when even big companies are reluctant to enter the renewable energy market due to the huge costs involved, they have come up with innovative solutions to develop clean energy, which brings down the costs and is accessible by the commons, even village folks, reports Shreya Jai.



'Swades' story in Real

Siddharth Malik, 30

Megawatt Solutions, Delhi

AN engineering and management degree from University of Pennsylvania, a flourishing career with energy-focused companies in the US where the base package is a sinful \$1,00,0000 per annum. What more can you ask for? Well, Siddharth Malik had ideas. This passionate 30 year old left all this to come back to India and start his own renewable energy venture amalgamating high-performing solar-thermal systems with fossil fuels.

He started Megawatts Solutions in 2010, which provides concentrated solar-thermal solutions. "At least when sun is shining, fossils need not be fired," says Malik, adding, "this simple idea creates long-term economic value for industry owners." Its 0.5-mw pilot project in Guragon provides a hybrid solution by integrating solar thermal with fossil fuel that offers considerably higher value than stand-alone solar thermal plants. "It has resulted in up to 25% more efficient performance than competing technologies, which makes a drastic improvement in economics of solar," adds Malik.

MS' solutions are based on home-grown concentrated solar thermal technology and its role ranges from designing to manufacturing, installing and commissioning industrial-scale solar thermal projects. It has four projects in the pipeline including a 3 mw solar thermal heating project in Gujarat – the largest ever in India.



Solar Cells Blooming Like Sunflowers!

Raghuram Konubathia, 31 &

Bhagwan Reddy, 31

SmartTrak Solar Systems, Andhra Pradesh

WHAT if one solar panel is built like a sunflower which sense and tracks sunlight the whole day in place of four panels kept in different direction? US-return software engineers Raghuram and Reddy developed this very idea to clock a turnover of Rs 2 crore in just one year for their joint venture 'SmartTrak Solar Systems'.

A solar tracker is an electro-mechanical platform fitted with panels, which follows the sun ensuring that maximum amount of sunlight strikes the panels throughout the day. "In conventional means, to increase the production by 25%, one has to set up more solar PV panels. But with the solar tracker, the same amount of extra energy is produced with less than 10% of additional cost. It can lead to an increase in generation capacity by 25-40%," explains Raghuram.

"A cost analysis of a 5 mw solar PV unit with 30 lakh units of output requires about Rs 47.5 crore and a tracking system based solar PV plant can achieve this output by setting up a 4 mw plant with an outlay of Rs 38 crore."

The duo have their hopes pinned at the AP's state policy on Renewable Energy Certificates regime, which they hope will change the scene.

Powering the Roots

Nikhil Jaisinghani, 36 & Brian Shaad, 37 | Mera Gaon Power, New Delhi

A Foreign Service officer of USAID and an international development practitioner comes together for a venture in renewable energy may be no big deal, except if you happen to live in villages in and around the Sitapur district in UP. Thanks to Mera Gaon Power (MGP), started by Nikhil & Brian, they now get seven hours of electricity per night at just Rs 25 per week.

The two US citizens while working in Nigeria on captured flare gas had noticed that equipments and facilities reached the farmers but utilising it was out of their capacity. When Nikhil moved to India

in 2009, he witnessed the same problem existed for solar generated power energy in India. MGP's village-level lighting facility generates electricity through centrally located solar panels and stores the generated electricity in batteries. Power is distributed over a short distance from the battery bank to households within the village for seven hours per night.

Every household gets light through light emitting diodes (LEDs), which reduce power consumption by 90% per household. Each household can get its set-up of two or four LED and a mobile charging point at a one-time price of Rs 40.



Illustrations: VARANI SAHU

Transform Rooftop into A Wind Farm

Shupesh Sharma, 22

BRESON, Mumbai

"IT'S my passion to build ideas that are useful and have real scope to reduce either cost or efforts," says 22 year old Sharma. One may tend to shrug him off as an amateur dreamer if not for his list of innovations, which include rooftop installed wind-turbine, solar power-run car and zero electricity refrigerator.

Out of these, roof-top wind turbine is a commercial success helping his company Breson clock revenues worth Rs 15 lakh in just 6 months.

An engineer by education and innovator by nature, Sharma has developed wind turbines of 800W, 1,000W and 5,000W capacity, in accordance with the wind speeds. He did all this while pursuing his Masters in Business Design from Welingkar Institute of Management and Research, Mumbai.

He went on to develop an economical turbine, which can be even used by individuals in their households. "Diverse wind speeds across the country was a major challenge so I developed a business design of customised wind turbines that helps suffice the demand of power," adds the young scientist cum entrepreneur.

Breson has already completed pilots across several states including Maharashtra, Madhya Pradesh, Rajasthan and Gujarat.



Taking the Road Less Travelled

Shyam Patra, 35

Nature Infratech, Lucknow

PETITE, bespectacled Shyam Patra doesn't come across as someone who has lighted up lives in 400 villages in the Bhagalpur district of Bihar, and Gonda and Unnao district of UP. But his company Nature Infratech, started in 2009, has already installed solar energy-based micro grids in these villages, which

don't even have proper road connectivity.

Having worked in the power sector with companies like GMR and Lanco, his experience is well evident when he sells solar generated electricity at price as cheap as Rs 120/month for 5 hours of electricity.

"I had worked in MNCs but that kind of work didn't create a social impact or changed lives, completely opposite to what I wanted to do - reach to the have-nots," said Patra.

Naturetech follows a model developed by Patra to make sure that not a watt of energy goes waste. There are rooftop installations of solar cells of 60-watt capacity for 10 households. The grid is DC and has current circuit breakers to reduce electricity theft and is kept on only during the distribution hours - 6 pm to 10 pm.

Seeing our success, UPNEDA (Uttar Pradesh New and Renewable Energy Development Agency) gave us a contract for a pilot project of 7 mini grids of 1.8 kw each for 200 households in Gonda, which we accomplished in just 15 days," says Patra. He feels that banks are wary of backing renewable energy projects and that the government should be on the forefront.



1. The villagers in front of the house on whose rooftop our panels are installed
2. Electric bicycle that runs on solar power
3. Just 2 panels (120 Watt) source of power
4. Raghuram Kondubatla & Bhagwan Reddy