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## **Startups in India that are leading the race of Cleantech/Green energy**

### **1. Gram Power**

Gram Power was founded in 2010 by Yashraj Khaitan (an Indian), and Jacob Dickinson (an American), engineering graduates of University of California, Berkeley, who are being mentored by Eric Brewer, a vice-president of infrastructure at Google and a professor at Berkeley. The startup provides cutting edge Smart Grid technologies to address the electrification challenges in developing nations. In March 2012, the startup set up India's first Solar Powered Smart Microgrid in the Rajasthan hamlet of Khareda Lakshimpura, providing energy for lights, buttermilk machines, televisions and fans.

So far, the startup has brought smart grids to 30 remote areas in rural India through its Smart Microgrid solution. Its now bringing its technology to the national grid by managing power distribution with its technology for India's biggest private power distribution company.

The startup was selected among the top 10 Cleantech Innovations by NASA in 2011.

### **2. Mera Gao Power (MGP)**

Mera Gao Power, which means "my village" in Hindi language, builds, owns, and operates micro grids in Uttar Pradesh serving off-grid villages with high quality, dependable lighting and mobile phone charging services. MGP's unique model is able to provide service to a typical hamlet for \$1,000, making its lowest cost design the first commercially viable micro grid targeted at the rural poor.

The U.S. Agency for International Development is MGP's first investor. USAID, through its Development Innovation Ventures, has awarded MGP a grant of \$300,000 to build and operate micro grids in 40 off-grid villages of Sitapur district, in the state of Uttar Pradesh and evaluate the impact of MGP's services on health, income, and education.

Notably, MGP was also selected as a Technology Pioneer by the World Economic Forum, in 2014. MGP currently serves 150,000 people in 25,000 homes across 1,600 villages in 8 districts of Uttar Pradesh.

### **3. Barrix Agro Sciences**

Founded in the year 2011, this particular startup realised it real soon that in order to transform and provide an eco-friendly touch to the pest control measures being currently employed in agriculture, they will have to initially focus on doing extensive research.

Following this strong emphasis on research principle, the startup founded by Lokesh Makam has been successful in coming up with some unique next generation integrated pest management tools and produces. These products are highly effective, eco-friendly, good in performance, non-chemical based crop protection products that are also easy on pocket.

The company's future plans includes developing a pest control methodology with dedicated personnel and a strong supply chain, so as to have a positive impact on ecology and society.

### **4. Avant Garde Innovations**

Avant Garde is a Trivandrum, Kerala based cleantech startup that claims to be India's first & only startup with 100% renewable energy commitment. It aim is to introduce innovative, affordable and sustainable solutions that take renewable energy self sufficiency and energy empowerment to the next level through a distributed and decentralized approach using pioneering strategies the world has not witnessed yet.

The comparatively young startup is making wind turbine generators that are extremely easy on pocket but at the same time high on performance. The startup aimed for a market launch during 2016 with its first offerings as a highly affordable small wind turbine suitable for residential, commercial, agricultural, village electrification and other uses.

### **5. Ecolibrium Energy**

India is a land rich with natural resources but at the rate at which we're consuming, something needs to be done in order to conserve these natural resources for the future brigade. Started in the year 2010 by Chintan and Harit Soni, this innovative startup, which already has over 450 companies in its kitty, is working towards provide energy management solutions to the energy rich land that is India.

## **6. Husk Power Systems**

It is said, if one wants to explore the real culture of a place, the best place to do this is through its countryside. Unfortunately, a lot of these rural areas in India are blanketed in deep power crisis. Bihar based Husk Power Systems' aim is to provide power to India's rural population by making use of company developed proprietary technology.

The startup uses a biomass gasifier to generate electricity. Each of the company's plant is currently serving over 400 rural households, thus saving 18,000 litres of diesel and 42,000 litres of kerosene every year. This further helps in improving the health conditions in rural along with reducing the alarming indoor air pollution levels.

## **7. ONergy**

The company founded in the year 2009 provides decentralized energy solutions. This also includes various range of solar products like solar home systems, solar water heating systems, solar inverters, solar lanterns, solar TV, solar micro grids and solar irrigation systems, KW installations for households and institutions and cookstoves etc.

## **8. Karma Recycling**

Founded in January 2012, Karma Recycling provides a platform for trade-in of used electronics particularly mobile phones, tablets and laptops. The customers can get paid cash or coupons against trade-in of old devices. The services are offered through its proprietary platform called XchangeHub that provides efficient pricing and certainty of fulfilment.

Using recycling trade model, the New Delhi based startup focuses on conserving earth's precious resources through systematic collection, reuse, re-commerce, and recycling of smartphones, tablets, and laptops, thus reducing e-waste.

## **9. Green India Building Systems and Services (GIBSS)**

Incubated at the Indian School of Business, Hyderabad, this 2010 founded startup offers geothermal cooling technology, LED indoor lightning and hot water co-generation solution. Initially having begin as a three-member team has now matured into a company with 80 staff with offices in Mumbai, Bangalore, Delhi and Singapore. The startup plans to touch Rs.250-300 crores in revenue by the year 2016-2017.

## **10. Tessol Thermal Energy Solutions**

Mumbai-based TESSOL is mainly into logistics and intends to transform the way thermal energy is being produced and consumed in the world at present. The startup focus on technologies that have tremendous potential to impact current thermal applications in Agricultural, Commercial and Industrial facilities. Tessol is currently focusing on the cold chain sector – transportation as well as stationary storages using the cold plates technology. It uses the brand name 'PlugnChill' for this solution.

*PlugnChill* eliminates the use of diesel for refrigeration operations reducing its operating costs by more than 60% while ensuring temperature stability of the container. The system charges within 6 hours using any power source and thereafter maintains the required temperature range in the container for upto 24 hours for a point to point transport.