

## PROSPECT OF GREEN TECH START-UPS THE GREEN REVOLUTION OF INDIA

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### ABSTRACT

*As the human race is rising their needs is also growing in the process of evolution technology is changing dramatically. The widespread of technology involved in human life. Technology advancement has its own advantage but using it more often may cause environmental problems. In the changing times, people are initiating to change the scenario. The humankind, these days is working in the direction of green tech revolution which incorporates the investment asset class, technology, and business sectors inclusive of clean energy, environmental and sustainable or green, products and services. This paper attempts to introduce the concept of green-tech start-ups; to briefly discuss why inception of Greentech start-ups is important. For a transition towards a green economy radical innovation plays a central role. Start-ups are key market actors in introduction of radical sustainable innovation, but so far there is very limited research on the specific challenges and opportunities of green start-ups.*

**KEYWORDS:** Sustainable Innovation, Green Start-ups, Typology, Strategy, Finance.

### Introduction

Clean technology (cleantech) is a general term used to describe processes, products, or services that lessen waste and require as few non-renewable resources as possible. There is growing political consensus about the requirement for a greener economy and to decouple economic growth from environmental impacts. Thus, sustainable innovation is considered as the key in any strategy for a societal transformation. Start-ups are clearly the key market actors in its development. From this it can be inferred that "green" start-ups, that contribute to the goals of a green economy (reducing greenhouse gas emissions, improving energy efficiency, adopting a circular economy approach etc.), must be a concern in innovation and environmental policy. The paper aims to provide a foundation for future empirical work in such specific contexts. Green entrepreneurship should be incorporated in the current industrial paradigm for sustainable growth. The top ranking companies of the world have started turning green through corporate social responsibility. It is essential for manufacturing, supply chain, information technology, and retail companies to take to green practices. Therefore, its potential in near future is huge. This paper includes in-depth analysis of positive and negative aspects of starting and running green business.

### Objectives of the Study

- To analyze in detail about the green tech start-ups in India.
- To ascertain the scope of growth of green tech start-ups in India.
- To identify the problems and bottlenecks faced by green tech start-ups in India.

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### Successful Greentech Startups and their Attainments in India

| S. No | Greentech startup      | Founder      | Year of inception | Accomplishments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------|------------------------|--------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.    | Avant grade innovation | Arun George  | 2016              | Avant Garde is a Trivandrum, Kerala based green tech startup that claims to be India's first & only startup with 100% renewable energy commitment. Its 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 startup offers affordable small wind turbine suitable for residential, commercial, agricultural, village electrification and other uses. |
| 2.    | Husk Power Systems     | Manoj Sinha  | 2007              | Bihar based Husk Power Systems' aims 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. This also aids in improving the health conditions in rural along with reducing the alarming indoor air pollution levels.                                                                                                                                                                                                          |
| 3.    | ONergy Solar           | Piyush Jaju  | 2009              | Provides decentralized energy solutions including various range of solar products like solar home systems, solar water heating systems, solar inverters, solar lanterns, solar TV, solar microgrids and solar irrigation systems, KW installations for households and institutions and cook stoves etc.                                                                                                                                                                                                                                     |
| 4.    | Barrix Agro Sciences   | Lokesh Makam | 2011              | The startup has come up with some unique next-generation integrated pest management tools and products. These products are highly effective, eco-friendly, good in performance, nonchemical based crop protection products that are also easy on the pocket.                                                                                                                                                                                                                                                                                |

### Factors That Drive For Green Tech

- **Increased Environmental Awareness**

The demand for less harmful products stimulates companies and industries to adapt accordingly. The solution probability is a combination of "environmental friendly" product and changes in consumption patterns.

- **International Agreements**

Trans-national environmental agreements like the Montreal Protocol, which bans the use of certain ozone-degrading substances. Once adopted, these measures gained acceptance around the world and quickly led to the development of new propellants for refrigerators and freezers and cooling plants.

- **Commercial Threats and Opportunities**

Customer and consumer demands puts pressure on companies engage in environmental issues and offer greener products with companies signing voluntary agreements to reduce energy consumption or otherwise improve environmental performance. This may be seen as a new found opportunity for many startups too.

### **Benefits of Green Tech Startups**

- **Recycling**

A lot of recyclable material has allowed individuals to create plant fertilizer, sculptures, fuel, and even furniture.

- **Conserving Energy**

Alternatives like The use of electric cars, solar panels is on the rise, especially in the UK.

- **Rejuvenating Ecosystems**

The use of Green technology is on the rise to breathe life into ecosystems that have seen considerable damage.

- **Purifying the Air**

Dealing with carbon emission and purify the air is another concern which will allow humanity to breathe properly.

### **Challenges and Cases of Green Tech Startups**

Clean tech startups are aiming for building sustainable businesses with regular profits. Rohan Gupta champions the cause with his venture Attero Recycling, an end-to-end electronic and electrical goods management service, in Noida in 2008, one of just seven companies in the world doing this. Environmentally-conscious entrepreneurs like him are using clean technology to create a green future. GIBBS installs cooling equipment, using geothermal technology and uses ground temperature, which is usually in the range of 20-26 degrees Celsius, to cool buildings. With higher initial investment but huge savings thereafter, it lessens water consumption in 75 companies and educational institutions, including Sanjiv Goenka Group, Tata Communications and Indian School of Business, and cut electricity use by 20% and bills by 25%. Karthik Reddy's Venture capital firm Blume Ventures has invested in three such companies, and has set an example of Threadsol, which provides solutions to the garment industry. Threadsol has developed software to reduce fabric waste in the garment industry.

### **Finding Funding**

Just being green, however, is not the main mission for these startups. Many are profitable and are doing the balancing act of being a sustainable business model and an environmentally-conscious company along with being financially stable is the key as well as a challenge to create an impact. The entry barriers are high too and customers of such products and services are difficult to convince.

### **Conclusion**

The Greentech startups in India is growing year on year, seeking to produce environment-friendly products which should benefit the natural environment by adopting clean production technology and using harmless or less harmful new techniques, energy resources, and technology. The Greentech startups are an innovative opportunity that is in harmony with nature and the environment, which reduces ecological risks and seizes economic opportunities. Therefore, it is an integral concept in sustainable development. In the face of its huge and growing energy needs and its environmental and energy security challenge, India needs to develop green technologies that will help the country to produce cleaner energy as well as to consume it more efficiently. Greentech startups are seen by the country's leaders as future pillars of the Indian Sustainable Development.

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