

Modelling of reverse logistics network for consumed EVB

PROJECT PROPOSAL

There has been an increasing consensus about air pollution's effect on the planet and our day to day lives. Air pollution being a chronic problem, which has developed over a long time, requires drastic changes in the way human beings operate in the world. As we are all going through our leisurely life the air pollution is affecting the global climate. The Amazon fires and the Australian bush fires have surprised the entire world with their magnitudes. Countries all around the world are waking up to this "catastrophe in progress" and are undertaking audacious goals to tackle this problem. Each country has to face its own challenges and India stands no exception.

Though India prides itself with being one of the fastest growing economy of the world, which has gone rapid industrialization in the recent years, has seen an exponential growth in the number of factories and automobiles in it. Exhaust from them is the biggest contributor of air pollution in our country. Though we cannot just remove them from the economy we can definitely come technologies to make the situation better.

The development and marketization of electric vehicles in the previous decade has proved its potential as a world revolutionizing technology and also in changing human perspective about automobiles. However, bringing electric vehicles to the public has its own challenges.

Though electric vehicles may seem to work with no harm to environment it has a major drawback, its Lithium ion batteries. The usable life of these batteries is till the time the chemicals in the batteries degrade to 75% of their initial stage. After this limit is reached the battery has to be disposed. The chemicals used in lithium ion batteries are highly toxic to the ecosystem. Thus directly dumping these batteries is not an option. The only viable alternatives are, dumping the batteries after treatment or recycling them.

Many countries, including India, around the world have established a rule for environmental conservation on the companies which produce electric vehicles. According to it, the disposal of the car batteries (usually lithium ion batteries) is a responsibility of the company producing it. This means now the company producing electric vehicles now not only have care about the getting the car to the public but also getting it back from them. This planning of getting the cars from the public comes under a broad subject of Reverse Supply Chain Logistics.

This challenge of collecting the batteries from the public takes up an entirely new magnitude in a country like India. The reason being, unlike many western countries, India is very much non uniform in terms of its socio-economic organization. With the cultures changing after every few cities and the economic prosperity being highly varied it becomes increasingly complex to set up collection plants location.

In this project we are looking forward to do just that i.e. to make a reverse supply chain model to help the electric vehicle industry to set firm foot in India. Also as the second part of this project we make an attempt to design and launch a mobile application which would aid the customer and company to undertake the exchange.