

Tyre recycling



Tyre Recycling : The New Business on the Block Wednesday, 31 March 2010

00: 00 Nimesh Sharma Opportunities - Manufacturing

----- Top of Form User Rating: / 174 PoorBest

Bottom of Form The number of vehicles hitting the roads is increasing everyday and so is the number of tyres. There is a business opportunity up for grabs and it's in recycling them. With more than 33 million vehicles added to the Indian roads in last three years, can you guess the other items that would have increased manifold leading to some grave problems? Well, one of them is the tyre, one of man's most useful inventions.

Most useful, but if the increasing numbers are not managed it can be dangerous. About 80 million tyres are a part of these 33 million vehicles, which include two, three, four and six wheelers, and pose a potential threat to the environment. However, companies have innovated ways and means to curb this menace which has led to the evolution of the huge tyrecycling industry. When we had started working on this article, we thought we could count the recycled tyre uses on our fingers; which included cushioning on boats, burning for warmth in winter, swing ride seats (in rural Indian context) and at the most land-filling.

However, further research and talking to industry people revealed startling facts about the uses of old tyres, which we had never imagined. In fact, in India, even the tyre recycling industry is not aware of all these uses. It's a business opportunity glaring in front of us. In this article we have tried to find out the ground realities of the tyre recycling industry and we have also taken inputs from Dr. S N Chakravarty, KPS Consultants & Impex who is a

consultant in tyre, rubber and allied industries with 40 years of experience.

Tyre composition and stages in recycling

A tyre is made of natural rubber (also called virgin rubber), Styrene-Butadiene Rubber (SBR), Polybutadiene Rubber (PBR), Carbon black, Nylon tyre cord, rubber chemicals, steel tyre cord and Butyl rubber. Stages in Recycling: 1. Crumb: Rubber Crumb is the material resulting from granulating scrap tyres into uniform rubber granules. It can be mixed with asphalt for road surfacing and making children's playgrounds 2. Reclaimed Rubber: Reclaimed Rubber is the recycled old tyre rubber. It can be used as a substitute of natural & synthetic rubber.

It is mixed with virgin rubber to further make new tyres of automobiles, bicycles and other low-cost products like footwear and mats. Virgin rubber, 90 percent of which is produced in Kerala is sold for as high Rs 140-150 per kg. Reclaimed rubber is sold for Rs 25-30 per kg and India being one of the voluminous reclaim rubber producers, the production is growing by ten percent per year. Size of the business opportunity A typical passenger car tyre contains 24-28 percent of Carbon black, 40-48 percent of natural rubber (NR) and 36-24 percent of synthetic rubber including Styrene Butadiene Rubbers (SBR) and Butyl Rubber (BR).

These need to be recovered back from tyres lest they are wasted away. Currently, India produces 90, 000 metric tonnes (MT) of reclaimed rubber, which is sold at Rs 25-30/kg but does not produce Carbon black, Butyl Rubber and oil from used tyres. Now the Indian tyre industry (specifically) imported 39, 000 tonnes of Carbon black and 54 percent of its Butyl Rubber

requirements in 2008-09. If we could produce even a small amount of that import ourselves, we would be saving a huge amount for the exchequer. Current tyre production stands at 11.5 lakh MT for the year 2008-09. With the projected growth of 50 percent, you can easily estimate the potential of the opportunity. Present scenario Even though it's a 40 year old industry in India with the oldest player being Gujarat Reclaim, the number of players nationally is very small, approx 15-25 tyre recyclers in India, compared to 36 tyre manufacturers. The major players number only about four or five. They are mainly located in North India and Maharashtra. Prominent names include Gujarat Reclaim, ELGI Group, Balaji Group, Rishiroop and Swani.

Gujarat Reclaim has an annual turnover of over Rs 15 crore from its Haridwar tyre recycling plant, with a production of 20 tonnes of reclaim rubber per day. However, none of the recyclers in India are full-fledged recyclers, and most of them use the Pan method for reclaiming rubber. They operate by outsourcing part of their work to each other.

Various Uses of Old Tyres

Excluding the use of whole tyres, we can categorize the uses of tyres in the following way:

1. Rubber Crumb - floor mats, belts, gaskets, shoe soles, dock bumpers, seals, muffler hangers, shims, and washers
2. Reclaimed Rubber in Vehicles:) Automotive Industry - Crumb (three to five percent) and Reclaimed rubber (up to ten percent) is particularly used in automobile tyres. However, since the volume of tyres is very high, the quantity of these rubbers used also goes up. New tyre industry uses approximately 58 percent of the natural rubber of India, including imports of more than 80000 tonnes (according to ATMA figures)
- b) In tyre carcasses in substantial volume and

other automotive parts c) Bicycle tyre industry produces a massive 6-7 lakh tyres/day, out of which more than 80 percent are produced in Ludhiana.

Ralson is the major company here with a production of one lakh bicycle tyres a day and 1.5 lakh tubes a day.

3. Molded products - These include mats, hose pipes, conveyor belts, v-belts, footwear, tiles, adhesives, sound dampers, rubber sheets, battery containers and other rubber molded goods

4. Footwear industry - Shoe soles 5. Cement Industry - " This is the most perverse use of old tyres causing only pollution", says Dr. Chakravarty .

However, in some countries, respective cement industries have developed technology where the tyre is burnt at a temperature that destroys most toxic emissions, the exhaust is scrubbed and filtered and little escapes the cement kiln. The usage of tyres for burning in cement kilns in India is up to 20000 tonnes per year, according to Imbrose, a small tyre trader.

6. Retreading - Tyres in India are retreaded as much as three to six times. One thing to note here is that it's the truck tyres that are retreaded, and not the car tyres.

There are 100-odd firms engaged in tyre retreading in India with prominent names being MRF, Apollo, ELGI, Midas and Indag.

7. Whole tyres are used as highway crash barriers, furniture, boat bumpers on marine docks, etc but it is a negligible amount. Land filling or burning tyres for energy has limited prospects as environmental authorities are acknowledging the need for its greener alternatives. On the other hand, mass-market end products like continuous rolls of cost-effective recycled rubber used for noise insulation now complete the 'big picture' for investors to consider recycling tyres commercially.

Where to procure old tyres? Old tyres are procured from tyre dealers across the country and tyre associations. The market is concentrated in the trucking centers of India. What technology is available? There are three methods for reclaiming rubber: 1. Pan Method - It is the oldest and highly labor-intensive and causes huge water and air pollution. 2. Digestor Method - It is a costlier method and used by some recyclers in India. 3. Reclamation Methods - It is a very costly method and is only used for very large-scale production.

None of the Indian firms use this method. The finer processes include mechanical shredding, mixing, pressing, pyrolysis, etc. Would I be making money through this or saving the environment? The attraction factor towards environment can be served if better technology and systems are used which would reduce pollution. Besides, there would be huge savings on oil imports. The existing companies are surely making money with a profit margin of 10-15 percent. If the issues of energy cost, collection of scrap tyre and various clearances required for environmental pollution can be handled, money will follow and flow in.

Can I import used tyres? " Despite the ban on import, used tyres are imported in a clandestine manner, sometimes as new tyres at low value; since there is no restriction on import of new tyres or as tyres under the " others" category. Many countries such as Japan, Bangladesh, Pakistan, Philippines, Thailand, Kenya, South Korea, etc. have either put a complete ban on import of used tyres or have placed stringent conditions on such imports", says Sundarrajan of PrimaryInfo. Chinese tyres which are as cheap as 30% to Indian tyres dominate the market in spite of the anti-dumping rules.

<https://assignbuster.com/tyre-recycling/>

How big can the industry grow? With the right initiatives taken by the government, there is a possibility of 50-100 percent growth of this industry including export options (of the good quality reclaimed rubber). India is currently the second largest reclaim rubber producer after China. Statistics project a mammoth potential increase upwards of Rs1. 13 billion in the industry. Countries in Middle East, Africa, Europe and other Asian countries form the export market. Investment required For the Pan method recycling, the plant can be set up with Rs1 crore.

However, a plant of Digestor method recycling, producing 5 MT/day shall cost Rs 3-10 crore depending upon the source of the machines and level of automation. A fully automated plant would cost about Rs12 crore.

Reclamation method is not used by anyone in India. No reports or data? The rubber bodies must commission a proper study to gauge the current scenario and potential of tyre recycling industry by involving technical experts. The Rubber Board, which is a cash rich organization, can offer incentives of various kinds to the recyclers to start and expand the business and start exporting.

Starting Up So, now if you want to start up a tyre recycling industry, you need to buy a tyre recycling plant with judicious combination of machinery from India and China for effective investment control, conduct feasibility studies and market survey, and then make sure that both the supply of old tyres is controlled and sale of by-products is maintained continuously.

Regarding things to be careful about, Kumar says " Entrepreneurs should focus on quality product, selection of suitable machinery, cost-effective capacity choosing and environment protection, all of which are very

<https://assignbuster.com/tyre-recycling/>

important. In UK, The Environmental Protection Agency (EPA) has launched an initiative to encourage businesses to recycle more tyres. It is estimated that 100, 000 used tyres are removed from UK's vehicles each day, amounting to 40, 000 tonnes of waste rubber each year. Under the scheme, the EPA and the Waste and Resources Action Program(WRAP) plan to create guidelines for the collection, transportation, storage, recycling and reuse of the rubber tyres Here's a question to consider: When you decide to upgrade to the newest computer or television or smart phone, what happens to the old one?

The answer is much more complicated than one would imagine, and the growing prevalence of new technology, coupled with most Brits' desire to want the latest version of every gadget, has posed a significant problem for landfill sites. Electronic waste is harder to break down due to the processes used to manufacturer it, but still many people simply throw away valuable technology to make room for the next best thing. There are several solutions to the challenge of how to discard your technology, though.

The simplest answer, and perhaps the one that does the most good, is to donate your old television sets, computers, and even phones to a nonprofit organisation or a charity that has the time, resources, and manpower to figure out where your old goods can be put to good use. Another alternative is to donate them directly to churches, underprivileged schools, or other institutions that could use them. Consumers can also sometimes return their used equipment to large office supply retailers, who will usually accept any type of equipment, regardless of where it was purchased.

All of these solutions are low-cost or no cost to the donator. In addition, UK citizens may soon have the advantage of getting a tax break for donating computers, as organisations like the Charity Technology Trust push the government to include technological donations into tax law. The trust maintains that as the UK government aims to provide access to technology to underprivileged sectors of the population, such as impoverished families and seniors, then a donation scheme could contribute significantly towards that goal.

Even still, these obsolete items have given the electronics industry new life in some cases. With the growing need to recycle computers and other equipment, something that is not easily done by the average person, new companies have cropped up that can handle these recycling requests either for free or for a nominal cost. This is because many times those companies involved can actually use parts of the unwanted equipment, such as the precious metals used to construct computer motherboards. This kind of arrangement presents a win-win situation for all parties involved.