TATA MOTORS
Connecting Aspirations

MIND ROVER
beyond the obvious
SEASON 7

TATA

End of Vehicle (ELV) & Recycle – Reuse – Recover Policy (RRR)

Entry challenge Caselet

The Indian Automotive Industry is in a growth stage. The automobile production and sales in India are expected to grow at higher rates over the next decade than in most other auto hubs. However, as the newer vehicles are being added on the roads, there is a large number of older vehicles that are coming to end of life. In addition to this, a significant number of damaged vehicles and parts end up generating piles of scrap.

Figure no. 1, shows the estimated number of motor vehicles reaching end of life in India. Moreover, Government of India is planning to implement vehicle scrap policy which will incentivize voluntary scrappage of another ~28 million vehicles which are older than 15 years and this will significantly increase the official number of vehicles to be scrapped.

How to deal with this enormous amount of scrap is a big challenge but is there a silver lining in this case that might turn this challenge into an opportunity for Tata Motors?

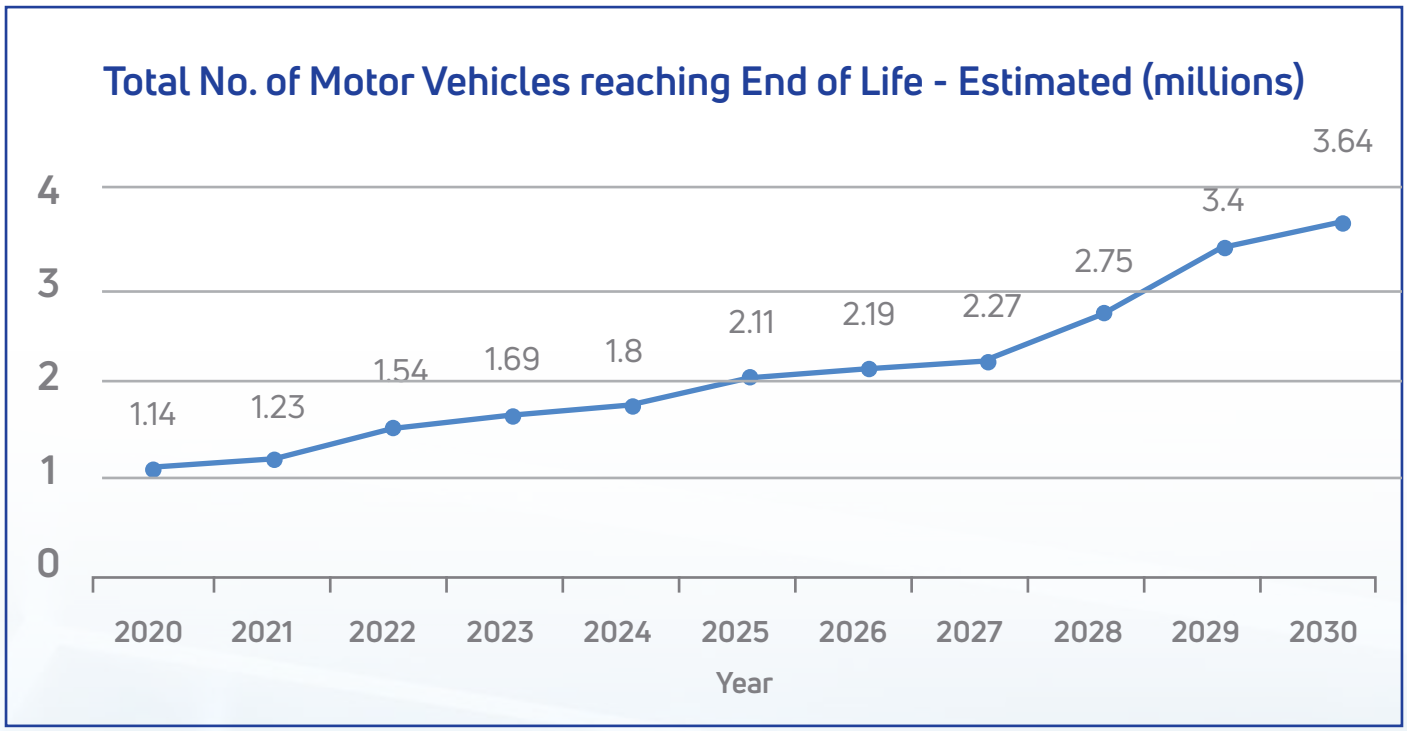

Figure no. 1: Estimated No. of Vehicles reaching End of Life(source: SIAM)

End of Vehicle Life (ELV) & Recycle-Reuse-Recover Policy (RRR)

In line with developed countries, Indian Government is planning to adopt two-fold strategy to handle enormous vehicle scrap in coming years:

1. **ELV Regulation –** guidelines to deal with auto scrap in scientific manner and in organized way to avoid contamination of land-water-air sources.
2. **RRR Policy –** Policy for Reuse, Recycling and Recovery for Automotive OEMs to ensure that environmental concerns are addressed at design level itself. Intent is to – improve recyclability and able to recover maximum energy from vehicular mass at the end of life of vehicles. Figure 2 and 3 shows the definitions of RRR and Regulatory Requirements.

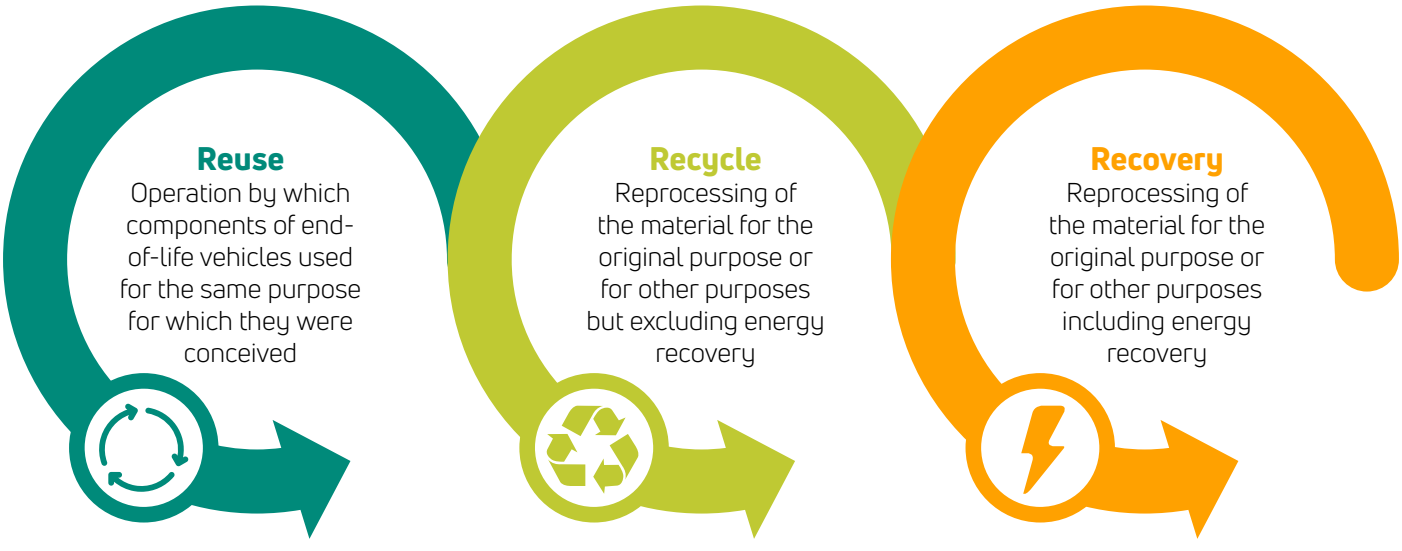

Figure no. 2: Definitions of RRR

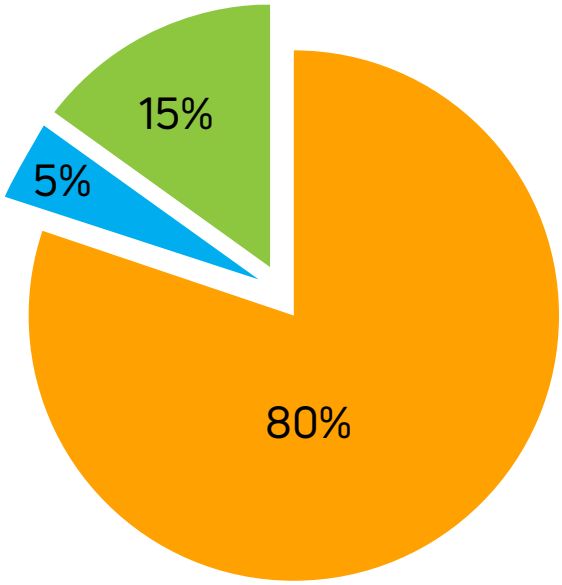

Figure no. 3:

RRR Regulatory Requirement

European ELV – RRR Requirements mandate to meet 80% recyclability and 85% Recoverability targets under Type Approval Regulations and an inline regulation are expected for India as well.
The recovery processes for metals, electronic circuits and copper elements is relatively established, the RRR processes for Tyres, Insulations, Batteries (Li-Ion) and Multi-layered materials and composites are not yet established and provide opportunities for Innovations.

Solution Required

Develop a solution to deal with the automobile scrap, especially for those materials for which RRR processes are not yet established keeping in view the following pointers :

- Which parts/components should Tata Motors prioritise? Why?
- What is your Innovative Technical Solution to Recycle- Reuse-Recover a particular part(s)/ component(s)
- Any suggestion on alternate materials that is to be used without affecting the performance?
- What will be the impact (Societal, Environmental and Economical) of proposed solution for TATA Motors?