Auto Shredding Facilities : A need under Indian Context

By

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Structure of Presentation

- Brief about steel scrap
- Current scenario of Automobile industry & Future Outlook
- Rationale for installation of Auto Shredding Unit in India
- Conclusion

- **Steel scrap is one of the key input metallic for production of steel through various process routes viz.**
  - **BF- BOF**
  - **DR – EAF**
  - **EAF / Induction furnace for direct production of steel**

- **Type of scrap**
  - ► **Heavy Melting Scrap (HMS) essentially procured from sources like decommissioning of power / steel plant units, ship breaking**
  - ► **Shredded scrap is procured from vehicles / other whites goods products with thickness less than 20 mm**
  - ► **Turning / Boring is generated while machining the parts / components**

- **Steel by far most re-cycled material in the world**
- **40 % of total world steel is produced from scrap metal**

► Advantage of steel scrap usage

- **Reduction of environmental impact compared to ore extraction**
- **Significantly reduces CO2 emission**
- **Reduces energy & water consumption**
- **Better Economically viability : each ton of steel recycled preserved 1400 kg of iron ore , 600 kg of coal & 30 kg of limestone**
- **Unlike other recyclable materials like paper & plastic , steel scrap can be repeated without degradation of base properties.**

► Scrap Shredding : Current practice in India

- Scrap industry is very much fragmented in India
- Numerous small players in un-organised sector
- Presently there is no production of shredded scrap in country
- Reason : lack of an organised efforts in metal / scrap business & lack of a standard procedure of reclaiming scrap from end –of – useful life products like vehicles.

  Results in

  - Low recovery rate from manual breaking down of vehicles with crude method of dismantling & storage / supply
  - Leads to environmental & safety issues
  - Can not handle large volume (Manual operation)

Current scenario of Automobile Industry in India & future outlook

All India Vehicle Registration, 000

Year	2 Wheeler	Car / Jeep	Busses	Goods Vehicle	Others	Total
2002	41581	7613	635	2974	6121	58924/ 17343
2003	47519	8599	721	3492	6676	67007
2004	51922	9451	768	3749	6828	72718
2005	58799	10320	892	4031	7457	81499
2006	64743	11526	992	4436	7921	89618
2007	69129	12649	1350	5119	8460	96707
2008	75336	13950	1427	5601	9039	105353
2009	82402	15313	1486	6041	9710	114951
2010	91598	17109	1527	6432	11080	127746
2011	101865	19231	1604	7064	12102	141866
2012	115419	21568	1677	7658	13169	159491
2013	132550	24853	1894	8597	14551	182445

Production of automobile in India, million units

Year	Passenger	Commercial	3 Wheeler	2 Wheeler
FY 11	3.0	0.8	0.8	13.4
FY 12	3.1	0.9	0.9	15.4
FY 13	3.2	0.8	0.8	15.7
FY 14	3.1	0.7	0.8	16.9
FY 15	3.2	0.7	0.9	18.5
FY 16	3.4	0.8	0.9	18.8

Export of vehicle from India, million unit

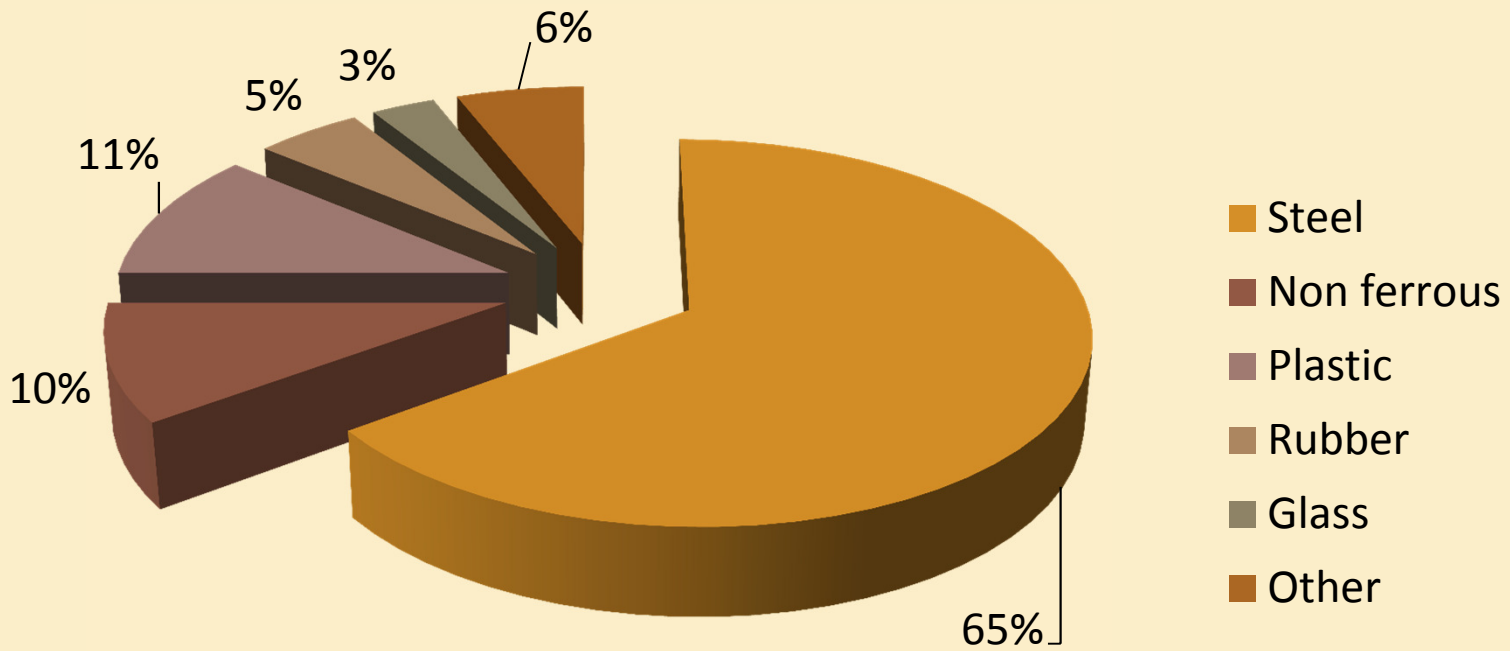
Year	Passenger	Commercial	3 Wheeler	2 Wheeler
FY 11	0.4	0.1	0.3	1.5
FY 12	0.5	0.1	0.4	2.0
FY 13	0.6	0.1	0.3	2.0
FY 14	0.6	0.1	0.4	2.1
FY 15	0.6	0.1	0.4	2.5

City	Car Sale in 2014-15
NCR	273283
Mumbai	121778
Bangalore	110880
Hyderabad	75926
Pune	74463
Chennai	71351
Ahmedabad	56304
Kolkata	46172
Jaipur	46065
Cochin	36536

Sales of commercial vehicles, 000

Country	2009	2015	2030
Germany	4035	3693	3700
France	2678	2566	2900
U.K	2216	2598	2400
India	2262	4800	11900

Typical composition of passenger car



Picture of upper body of passenger car

Outlook for Automobile sector in India

- India is 6th largest vehicle manufacturer globally
- By 2020, India 's share in global passenger vehicle market to touch 8% from 2.4 % in 2015
- Two wheeler production to rise from 18.5 million in FY 15 to 34 million by FY 20
- Passenger vehicle production to increase from 3.4 million in FY16 to 6.0 million in FY20.
- Government to make automobile manufacturing the main driver of " Make in India " initiative as it expect passenger vehicle market to triple to 9.4 million by 2026 as highlighted in Auto Mission Plan (AMP) 2016-26

Rationale for installation of Auto Shredding Unit in India

Global Scenario

- **USA recycles about 12-15 million cars every year & famous $ 3 billion US federal cash for clunkers' scheme succeeded in improving fuel efficiency by 58% .**

- **China recycles about 5-6 million cars a year & substituted an estimated 2.7 million high polluters from national car fleet.**

- **U.K recycles about 9 million cars a year & introduced scrappage incentive scheme in 2009**

- **Japan recycles about 5-6 million cars a year & introduced a program since 2009 onwards offering upto 2500 US$ to trade in vehicles 13 years old or more for new environmentally friendly cars**

Indian scenario

- National Green Tribunal (NGT) has issued order to remove 10 years old diesel vehicles from NCR
- 15 year old diesel vehicle can not be re sold any where across the country & it will only have to be scrapped.
- Vehicle scrapping will reduce the pollution and check the global warming as older vehicles emit more poisonous gases
- Demand for fuel efficient automobile will grow.
- Government will get money from sale of new vehicle through excise & other taxes
- Increase in demand for fuel efficient vehicles will lead to reduction in dependence on oil imports & saving on foreign exchange

- **India's future in recycling looks bright as studies show that by next decade vehicle density in India would grow from 20 for every 1000 people to 65 for every 1000 .**

- **Government is planning to implement vehicle recycling policies & also provide an incentive for car/ two wheeler and commercial vehicles thus promoting a voluntary scheme for surrendering of old vehicles.**

- **To encourage discard old vehicles, Indian Automobile Manufacturers have requested Government to offer 50% rebate on excise duty and road tax**

- **If India abides by auto recycling policy then tentatively 3-4 million cars could be recycled in a year**

- **Domestic steel production in 2016 : 95.6 Mt**
- **Steel production by 2030 as per MOS vision plan : 300 Mt / yr**
- **Steel scrap requirement by steel sector by 2030 : 45 Mt / yr**
- **Steel availability from steel plants by 2030 : 10 Mt / yr**
- **Steel scrap requirement by other sources : 35 Mt/ yr**

- **Import of steel scrap in last 5 years**

  2015 : 6.7 Mt

  2014 : 5.7 Mt

  2013 : 5.6 Mt

  2012 : 8.2 Mt

  2011 : 6.2 Mt

- **Auto recycling can reduce the cost & dependence on importing of steel scrap**

- **Considering 65% steel to be shredded in a year , requirement of Auto shredding capacity will be to the tune of 2.4 Mt .**

Salient Features of Auto shredding Unit

Auto Shredding Unit have 3 main components

Main Shredding Unit

Non – Ferrous Unit

Non Ferrous Down stream Separator

Broad parameters based on material processing (1.5 lakhs tonnes / yr)

Main Shredding Unit 60” shredder mill of 40 t /hr steel scrap production having In Feed conveyor, Feed Chute, Shredder mill , Under mill vibratory feeder , transfer conveyor & Magstand

- **Non Ferrous unit of 15-20 t /hr production unit consist of feeder, Square Trommel (create three sizes) , transfer conveyor to eddy current , Steinert DMS 80" (Remove any ferrous fines left) Steinert ECS 80" (separate non ferrous from non metallics) and set of conveyors to carry large / fines non ferrous materials to bins.**

- **Non Ferrous Down stream Separator : 10 t /hr will retrieve Al & Cu (Zorba) from non metallics .**

- **Land requirement : 20 acres (15 acre for main plant & 5 acre for storage of discarded vehicles**

- **Order of investment : 110 crores**

  Main Plant & equipment : 60 crores (Imported)

  Other equipment, land/ building etc - 50 crores

World biggest shredder unit at Newport, Wales, U.K
Installed in 2006 : Processing capacity 6 lakhs/ yr
Capex : 150 crores, Manpower :12

Conclusion

- **To start with each zone North, South & West should have at least one Auto Shredding unit of capacity 1.0- 1.5 lakhs t/yr to meet regional demand of steel scrap to primary / secondary steel producers.**

  Sale of cars in 2015

  North : 36.2 %, West : 25.8 %, South : 27.0 % , East : 11.0 %

- **Installation of Auto Shredding Unit in each region will reduce the burden on Railways & Road transport for transporting DRI/ HBI/ Scrap to various part of country.**

- **Users get the shredded scrap at lower price in view of reduction in transportation cost & thus produce steel economically .**

THANK YOU