

Framework for non ferrous metal scrap recycling

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In news : Recently, the Ministry of Mines issued the Framework for non ferrous metal scrap recycling

Need for the framework

Following are the reasons for which the ministry has framed the framework:

- **Increased dependence on import:** As per the ministry, a major share of the demand is served by imports owing to the underdeveloped metal scrap collection, segregation and processing infrastructure in the domestic market.
- **Increased Demand:**
 - **The demand for aluminum** has increased at compound annual growth rate (CAGR) of 6.77 per cent. Considering the growing demand for aluminium in future, there will be heavy dependence on domestic production and imports.
 - **Current production of Aluminium:** It increased from 3.3 million tonnes (MT) in 2015 to approximately 5 MT in 2019 with a CAGR of 11.19 per cent.
 - **Copper demand** in India is expected to grow at 6-7 per cent due to increased thrust of Centre towards 'Make in India' and 'Smart City' programmes, development of industrial corridors, housing for all Indians by 2022, National Highway development project, Electric vehicles, rail project and defence production policy to encourage indigenous manufacture

- **Copper consumption:** The per capita copper consumption in India is expected to increase from the current level of 0.6 kg to 1 kg by 2025.
- CAGR: The import of copper has increased at CAGR 10.65 per cent in the last five years.
- The projected demand for copper due to electric vehicles is expected to increase by 1.7 million tonnes by 2027.
- **Against to sustainable development goals:** Huge dependence on non-renewable resources is not in line with these goals
- **Trade imbalance:** Meeting the growing demand by imports would lead to a trade imbalance. Thus, recycling becomes a good alternative as it requires 95 per cent less energy to recycle aluminium than to produce primary aluminium

The main objectives of this framework are:

- To promote a formal and well organized recycling ecosystem by adopting energy efficient processes for recycling leading to lower carbon footprints and to work towards sustainable development and intergenerational equity.
- To minimize the effect of end of life products on landfills and environmental pollution by promoting an environmentally sound processing and recycling system for secondary industry.
- To work towards economic wealth creation, job creation and increased contribution to GDP through metal recycling;
- To adopt data based analysis and policy making at all stages of recycling chain to determine and utilize opportunities available for enhancing extraction of non-ferrous metals, improve trade and commerce and derive economic benefits from scientific recycling.
- To promote 6Rs principles of Reduce, Reuse, Recycle,

Recover, Redesign and Remanufacture through scientific handling, processing and disposal of all types of non-ferrous scrap, through authorized centers /facility.

- To shift towards a circular economy in the coming years for base metals, critical raw materials and other essential materials.
- To achieve technological leadership in scientific methodology, process know-how, facilities and best practices for collection, processing and value addition in entire scrap recycling process.
- Create a mechanism for treating metal scrap and residues produced from dismantling and shredding facilities in compliance to Hazardous & Other Wastes (Management & Trans-boundary Movement) Rules, 2016 issued by MoEF&CC.

A brief note on the framework

- It seeks to use life cycle management approach for better efficiency in mineral value chain process
- Non-ferrous metal covered: It stresses on recycling of non-ferrous metals, including aluminium and copper
- The proposed framework envisages bringing both product and processing stewardship to enhance non-ferrous metal recycling.
- It focuses on regulating scrap collection, segregation and dismantling units with a proper framework for registration, data collection and reporting mechanism.
- It also aims to meet certain percentage of growing demand of copper domestically through recycling
- **Metal Recycling Authority:** As per the framework, the government plans to set up a Metal Recycling Authority by June to promote organised recycling of key non-ferrous metals such as aluminium, copper, zinc and lead. It will oversee the formulation of quality standards, certification and process standards for recycling by December

- **Bureau of Indian Standards:** It recommends establishing a Bureau of Indian Standards for scrap used for recycling and recycled products and for formulating standard procedures for recycling and processing of scrap in consonance with MoEFCC rules/guidelines for environmental protection.
- The framework will set norms for registration of the recycling units, ranking and performance evaluation of these units, and develop metal recycling zones and urban mining facilities

Ferrous & Non-Ferrous metal

- In metallurgy, non-ferrous metals are metals or alloys that do not contain iron in appreciable amounts.
- Ferrous metals contain iron making most of their metals a magnetic property

Some facts about Non-Ferrous Metal Sector

The Non-ferrous metals can be classified in broad categories as Base metals (e.g. aluminium, copper, zinc, lead, nickel, tin), Precious metals (e.g. silver, gold, palladium, other platinum group metals), Minor metals including refractory metals (e.g. tungsten, molybdenum, tantalum, niobium, chromium) and Specialty metals (e.g. cobalt, germanium, indium, tellurium, antimony, and gallium). Out of these:

- **Aluminium is the second most used metal** in the world after iron. India is third largest consumer of aluminum in the world with a consumption of 3.7 MT in FY 2020(E).
- **Copper is the third most important base metal** by value, accounting for roughly a \$130 billion industry annually at global level.
- **Zinc is the fourth most widely used metal across the globe.** According to International Lead and Zinc Study Group, around 13 million tonnes of Zinc is produced and

consumed every year in the world.

Lead is one of the most recyclable metals in the world. Although hazardous to our health, humans have been extracting and using lead for over 6000 years.