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VISION

“Metals are a shared inheritance, with the State in the role of a trustee on behalf of the people. It is the endeavor of Ministry of Mines to work towards utilisation of Non-ferrous metals in an environmentally sustainable manner keeping active stakeholders’ participation while maintaining high level of trust amongst all stakeholders.

Ministry of Mines will work towards creating a sustainable scrap recycling ecosystem, through adoption of optimal processes and standards, cutting edge technology, and environment friendly measures; and work towards creation of economic wealth and a shared national responsibility towards preserving our environment and inter-generational equity.”

2. INTRODUCTION

2.1 Background

Metal ores and minerals are non-renewable natural resources, which have an ever growing demand at global level and across sectors, making it imperative to reuse and recycle these metals. The National Mineral Policy 2019 of Ministry of Mines envisages making efforts towards augmenting supply of metals by developing processes for recovery of metal through recycling. The stated policy is in line with SDG Goal No 12, which states that current material needs do not lead to over extraction of resources or to degradation of environment. This calls for policy initiative focusing on improved resource efficiency and reduced wastage. Resource efficiency in the minerals and metals sector is realized through the implementation of sustainable development principles throughout the life cycle of minerals and metals. Therefore, this *National Non-ferrous Metal Scrap Recycling Framework, 2020* seeks to use life cycle management approach for better efficiency in mineral value chain process. It envisages bringing both product and processing stewardship to enhance Non-Ferrous Metal recycling.

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.

2.2 India's Growing Demand for Metals

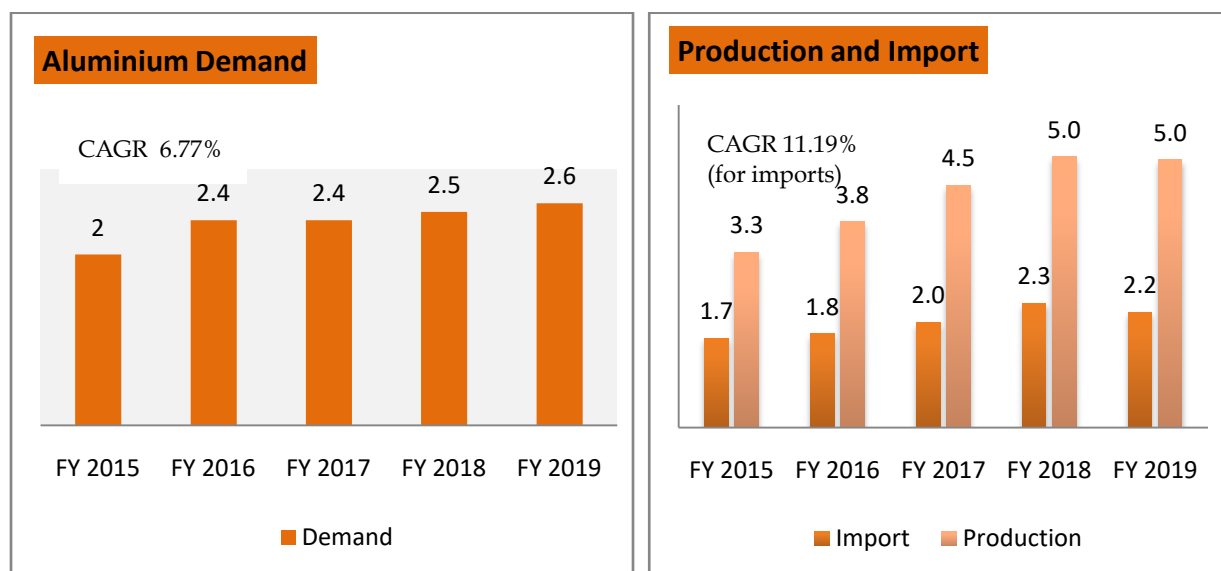
India is one of the fastest growing economies in the world. Strong domestic demand coupled with several reforms that the government has undertaken are on track to maintain the economic growth momentum going forward. As non-ferrous metals find widespread applications across the economy, the current policy measures provide a tremendous opportunity for the development of the Indian non-ferrous metals industry in the future. A major push is expected to emerge from the government's 'Make in India' initiative, which aims to increase the manufacturing share of GDP from the present 17 per cent to 25 per cent by the end of 2025¹. Under this initiative, the government has identified 25 sectors such as Automotive, Power, Defence manufacturing, etc. which have extensive applications of various non-ferrous metals, and therefore, can provide a boost to the industry. Furthermore, these metals are witnessing increasing applications in the existing sectors as well as exploring many newer applications.

(Source:- Make in India: The vision, new processes, sectors, infrastructure and mindset, Make in India website, <http://www.makeinindia.com/article/-/v/make-in-india-reason-vision-for-the-initiative>, accessed July 2016)

The demand for four major non-ferrous metals in India in the last 5 years is:

Aluminium

Figure: Demand – Supply (production and Imports) of aluminium (All figures in million tonnes)

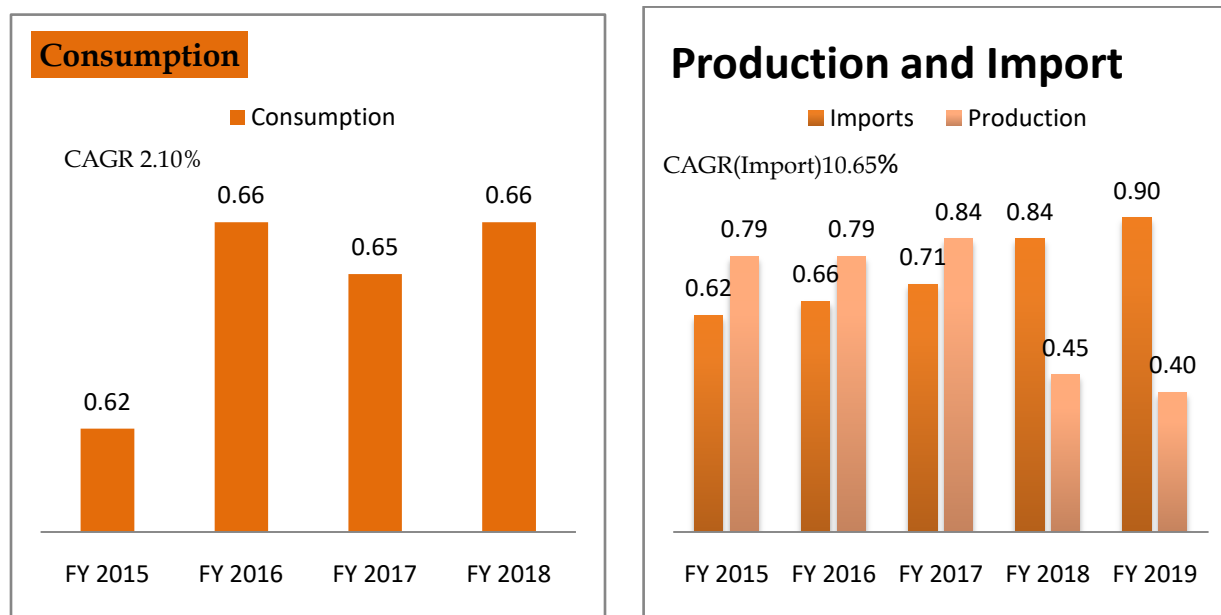


(source:- CRISIL Report, JNARDDC)

The demand for Aluminum has increased at CAGR of 6.77%. The production has also increased from 3.3 MnT in 2015 to 5 (approx.) in 2019 with a CAGR of 11.19%. Considering the growing demand for aluminium in future, there will be heavy dependence on domestic production and imports to meet that demand. In light of the fact that aluminium is an energy intensive sector, the demand for fuel, i.e coal, being the main energy source for aluminum extraction and processing, will also increase. Such dependence on non-renewable resources is not in line with global sustainable development goals and will lead to high carbon footprints. Also, meeting the growing demand by imports would lead to a trade imbalance. Thus, Recycling becomes a good alternative as it requires 95% less energy to recycle aluminium than to produce primary aluminium.

Copper

Figure: Demand – Supply (production and Imports) of refined copper (All figures in million tonnes)



(Source: M/o Mines)

The total consumption of refined copper in the country in 2018 is around 6.7 lakh tonnes. Electrical/Electronic Industry is by far the largest consumer of copper, where it is used in the form of cables and winding wires. Copper demand in India is expected to grow at 6-7% due to increased thrust of Government of India towards "make in India" and "Smart City" programmes, development of industrial corridors, housing for all Indians by 2022, National Highway development project, Rail project and defense production policy to

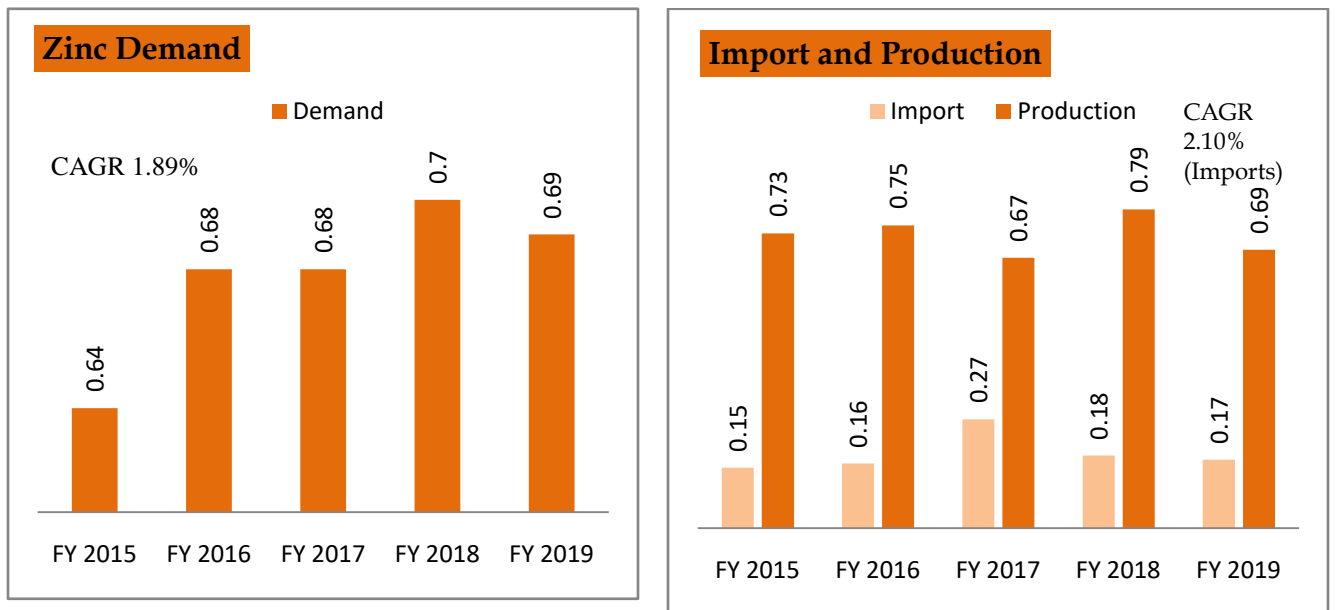
encourage indigenous manufacture. In addition to this, there is plan for green energy corridor for transmission of renewable energy. The market for Electric Vehicles (EV) is also expected to witness growth in coming years. Copper is essential to EV technology and its supporting infrastructure, and the increase in the electric vehicles in the market will have a substantial impact on copper demand. The projected demand for copper due to electric vehicles is expected to increase by 1.7 million tonnes by 2027.

The per capita copper consumption in India is expected to increase from the current level of 0.6 Kg to 1 kg by 2025. If India’s per capita copper consumption moves towards the worlds per capita copper consumption of 2.7 kg, India’s copper market has the potential for significant growth. The import of copper has increased at CAGR 10.65% in the last five years. As India is currently a net importer of copper, certain percentage of growing demand of copper can be met domestically through recycling.

(Source: IBM - Indian Minerals Yearbook 2019)

Zinc

Figure: Demand – Supply (production and Imports) of Zinc (All figures in million tonnes)



(Source:-HZL, M/o Commerce)

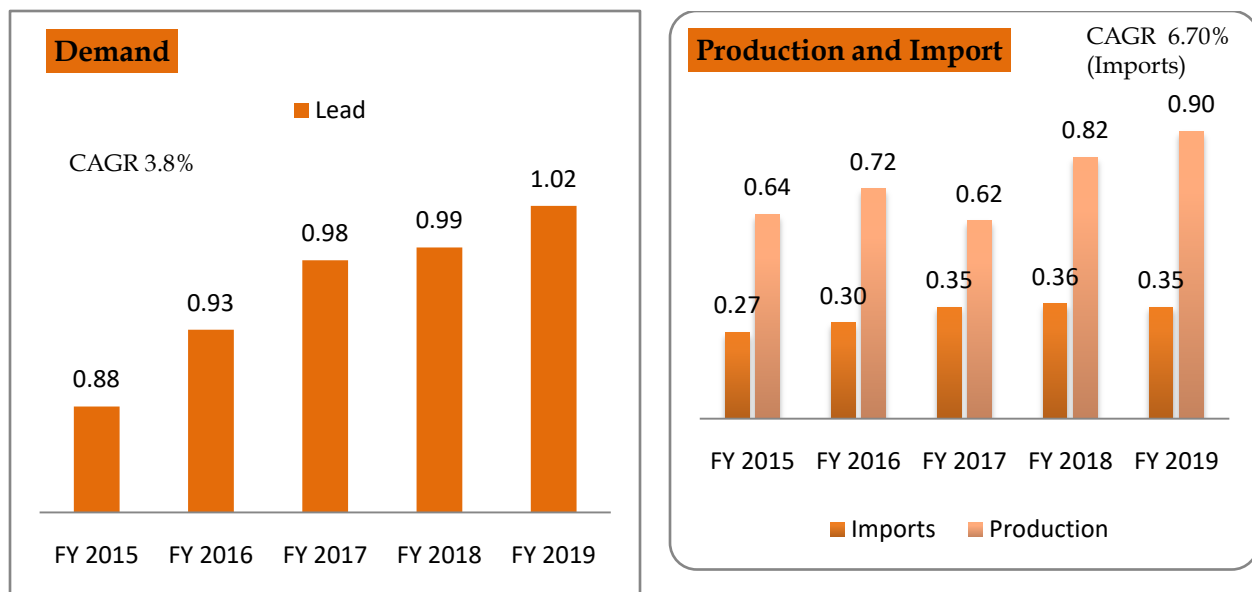
Zinc is the most widely used metal in the world after steel, aluminium and copper. It is mainly used for galvanizing steel, in alloys, batteries, rubber, paint and in many other sectors. Because of its resistance to non-acidic

atmospheric corrosion, zinc is instrumental in extending the life of building, vehicles, ships, steel goods and structures of every kind.

In case of Zinc, the demand has increased at CAGR 1.89% in last five years. The production however has declined and has a negative, -1.3% CAGR. Dependence on imports has grown over the years at the rate of CAGR 2.10%. To meet the demand domestically in view of low production trend and higher imports, recycling can be a good alternative.

Lead

Figure: Demand – Supply (production and Imports) of Lead (All figures in million tonnes)



(Source: HZL, M/o Commerce)

Lead finds its use in storage batteries, also dubbed lead acid batteries. India is likely to witness a substantial growth in the demand for lead batteries given that several sectors, including automotive, telecommunication, railways and defence, are set to expand in the years ahead. As a battery ingredient, lead is increasingly used in inverters, UPS and similar energy storage devices. The Indian market for lead acid batteries is currently estimated US\$7 billion, driven by the automotive sector, which consumes ~60% of lead acid batteries. The demand of Lead has been increasing with a CAGR of 3.8%, while there has been a consistent level of imports over last 5 years.

The environmental aspects of the lead sector has been a matter of concern, with informal, or backyard lead recycling from used batteries. Streamlining

collection, disposal and recycling of lead will help in increased lead recovery in an eco-friendly manner.

2.3 Recycling Metal – an important consideration

In light of above facts, recycling of non ferrous metal gains merit on following grounds:-

- a. **Social benefits-** India's mineral rich areas are under dense forests and inhabited by indigenous communities. Most of the impacts of material extraction, use and disposal occur domestically and negatively on a sizeable population. Extraction pressures have contributed significantly to conflicts due to displacement, loss of livelihood and have led to opposition by tribal and other local communities including fishermen in coastal areas. These social and political conflicts also pose significant threat to internal security. Recycling would put fewer burdens on the need of extraction thereby offsetting some of the risks arising out of social conflicts.
- b. **Environmental benefits-** Mineral rich areas overlap with heavily forested areas in the country. Extraction activities often result in ecological degradation. Reduced pressures from mining will help to reduce this ecological degradation. Reduced waste generation will not only reduce pollution associated with disposal but also save related costs. Also, resource extraction and use is highly energy intensive leading to significant GHG emissions. In 2007, CO₂ emissions were to the tune of 131 million tonnes from mineral industry, metal sector contributed about 122.7 million tonnes of CO₂. Furthermore, smelters of copper, zinc, lead ore etc. are significant contributors of CO₂ and SO_x.
- c. **Economic benefits:** In manufacturing sector alone, Indian companies could save up to Rs. 60,855 million by implementing resource efficiency measures, thereby improving competitiveness and profitability. Recycling based innovations can also give industries an edge in the export market. New industries can be created in the recycling sector with focus on innovative design and manufacturing from recycled material. As per an estimate from the Society of Indian Automobile Manufacturers (SIAM, 2015), with efficient recycling, India can hope to recover by the year 2020 over 0.18 million tonnes of aluminium scrap (source NITI Aayog, 2017 Strategy Paper on Resource efficiency). Also, reduced import dependence

for critical minerals will help to improve country's trade balance and promote economic stability.

- d. **Employment Generation Potential:** Recycling and adoption of related innovative methods may altogether give rise to the need of setting up of new industries that can contribute significantly to employment generation. Innovation in recycling process and manufacturing has the potential to create highly skilled jobs benefitting domestic industries and developing potential for export market. This may further prompt global companies to locate efficient design and/or manufacturing units here leading to increased skilled / unskilled labour demand. Working on improved recycling rates, it is estimated that 3 million direct jobs may be created in recycling facilities and conservatively, between 10 to 15 million indirect jobs in upstream related activities.

2.4 Challenges

One of the key challenges faced by the non-ferrous metals industry is its heavy dependence on import of metal scrap. A major share of metal scrap demand is served by imports owing to the underdeveloped metal scrap collection, segregation and processing infrastructure in the domestic market. NITI Aayog in its in-house study on socio economic impact of the material recycling industry in India has found out that the material recycling rates in India are well below global standards and is mostly conducted in the informal sector. Thus, strengthening material recycling, including metal recycling, under the formal sector can provide a good opportunity to cut down scrap imports.

The Global Bench mark Recycling Rate and Current National Recycling Rate of these metals are indicated below:

Material	Global Bench mark Recycling Rate	Current National Recycling Rate
Aluminium	98.5%	30%
Lead	>90%	85%
Copper	82%	20%
Zinc	>30%	10%

Currently, material recycling in India faces multifarious challenges, some of which are: -

- i. Lack of an organized / systematic scrap recovery mechanism.

- ii. Lack of sustained implementation of existing regulations on waste collection and recycling.
- iii. Lack of standardization of recycled products adversely affecting market adoption.
- iv. Import barriers adversely affecting input cost of operations.
- v. Lack of public awareness on the necessity of recycling.
- vi. Lack of specific skill sets on responsible methods and technologies.
- vii. Highly skewed business share between the formal and informal recyclers.

At the core of an effective material recycling eco system is a systematic, organized and user friendly collection, segregation and sorting process. Strengthening this value chain by segregating waste at source and then channelizing the disaggregated scrap through a network of scrap pickers and collectors and eventually to the scrap recycler through appropriate policy interventions would earn rich dividends.

2.5 Government Initiatives for Recycling

Ministry of Environment, Forest and Climate Change (MoEF&CC) is also in the process of formulating National Resource Efficiency Policy (NREP) which aims to mainstream resource efficiency across all sectors, wherein Aluminium sector has been considered as a priority sector.

Ministry of Steel has brought out Steel Scrap Recycling Policy which envisages a framework to facilitate and promote establishment of metal scrap recycling centers in India. Such centers will ensure scientific processing & recycling of ferrous scrap generated from various sources. The policy framework shall provide standard guidelines for collection, dismantling and shredding activities in an organized, safe and environmentally sound manner.

Similarly, NITI Aayog is proposing a comprehensive “National Material Recycling Policy” to drive concerned and coordinated national and state level programs, plans and actions towards ramping up material recycling in India in a formal and organized manner.

3. OBJECTIVES

The main objectives of this framework are:

1. 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.
2. 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.
3. To work towards economic wealth creation, job creation and increased contribution to GDP through metal recycling;
4. 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.
5. 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.
6. To produce high quality scrap for quality secondary production thus minimizing the dependency on imports.
7. To shift towards a circular economy in the coming years for base metals, critical raw materials and other essential materials.
8. 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.
9. 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.
10. To evolve a responsive ecosystem by involving all stakeholders.

4. IMPLEMENTATION GUIDELINES

The Framework aims to work towards having a sustainable non-ferrous metal recycling eco-system in the long run. The implementation of the Framework has to be seen as systems activity spanning multiple stake-holders with significant impact on economic, strategic, energy and environmental sectors.

Following implementation guidelines have been laid down for recycling of metal scrap:-

1. This Framework envisages setting up of a central authority for recycling of metals which may be called as Metal Recycling Authority. The Authority will act as facilitator to implement the Non-Ferrous Metal Scrap Recycling Framework.
2. The government will work towards establishing standards for Quality of scrap used for recycling.
3. Standard procedures for recycling and processing of scrap will be laid down in consonance with MoEFCC rules/guidelines for environment protection.
4. A mechanism for registration of segregators, dismantlers, recyclers, collection centers etc. will be developed for facilitating the recycling activities to transition to an organized sector.
5. Necessary steps will be undertaken for introduction of periodic inspection and review of the activities of scrap dismantling and recycling units.
6. Technology up-gradation and adoption of Best Available Technology (BAT) for scrap recycling to be promoted in line with existing environmental compliances. Provisions to be laid down to maximize recovery of material from all forms of waste, scrap and End of Life Products.
7. An institutional mechanism will be set up for carrying out detailed studies and advance research related to recycling of metals.
8. The government will encourage and provide support to Research & development (R&D) in Metal scrap recycling.
9. Specified metal recycling zones with facility for collection, segregation, dismantling etc. of metal scrap will be developed. Urban local bodies shall earmark areas and develop collection centers for recyclable wastes (including metal scrap). Such a facility will act as supply source of raw

materials for the recycling units and will be equipped with testing facilities to assess the quality of the recovered material.

10. It is proposed to set up Urban Mines, envisaged as a location to collect and hold large quantities of similar materials. The size of Urban Mine may be as per material requirement.
11. Provision for fiscal and non fiscal incentives for registered recycling units may be made to promote formal recycling operations and simultaneously discourage informal operations by reducing cost of ownership of operations.
12. Financial assistance and concessions may be provided to recyclers setting up a new recycling unit in MSME in consultation with Ministry of Finance and other stakeholders.
13. Process Standards, like Recycling Industry Operating Standards (RIOS) established by Institute of Scrap Recycling Industries (ISRI) or similar, will be put in place.
14. Minimum infrastructure requirement will be put in place for recycling units with clear minimum standards and criteria for the processing of recyclables to produce consistent, high quality streams of recyclable material which may, inter-alia, include:-
 - a. Appropriate equipment and use best available technology for recycling activities.
 - b. Unit handling imported scrap be equipped with radioactive detection equipment.
 - c. Adequate space for equipment, storage and handling of segregated wastes.
 - d. Adequate competent and trained manpower to operationalize and manage facility in a safe and eco-friendly manner.
 - e. Re-melting centers certification to laid down process standards to provide a systematic framework to achieve measurable continual improvement in their Quality, Environmental, Health and Safety (QEH&S) performance.
 - f. Adoption of updated BIS guidelines on occupational health and safety management (Occupational Health & Safety Management System as per IS 18001 & IS ISO 45001) to ensure safe operating practices. Also, engagement of competent and trained manpower to process scrap is to be encouraged.
 - g. Maintaining record of stock and flow of scrap and recycled metal including finished goods, energy use, water use, material use and environmental emissions etc. on a digital platform. This

information is to be periodically submitted to administrative authority.

- h. Scrap trading and recycling units to share the data with the concerned government agency periodically as decided by the Competent Authority.

Scrap Supply Chain

15. Efforts to strengthen and have a well organized Scrap Supply Chain will be made.
16. An Online market platform/ exchange platform for recycled/secondary metal will be developed. Auctions of Scrap, Waste and End of Life Materials by various organizations to authorized scrap distributors/aggregators/ recyclers will be facilitated.
17. Recyclers may explore the possibility of entering into collection contracts with industrial and commercial establishments.
18. Continuous efforts will be made to organize and formalize value chains and improve ease of doing business with domestic and international partners.
19. Number of collection and processing centers in the organized sector will be increased.

Facilitate Market Uptake

20. Persistent efforts will be made to facilitate market uptake of recycled material/product by introduction of Quality certification mechanism for recycled secondary metal. Recycled metal will be certified for its physico-chemical quality by accredited agencies, to enable its uptake by goods producers/manufacturers.
21. A '*recycled*' logo may be put on all recycled products to highlight circular economy.
22. It will be the government's endeavour to lay down 'Minimum Recycled Content Requirement' for manufacturing of select products. Government may set targets for producers/manufacturers for use of recycled/secondary metal in products. Step-wise targets for 'take back' may also be set for producers/manufacturers.
23. Public procurement of goods with targeted content of recycled/secondary metals will be promoted.
24. There is a need to promote Data Based Solution Approach in the Recycling Sector. An online portal will be developed for aggregating

Central and State Level database on identified indicators including number of recycling zones set up, number of recycling units in such zones, quantity and amount of metal recycled etc. This will help in understanding gaps and obtain pointers for required intervention.

25. Constant efforts will be made to have an organized recycling sector. Mechanism for ranking and evaluation of units based on performance and a sustainability framework may also be considered for encouraging the units to perform better.
26. Efforts will be taken to promote Start-ups in recycling eco-system so as to boost economic activity, creation of an organized recycling eco-system and employment generation.

Framework implementation and progress monitoring mechanism:

27. An Action Plan with indicative timelines for implementation and monitoring progress of this Framework has been drawn. Ministry of Mines, in consultation with MoEF&CC, NITI Aayog and other stakeholders will develop relevant indicators for monitoring.
28. Reporting mechanisms on the identified indicators will be developed.

5. Roles/ Responsibilities of Stakeholders

Development of an organized scrap recycling ecosystem requires mechanisms based on a system of shared responsibility (SR) involving all key stakeholders. It is critical that the roles and responsibilities of different stakeholders in such a shared responsibility system are defined.

5.1 Responsibilities of Dismantling & Scrap Processing Centers

The scrap processing centers to ensure that:-

1. The setup of centers is in consonance with the Factory rules and as per the Industrial norms laid down by the competent authorities.
2. Adequate and continuous training and evaluation of manpower to make them competent in handling metal scrap and thus minimizing risks.
3. Use of appropriate equipment and best available technology for recycling activities, including radioactive detection equipment for units handling imported scrap.
4. Facility maintains a record of stock and flow of scrap and recycled metal including finished goods, energy use, water use, material use and environmental emissions etc. on a digital platform. This information is to be periodically submitted to administrative authority.
5. Data pertaining to scrap trading and recycling be shared periodically with the concerned government agency.
6. Recyclers may explore the possibility of entering into collection contracts with industrial and commercial establishments.
7. Hazardous waste or recycling of material, outside the scope of a recycling unit, should be processed only by an authorized recyclers, having adequate capability.

5.2 Responsibility of Manufacturer

1. To ensure that any Extended Producer Responsibility (EPR) guidelines/ Regulations issued by MoEF&CC be strictly adhered to.
2. Designing the products to contain safer materials or designing products that are easier to recycle and reuse in efficient and environmentally sound manner.
3. To make adequate provisions relating to the classification, packaging, labeling and color scheme for dangerous substances. Proper coding of reusable component and material must be ensured. Information on

reusable components should be available in public domain for recycling units.

4. To provide dismantling information for each type of product and should assist / guide the recycling centers to expand the technological knowhow for segregation and recycling.
5. To facilitate the collection of recyclable either through its take back schemes or through tie ups with scrap recycling units and work towards achieving take back targets as set up by the government from time to time.
6. Work towards creating consumer awareness on environmental friendly management of wastes and inform them about special incentives on new products upon exchange or scrapping of end of life products.

5.3 Role of Public

1. Public should responsibly dispose scrap at designated scrap collection centers for their effective and environmentally sound processing.
2. It may ensure that scrap does not contain any hazardous waste. Hazardous scrap may be disposed off separately at the designated centers.
3. Efforts to be made to ensure that all scrap waste go to the authorized recycling units or to the manufacturers / dealers / distributors having “take back” facilities.

5.4 Role of Government

1. MoEF&CC to streamline the regulatory requirements, eliminating multiple clearances wherever feasible, for the recycling units.
2. MoEF&CC to prepare a Standard Operating Procedures (SOP) for obtaining clearances for setting up of recycling units.
3. Setting up an institutional mechanism for carrying out detailed studies and advanced research related to recycling of metals.
4. Creating public awareness about benefits of efficient scrap collection, segregation and recycling.
5. Providing necessary support to promote Research and Development (R&D) in Metal scrap recycling, conducting studies related to recycling and product designing using recycled material.
6. Setting up of a Metal Recycling Authority to act as facilitator to implement the Non-Ferrous Metal Scrap Recycling Framework.
7. Developing provision for fiscal and non-fiscal incentives in consultation with the Ministry of Commerce and Industry and Ministry of Finance.

8. Reducing compliance burden by rationalizing multiple registrations, licensing and reporting requirements and promoting Ease of Doing Business in recycling.
9. Central Pollution control Board (CPCB) / State Pollution control Boards (SPCBs) to ensure that any hazardous waste is routed to authorized recyclers only.
10. Specifying public procurement of goods with targeted content of recycled/secondary metals.
11. Laying down 'Minimum Recycled Content Requirement' for manufacturing of select products and to set up targets for producers/manufacturers for use of recycled metal in products. Step-wise targets for 'take back' may also be set for producers/manufacturers.
12. Devising action plans from time to time for effective Framework implementation.

5.5 Role of Recycling Authority

1. Developing technical, safety and environmental norms and standard operating procedures for handling and processing of scraps in consultation with MoEFCC, CPCB, BIS, etc.
2. Establishing Quality standards for scrap used for recycling in consultation with BIS.
3. Developing a mechanism for registration of segregators, dismantlers, recyclers, collection centers etc
4. Ensuring process standards, like Recycling Industry Operating Standards (RIOS) established by Institute of Scrap Recycling Industries (ISRI) or similar, are put in place.
5. Work in coordination with MoEFCC for effective enforcement of regulations through CPCB, SPCB and State Governments to prevent illegal scrap aggregation, processing and recycling.
6. Regular monitoring of scrap recycling facilities through a method of periodic inspections and review of scrap dismantling and recycling units.
7. Increasing the number of collection and processing centers in organized sector.
8. Develop performance indicators and a mechanism for ranking and evaluation of units in coordination with MoEF&CC and other stakeholders.
9. To work with State Governments and relevant nodal agencies in setting up specified metal recycling zones.

10. To work with State Governments and relevant nodal agencies in identifying and setting up Urban Mines.
11. Facilitating market uptake of recycled material/product by introduction of Quality Certification Mechanism for recycled secondary metal.
12. Developing an Online market platform/ exchange platform for auctions of recycled metal/End of life metal products.
13. Creation of a digital platform/ portal for aggregating central and state level recycling database.
14. Promoting Start-ups in coordination with MSME in recycling eco-system to boost economic activity
15. Developing norms for providing financial assistance and concessions to recyclers.
16. To engage with the State Governments on:
 - a. Incentives to recyclers/aggregators/ dismantlers/recycling units
 - b. Relief on conversion charges, stamp and registration charges
 - c. Necessary Logistics Support (connectivity) for the recycling units.

6. Implementation Mechanism

The implementation of this Framework will primarily be through Metal Recycling Authority. Initially, a division in Indian Bureau of Mines (IBM) will be notified as Metal Recycling Authority.

7. Relevant Acts/Rules/ Norms for Recycling Activity

1. Scrap recycling units are to adhere to below mentioned statutes and any other relevant guidelines issued by government from time to time:
 - a. Environment (Protection) Act, 1986, amended 1991.
 - b. Water (Prevention and Control of Pollution) Act, 1974, amended 1988.
 - c. The Air (Prevention and Control of Pollution) Act, 1981, amended 1987
 - d. Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules 2016.
 - e. Guidelines for environmentally sound management of ELVs, Nov' 2016 laid down by Central Pollution Control Board (CPCB) - AIS 219.
 - f. Waste regulations notified by the Ministry of Environment Forest (MoEF&CC), as applicable for the management and recycling of ELVs.
 - g. Atomic energy (radiation protection) Rules, 2004
 - h. Solid Wastes Management Rules, 2016
 - i. The Ozone Depleting Substances (Regulation and Control) Rules, 2000
 - j. The Batteries (Management and Handling) Rules, 2001
 - k. The E-waste (Management) Rules 2016
 - l. The Plastic Waste Management (Amendment) Rules, 2018.
 - m. Factory Act 1948 along with amendments 1987 and rules made therein
 - n. Any other rules notified by Ministry of Mines or any other Ministry or the State Government from time to time in this regard
2. Scrap recycling centers should preferably accredit their centers/ units with the latest version of quality standards viz.
 - ISO 9001 (Quality management system),
 - 14001 (Environmental Management System) and
 - 18001 (Occupational health and safety) besides compliance to other norms/rules as laid down in various statutory rules/regulations.

8. ACTION PLAN AND INDICATIVE TIMELINES

Action Point		Agency	Timeline by	
1.	Institutional Set- up	Setting up of Metal Recycling Authority (MRA)	M/o Mines & MoEFCC	End of Q1 of FY 2021-22
2.	Framework, Product and Process Requirements	Laying down overall framework for recycling of metal scrap	MRA in consultation with MoEF&CC	Q2-Q3 of FY 2021-22
		Laying down Quality standards for Scrap to be used in recycling	MRA in consultation with BIS or any other agency of similar nature	End of Q3 of FY 2021-22
		Laying down Quality standards/ Quality certification standards for final recycled metals	MRA in consultation with BIS or any other agency of similar nature	End of Q3 of FY 2021-22
		Laying down process standards for scrap	MRA	Q3-Q4 of FY 2021-22
		Laying down Minimum Infrastructure requirement for recycling units	MRA in consultation with MoEF&CC	Q3-Q4 of FY 2021-22
		Laying down 'Minimum Recycled Content Requirement' for manufacturing of select products.	MRA	Q3-Q4 of FY 2021-22
3.	Data Base Requirement	Developing framework for registration of collection, segregation, dismantling units.	MRA	Q1-Q2 of FY 2022-23
		Developing online mechanism for auction/ sale of scrap	MRA	Q2-Q3 of FY 2022-23

		from organizations to registered collection, segregation, dismantling units		
		Developing framework for collection of data on recycled products from registered recycling units	MRA	End of Q4 of FY 2022-23
		Developing a reporting mechanism for registered recycling units	MRA	End of Q4 of FY 2022-23
		Developing a mechanism for ranking and evaluation of units based on performance	MRA	End of Q1 of FY 2023-24
4.	Development Targets	Identify 10 recycling Zones and develop Scrap Collection and Dismantling Centers at each zone.	MRA	End of Q1-Q2 of FY 2022-23
		Development of Urban Mine facilities.	MRA	End of Q3 of FY 2022-23
