IMA SUSTAINABILITY COMMITTEE

// SECTORAL DECARBONIZATION ROADMAP AND STRATEGIC PATHWAYS

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// SUSTAINABILITY STATEMENT

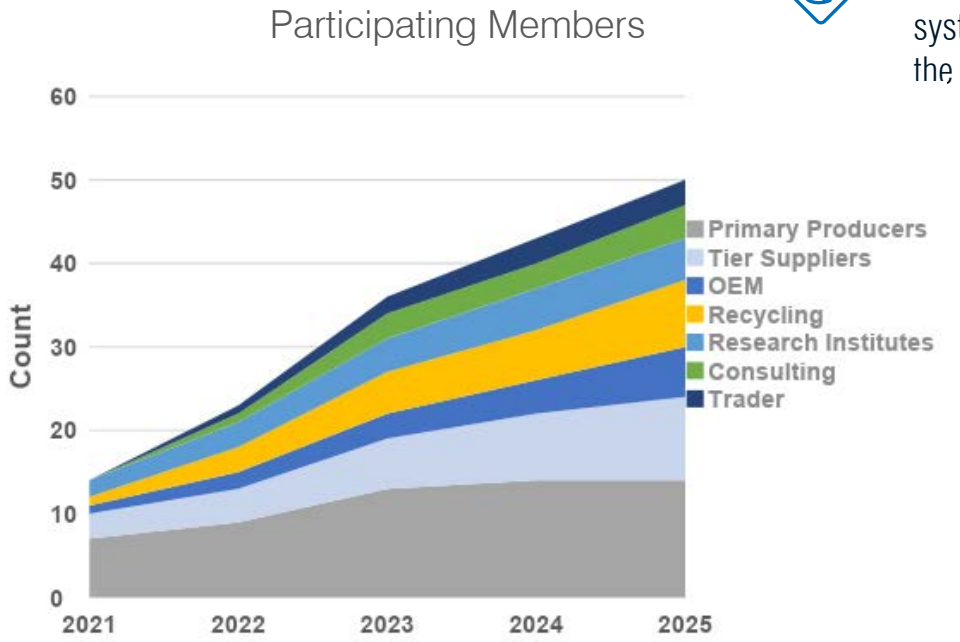
The members of the International Magnesium Association (IMA) are committed to make sustainability a guiding principle at all levels of operation, and to promote the same commitment to the whole Magnesium Industry. Our mission is:

01 To strive to reduce the impacts of greenhouse gases and natural resources by applying more sustainable technologies and using more renewable energy in our production processes;

02 To continuously reduce the negative environmental and social impacts within the whole value chain;

03 To strive to improve circular economy approaches for Magnesium to make end-of-life secondary Magnesium a useful source of greener material.

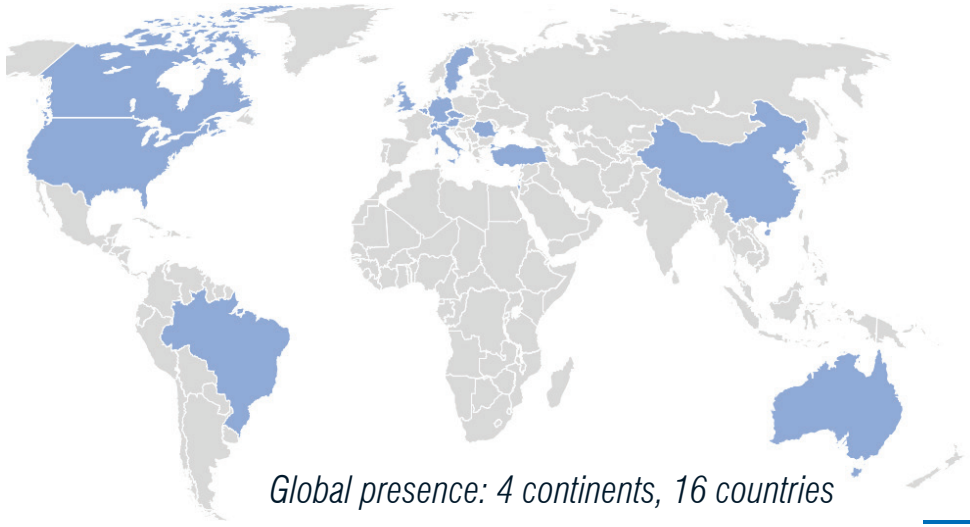
// COMMITTEE FACTS AND FIGURES



// WORKING GROUPS

WG1- Eco-Labelling: Establishment of a fair and representative eco labelling system and certification program for the magnesium industry

WG2- Alternative production methods and energy saving technologies: a knowledge transfer medium for the efficient transition of the industry into net zero



Global presence: 4 continents, 16 countries

Deutsches Zentrum für Luft- und Raumfahrt
German Aerospace Center

International Magnesium Association

SHORT TERM: PRESENT - 2026

Primary production

01 Sourcing greener ferrosilicon for horizontal, vertical, and integrated Pidgeon processes

02 A transitional ramp-up of renewable energy sources to replace fossil-based ones for all processes where applicable

03 Optimization of internal processes such as energy management, reuse of heat, reduction of losses, and other cross-industrial learnings

04 Rerouting and reducing scope 2 emissions to scope 1 where possible (investing in green electricity in the vicinity of plants)

Trader, OEM, Processing eg. casting, extrusion, etc.

01 Optimization of internal processes, technologies, and energy management

02 Talent upskilling in the design and development process to establish the competitive edge of magnesium in utilization and lightweighting

03 Increase of circular and efficient measures such as in-house scrap recycling

04 Support green initiatives on the primary side and invest in the cost of greener magnesium as a future feasible economic model

End-of-life / (Recycling of Mg)

01 Assessment of the current magnesium recycling capacities

02 Increasing recycled portion in blended secondary grades for alloys

03 Work on strategies to better utilize end-of-life magnesium scrap and build it into an economically feasible model

04 Establishment of the recycling working group and a stakeholder roundtable to propel demand/supply of recycling capacities in the relevant industries

// STRATEGIC PATHWAYS ACROSS THE VALUE CHAIN

Deutsches Zentrum für Luft- und Raumfahrt
German Aerospace Center

International Magnesium Association

MEDIUM TERM: 2027 - 2031

Primary production

01 Diversification of primary production sources based on a logistical-optimization approach to stabilize supply/demand

02 Investment in R&D for pilot projects with renewed and improved magnesium metal production processes

03 Sourcing responsible and green primary aluminum and scrap for Al-thermic process

04 Investment in scope 1 emission reduction through carbon capture and redirection of storage to other products

Trader, OEM, Processing eg. casting, extrusion, etc.

01 Defining a wider set of magnesium use cases and extended production techniques such as metal 3D printing and gigacasting

02 Building a circular model for the magnesium products on a company operation level to serve as a basis for a dynamic material flow tracker

End-of-life / (Recycling of Mg)

01 Development and testing of high quality secondary magnesium alloys from all scrap categories

02 Implementing an incentive strategy within the ecolabelling system for the responsible sourcing and use of recyled magnesium capacity in all use cases including alloying

LONG TERM: 2032 - 2050

Primary production

01 Continued investment in R&D for renewed and improved magnesium metal production processes

02 Decarbonization of all logistical routes related to primary production

Trader, OEM, Processing eg. casting, extrusion, etc.

01 Decarbonization of intermediate logistical efforts

End-of-life / (Recycling of Mg)

01 Reaggregate end-of-life scrap via highly efficient processes to close the loop by using secondary magnesium as feedstock for blended primary production and reusing existing infrastructure

** The overall pathways that are applicable to all stakeholders in the value chain are demonstrated in the visual roadmap on the next page with the combined color circles*

Decarbonising the Magnesium Industry: A Vision for 2050 with Key Milestones

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