



IMnI ANNUAL REVIEW 2023





INTERNATIONAL MANGANESE INSTITUTE

The International Manganese Institute (IMnI) is a not-for-profit industry association that represents Manganese ore and alloy producers, manufacturers of metallurgical products or chemical compounds, trading houses, industry service providers, companies involved in Mn business development, universities and research organizations around the world.

Founded in 1975, with headquarters in Paris, France, IMnI's mission is to provide vision and guidance to the Mn industry by promoting economic, social and environmental responsibility and sustainability to all stakeholders.

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MESSAGE FROM THE CHAIRMAN



“In spite of significant market challenges in 2023, the Manganese industry continues improving on sustainability”

2023 was a challenging year for the Manganese industry, marked by elevated power prices combined to slowing steel demand in many countries, headwinds in the real estate market in China, the war between Russia and Ukraine still heavily impacting Privat’s Manganese mines and smelters, and general cost inflation in many countries.

Despite this challenging situation, the Manganese industry continued improving on sustainability, social responsibility and environmental footprint in 2023, for example by investing to reduce its CO₂ emissions, with the help of the Manganese life cycle assessment (LCA) study conducted by the IMnI. This LCA shows the industry average CO₂ emissions (including scope 1, scope 2 and scope 3 emissions) for the manufacturing of 8 Manganese products.

A total of 17 Manganese companies (including 8 in China) participated in this study by submitting their individual LCA figures and benefited from a company

specific report to better understand their environmental performance, both at an individual and industry level, and improve their operations accordingly. And all the IMnI Members benefitted from the general report, including recommendations to reduce their environmental footprint.

In 2023, the Manganese industry also conducted studies through the IMnI, focussing on environmental, social and governance (ESG) factors of the Manganese alloys and high purity Manganese sulphate (HP MSM) value chains. The objective of both studies is to better understand the environmental challenges related to producing Mn alloys and HP MSM and share best practices among the industry.

A webinar dedicated to Manganese sustainability also took place in November, helping IMnI Members understand the role of LCA in the sustainability debate, the impact of the future Carbon Border Adjustment



Mechanism (CBAM) in the European Union, and how to reduce fossil CO2 emissions during Mn alloys production.

Next year, the Manganese industry will continue developing on sustainability, through various projects conducted by the IMnI, to ensure that Manganese, the “next major metal” (McKinsey), is produced and recycled in an environmentally responsible manner.

Patrick SACCO
IMnI Chairman
Managing Director of
Assore International Holdings

MESSAGE FROM THE EXECUTIVE DIRECTOR



“The IMnI membership expanded by 24% this year, another sign of the growing interest on Manganese”

2023 was another year of significant development for the International Manganese Institute, with **a total of 28 new companies joining the IMnI as members this year**, a rise of 24% from the end of 2022. [The IMnI membership now stands at 124 companies](#), another record high in the 50-year history of the Institute.

Overall, **the IMnI membership more than doubled since 2017**, ensuring a broader representation of the global Manganese value chain, both in terms of geography (IMnI Members operate in 43 different countries) as well as operating sectors (they are involved in mining and smelting, production of chemicals, batteries, steel, agriculture products, equipment for the ferro-alloy industry, logistics, shipments, trading, consulting and market research etc.). It also gives the IMnI more resources to improve the sustainability of the Manganese sector, expand the knowledge on Manganese benefits and challenges, and inform Members in advance of future regulations impacting the industry.

28 companies joined the IMnI in 2023!	Company type	Country
Aveks İç ve Dış Ticaret A.Ş	Mn trader	Turkey
Berry Alloys Ltd.	Mn alloy producer	India
Chongqing Changyuan Group Limited	Mn chemical producer	China
CITIC Commodities Pte. Ltd.	Mn trader	Singapore
CPM Group	Research on batteries	USA
CRU	Research	UK
Eternal Tsingshan Group Limited	EMM producer	Indonesia
Giyani Metals Corp.	Mn chemical future project	Botswana
Greenwich Metals (GMI)	Mn trader	Switzerland
GoodEarth GoodRock	Mn chemical producer	India
Guangxi Dameng Manganese Industry Group	Mn ore producer	China
Guangxi Hanse Industrial Co., Ltd.	Mn alloy producer	China
Guangxi Menghua New Energy Technology D	Mn chemical producer	China
GFG Alliance - Liberty Steel Bay	Mn alloy producer	Australia
Manganese X Energy Corp.	Mn chemical future project	Canada
Micromesh Minerals & Metals	Mn chemical producer	India
Musamu Resources Ltd.	Mn ore producer	Zambia
Nava Limited	Mn alloy producer	India
Sarda Group	Mn alloy producer	India
Shanghai Chuangsheng Industrial Co., Ltd.	Mn alloy producer	China
Sharp Ferro Alloys Ltd.	Mn alloy producer	India
Sherwood EMM Limited	Mn chemical future project	South Africa
Shreenath Fine Chem (I) Pvt. Ltd.	Mn chemical producer	India
SPIC Guizhou Jinyuan Suiyang Industrial Co. L	Mn alloy producer	China
S&P Global Platt's	Research	UK
The Metals Company (TMC)	Mn silicate future project	USA
Trek Metals Limited	Mn future project	Australia

Thanks to the active and dedicated engagement of its 6 Committees - HSE, Statistics, EPD, High purity Mn, China and India - as well as the valuable involvement of its staff, IMnI continues to be the global voice of the Manganese industry.

And with 16 Indian companies now Member of the IMnI, **a new India Committee** was set up this year to promote best practices within the Indian Manganese alloy sector and improve market



research in India. IMnI started this year collecting quarterly production figures from 30 major domestic Mn alloy producers.

The recently created **High purity Manganese Committee**, dedicated to Manganese used in batteries, continued its development and more than 30 companies joined its last meeting in November, another sign highlighting the growing interest on Manganese for the battery sector.

The IMnI finalised this year the **Manganese life-cycle assessment (LCA)**, analysing the environmental impact of production of Manganese ore, alloys, metal and chemicals, to help IMnI Members understand their environmental performance, both at an individual and industry level, and improve their operations. The final LCA report, showing the average environmental impact (including global warming potential) of production of Mn ore, SiMn, HC FeMn, Ref FeMn, EMM, EMD, Mn sulphate battery grade and agriculture grade, is available from [the IMnI extranet](#) (for IMnI Members only), and for sale to third-parties on the [IMnI e-shop page](#).

New sustainability studies were also started this year, to better understand the environmental, social and governance (ESG) factors of high purity Manganese sulphate and of Manganese alloys. New quarterly newsletters about

future European regulations impacting the Manganese industry (including the CBAM) are now available to all the IMnI Members. Additional market research reports were published on the Manganese sector in Zambia, India, Vietnam, on Manganese metal in China, and various other key industry topics. Several successful events were also organised, including the Electrolytic Manganese conference in China in March and the [IMnI Annual Conference in India in June](#).

This event took place in Bangalore and attracted more than 220 international delegates, to learn about the latest market trends, network with prominent Manganese producers, users and traders, and visit major Indian Manganese alloy smelters (Sarda, Hira & Godawari, Abhijeet). Thanks to the commitment of all IMnI Members, the IMnI Annual Conference remains **the world's largest event dedicated to Manganese!**

Finally, the [2024 IMnI Annual Conference](#) is confirmed in Muscat, Oman, from Monday, June 3 to Thursday, June 6, with technical visits of 2 domestic Manganese mines, a silico-manganese smelter and a steel mill. So do not miss this opportunity to learn from industry experts, reconnect with the Manganese community and visit Manganese sites in Oman!

Aloys d'HARAMBURE
IMnI Executive Director



IMnI IN 2023

January – March

- **AVEKS AS, CITIC Commodities Pte. Ltd.** and **CPM Group** join as Affiliate Members, **SherwoodEMM Limited, Giyani Metals Corp., Manganese X Energy Corp., The Metals Company (TMC)** as Mn Chemical Producers, **SPIC Guizhou Jinyuan Suiyuan Industrial Co., Ltd., Guangxi Hanse Industrial Co., Ltd., Guangxi Dameng Manganese Industry Goup Co., Ltd., Musam u Resources Ltd., Sarda Group, Shanghai Chuangsheng Industrial Co., Ltd., GoodEarth|GoodRock** and **Sharp Ferro Alloys Ltd.** as Ordinary Members

- IMnI 17th EPD Conference & 12th International Forum of Mn Electrolytic Products takes place on March 8-9 in Nanning, Guangxi, China, and is attended by 190+ delegates (including 10 non-Chinese). Experts and specialist of the Manganese industry, representatives from upstream and downstream industries in China and abroad, are invited to share their opinion on the development and

potential of the Manganese industry. The organizers are China Mining Federation Manganese Branch, the National Committee of Manganese Industry Technology, Guangxi Manganese Industry Association, South Manganese Group Limited and the International Manganese Institute (IMnI). An optional technical tour is scheduled on Friday 10 to 2 high purity Manganese sulphate plants based in Qinzhou, Guangxi: Guangxi Manganese New Energy Technology Co., Ltd. and Qinzhou Nanhai Chemical Co., Ltd.

- IMnI organizes a networking cocktail in Singapore for the IMnI Members during the Fastmarkets conference, attended by more than 100 international delegates from 60 companies, including 50+ Chinese delegates. The cocktail is sponsored by Assore, Autlan, Eramet, Glencore International AG, Kudumane Manganese Resources, Ntsimbintle Marketing and Trading Pte. Ltd., OM Holdings Ltd., Tshipi é Ntle Manganese Mining and World Metals & Alloys (WMA)

- Aloys d'Harambure, IMnI Executive Director, moderates the session *"Updates and Discussions on Manganese Ore and Ferromanganese"* at Fastmarkets Ferroalloys Asian Conference. Arnaud Vigier, Manganese Ore Sales Director of Eramet, Edward Li, Executive Director of Qunxian Group, Justin Brown, Managing Director of Element 25 and Adrian Low, Managing Director of OM Materials (S) Pte. Ltd. participate in this panel discussion

- Aloys d'Harambure, IMnI Executive Director, travels to Zambia to meet Manganese miners, traders and smelters and to investigate the domestic Manganese industry. A complete report is published exclusively for the IMnI Members

April – June

- **Shreenath Fine Chem (I) Pvt. Ltd.** and **Micromesh Minerals & Metals** join as Mn Chemical Producers, **CRU**, **Eternal Tsingshan Group Ltd.** as Affiliate Members and **Trek Metals Limited**, **Nava Limited** and **Berry Alloys Ltd.** as Ordinary Members

- IMnI High Purity Manganese Products Committee is set up comprising 17 companies Member of the IMnI

- IMnI 47th Annual Conference is held in Bangalore, India. With a record attendance of 220+ international delegates from 120 companies based in 35 countries, the IMnI 2023 Annual Conference remains the world's biggest event of the Manganese industry. Structured around the theme "India: the new engine driving the Manganese Industry"

July – September

- **S&P Global and Greenwich Metals (GMI)** join as Affiliate Members and **Chongqing Changyuan Group Limited** as a Mn Chemical Producer

- IMnI India Committee is set up comprising 14 companies Member of the IMnI

- Aloys d'Harambure, IMnI Executive Director, and Eva Yang, IMnI China Representative, visit major Manganese producers and traders in Vietnam.

October – December

- **Liberty Bell Bay-GFG Alliance** join as an Ordinary Member and **Guangxi Menghua New Energy Technology Development Co., Ltd.** as a member of the Chemical Products Division

- Aloys d'Harambure, IMnI Executive Director, travels to Ivory Coast and Ghana to meet Manganese miners and investigate the local Manganese potential

- IMnI organizes a webinar on sustainability in the Manganese industry (available in video for IMnI Members)

- IMnI partners with Fastmarkets for their International Ferro-Alloys Conference in Prague. Gautam Kumar, Director of Asia Minerals Limited and Sirsendu Mukherjee, Chief Operations-FAMD of MOIL, participate in the Manganese panel discussion

- IMnI organizes a networking cocktail in Prague for the IMnI Members during the Fastmarkets conference, attended by 60+ IMnI delegates

- A digital workshop is jointly organized with RCS Global on the final HPMSM project (available in video for IMnI Members)

- IMnI organizes a webinar on the Life Cycle Assessment of Manganese products conducted by Sphera (available in video for IMnI Members)

MANGANESE IN 2023

January to March

- Eramet and Nouvelle Gabon Mining declare force majeure after a landslide on December 24, resulting in the closure of the Transgabonaise Railway (TGR), which resumed its train traffic in February
- Spain's FerroAtlantica, a subsidiary of Ferroglobe, temporarily reactivates one of its furnaces in January, five months after halting production of silicon metal, ferro-silicon and ferro-manganese at its three facilities in Spain due to high energy prices
- In February, Sakura Ferroalloys, Assmang's jointly owned ferromanganese smelter in Malaysia, shuts down one of its HC FeMn furnaces on low sales prices and increasing input costs, while Assmang also permanently closes Furnace no.1 at its Cato Ridge operation in South Africa due to deteriorating market conditions
- Umicore plans to start manufacturing high lithium manganese (HLM) cathode active materials, to be produced in Poland and South Africa, which currently produce NMC battery materials, as well as a planned factory in Canada. Commercial production of HLM is slated to begin in 2026
- The Nelson Mandela Bay municipality in South Africa takes legal action to shut down nine illegal Manganese ore logistics companies, following the issuance of 19 noncompliance notices in March
- Jindal Shadeed, an Indian steel producer operating in Sohar, Oman, is building a 48,000 mt capacity SiMn smelter set to start commercial production in Q4 2023, using a 20 MVA furnace from Galsasi, with the SiMn output intended for internal use in the company's steel plants in Oman
- Rising power tariffs in India, particularly in West Bengal and Andhra Pradesh, poses a threat to the competitiveness of local Mn smelters, with rates up to 30% and

35% higher than in neighbouring states, respectively

- In February, the Supreme Court of India lifts the 12-year ban on mining activities in Karnataka, including the Ballari region, allowing production capacity to rise from 2.4 million tons to 3.7 million tons in the coming years
- Manganese is mentioned in the list of 34 critical raw materials, including Manganese (battery grade), identified in the European Critical Raw Materials Act (proposal published by the European Commission on March 16, 2023), which aims at ensuring EU access to a secure and sustainable supply of critical raw materials
- Burkina Faso government authorizes Afro Turk to exploit Tambao Manganese, which is one of the largest Manganese reserves in the world, hosting more than 100 million tonnes of ore according to estimates

April to June

- Chinese major EMM producers members of the country's EMM Alliance agreed to further cut output by 10% from the previously-agreed 40%
- India's Chhattisgarh ferroalloy producers, paying a competitive power tariff of about US¢ 7.5 per kWh, await government scrutiny for over 15 Mn alloy projects, facing potential power tariff changes and project approval delays
- In April, Mexico imposes a 40.25% antidumping duty on ferro-silico-manganese imports from India, following a review initiated in October 2021 that extended existing anti-dumping duties on silicomanganese against India for an additional 5 years

- India's IMFAL (Impex Metal & Ferro Alloys Limited) shuts down indefinitely both furnaces at end-April due to a significant increase in Andhra Pradesh's power tariffs, following an earlier closure in January

- The Transnet Hotzatel-Port Elizabeth export line in South Africa achieves a record-high Manganese ore transport volume of 9.78 million tons over the 2022-23 financial year (ended on April 1), concluding with a yearly maintenance shutdown on the PE Manganese main line during April 12-21

- In April, Togo announces the establishment of the state-owned Société Togolaise de Manganèse (STM) to exploit an estimated 8.5 million tons of Manganese reserves at Nayéga project over 15 years

- Gabonese railways resume operations on April 21 after a three-week interruption caused by a derailment, with services restored between Ivindo and Mouyabi stations following substantial repair work

- Major Chinese EMM producers that are part of the country's EMM Alliance agree to suspend output for 40 days during the May 1 - July 10 period

- South Korea plans to extend the anti-dumping duties imposed on Vietnamese and Indian silico-manganese in 2017 for another five years, following the conclusion of an ADD investigation and the extended ADDs would be between 2.3-11.04%

- In May, the majority of high-purity Manganese sulfate producers in China extend production suspension amid weak orders and production control, with only a few resuming operations based on major customer requirements

- Pokrovsky Mining and Processing Plant (PGOK), Ukraine's largest Manganese ore producer, partially resumes production in April after sitting idle since December 1, 2022

- Giyani Metals gains approval to export 100 tons of Manganese oxide from its K.Hill project in Botswana to a Johannesburg demonstration plant, showcasing its low-carbon process for battery-grade high-purity Manganese sulphate monohydrate, crucial for lithium-ion battery cathodes

- In June, Transnet Freight Rail (TFR) completes the construction of the Mamathwane crossing loop in the Northern Cape, South Africa 30 days ahead of schedule, adding 1.5 million tonnes of capacity, projected to eliminate approximately 40,540 trucks from the roads annually

July to September

- Manganese miners in Chiatura, Georgia, end their 18-day strike after Georgian Manganese agreed to reverse ore quotas and honor a 12% salary increase, with mines resuming on July 1

- Vibrantz Technologies announced in July the construction of a new pilot plant to process high-purity Manganese sulfate (HPMSM) onsite at its facility in Tampico, Mexico, to meet the growing demand for battery-grade Manganese sulfate

- Ferro-alloy manufacturer OFZ based in Slovakia, decides in July to relocate almost half its production to Uzbekistan, to start production in October with electricity costs five times lower than in Slovakia

- Transnet Freight Rail (TFR) faces disruptions in Manganese transport for export as its rail link to the Port of Port Elizabeth suffers damage from rough sea conditions, leading to temporary train suspension on September 16, with alternative measures for reduced operation and repair work in the following week

- Ningxia Tianyuan, holding over 50% of China's total EMM capacity, files for

bankruptcy and debt restructuring at September-end, emphasizing it will not impact operations

- China's EMM Alliance's new output plan, announced in late September, calls for production to increase to 70% of total capacity, compared with 50-60% previously
- By September-end, China SiMn market focuses on the energy consumption control policy in Shizuishan, Ningxia, where SiMn plants decided to cut production cuts by about 40,000-90,000 tons monthly, due to hierarchical energy consumption control measures
- Ferroglobe reported an 8.4% year-on-year decrease in July-September shipments of Manganese-based alloys, influenced by sluggish steel markets in Europe, with the average sales price down by 34%; the company plans to accumulate inventory ahead of the phased idling of its French operations in the fourth quarter

October to December

- The European Commission releases technical legislation for the carbon border adjustment mechanism (CBAM) transitional phase from October 1, covering reporting obligations and embedded emissions calculation methodologies for CBAM goods including Manganese
- Chinese EMM producer Jingxi Daxinan resumes its 40-50 t/d output in October, following the end of a round of environmental checks initiated by the Guangxi local government in south China
- World Metals & Alloys (WMA), a Manganese ore trading company, cuts its South Africa-origin Manganese ore exports by 80% from October due to lower prices, increased transport costs, and unfavorable exchange rates
- Ghana Manganese Company (GMC), unaffected by Ningxia Tianyuan Manganese's recent debt-restructuring, maintains normal

operations at the Nsuta mine, expecting to produce around 3.2 million wet metric tons of carbonated ore this year, and considers setting up a sinter plant at the mine in the coming years

- In November, OM Holdings announces selling 90% of its stake in OM Materials (Qinzhou) Co Ltd for \$25 million to Beijing Kunpeng Hongsheng Metal Co Ltd, maintaining a strategic relationship for marketing and procurement services
- The Zaporizhzhia and Nikopol ferroalloy plants in Ukraine shut down for the winter to conserve energy and conduct necessary repairs, citing last year's infrastructure attacks and water supply disruptions
- Several Chinese Mn alloy plants in Pingluo, Ningxia adjust production plan, resulting in a combined daily output reduction of about 1,000-1,200 tons at the beginning of November, and up to 1,500 – 2,000 tons per day by the end of November
- Indian ferro-alloy producer Nava projects the full recovery of its Odisha silico-manganese plant's 50,000t/yr capacity, suspended in August due to raw material handling system damage, with maintenance on track for operational status by December and full production resumption in January 2024
- In later November, Indian state Andhra Pradesh's government cut electricity duties, providing limited relief to state-based ferro-alloy industries; the revised measures include reducing the electricity duty for the rest of the fiscal year ending March 2024 from 1 rupee to 0.06 rupees per unit
- On November 21, Comilog received the floating Manganese transfer station Nord Gabon at the New Owendo International Port, improving efficiency in transshipment for Capesize vessels, with full operations starting in December after testing since January 2022



IMnI MARKET RESEARCH

"IMnI provides the most comprehensive manganese industry market research available."

Circulated on a monthly basis, [IMnI reports](#) examine both production and consumption, and the balance between the two, looking at the industry from both sides of the supply demand equation. The primary objective of these reports is to offer an analysis of the immediate past, which can provide the basis for Members to develop a greater understanding of their business.

IMnI Executive Director Aloys d'Harambure examines manganese ore and alloy consumption as they relate to the steel industry with the application of an industry model. This systematic approach provides increased accuracy to better understand and anticipate changes in the industry. A detailed analysis of IMnI data is also published on a monthly basis.

Our [China](#) and [Rest of the World Weekly](#) reports summarize the most important news of the industry during the week.

IMnI also issues [monthly trade matrices for Mn Ore, Alloys, EMM and EMD](#), [steel production statistics by country](#), and a [database of current and future manganese producers](#).

All IMnI data is available to IMnI Members via our website extranet.manganese.org

MESSAGE FROM THE STATISTICS COMMITTEE CHAIRMAN



"2023 marked the end of Covid-19 related restrictions in China, but constraints remained on logistics, economic growth and inflation, high power prices and a slow steel market, impacting many Manganese producers around the world"

Global steel output remained basically stable in 2023, with production cuts in the Americas and Europe offsetting a small rise in Asia (driven by China and India). In spite of the crisis of the Chinese real estate market, a major consumer of steel, China's output of crude steel expanded by 2% from 2022, thanks to larger exports of competitively-priced material to other countries. Once again, India remained the world's most dynamic steel market, growing by 12% (+13.5 million mt of crude steel produced from 2022). In Europe, major steelmakers cut output further in 2023 (-9%) on slow demand and high production costs. The situation is less dramatic in North America, but local producers cut output by 3% in the region (-1% in the USA) due to inflation and economic uncertainty and difficult logistics. This slow steel market logically resulted in sluggish demand for Manganese alloy in many countries, impacting smelters and Manganese miners.

Meanwhile, demand for Manganese from the battery industry (through precursor for cathode active material, or pCAM)

continued expanding in 2023, driven by China. Although this segment of the industry only represents 3% of total Manganese ore consumption (compared to 96% for steel and 1% for agricultural products), the IMnI market research service on high purity Manganese products used in rechargeable batteries, for electric vehicles and energy storage systems continued improving, with new reports and supply/demand forecasts published for IMnI Members.

A new IMnI Committee dedicated to the Indian industry was set up in September 2023, to serve as a platform to promote Indian Manganese companies and improve market research India, a very important country for the steel and Manganese sectors. IMnI also started this year collecting quarterly production data from 30+ major Indian Manganese alloy producers, to better track the evolution of local Manganese output. A full report on India's Manganese alloy market was also published in May, just before the [IMnI Annual Conference in Bangalore in June](#).



The IMnI staff also conducted on-site technical visits in Vietnam, Zambia, Ivory Coast and Ghana in 2023, collecting exclusive information for all IMnI Members about local Manganese producers and their potential for the future. Another report was published on the Electrolytic Manganese Metal (EMM) market in China, to better understand demand challenges and substitution trends. And several newsletters informed IMnI Members about the upcoming CBAM regulation in the European Union. All the IMnI reports are available for [IMnI Members](#) from the [IMnI extranet](#).

Today, IMnI is the best source of information available on Manganese, in terms of market research but also in terms of sustainability and environmental impact. Our statistics are the most accurate in the manganese community, as they are based on data collected on a monthly basis from major Manganese producers. IMnI market research reports analyse production, demand, but also inventory, imports and exports for all major Manganese products (ore, 3 types of alloy, metal, dioxide, sulphate, etc.).

In 2024, we plan on improving the IMnI market research further, by analysing in more details the high purity Manganese products used in rechargeable batteries, including Manganese carbonate (MnCO_3), Manganese tetroxide (Mn_3O_4) and Manganese sesquioxide (Mn_2O_3).

Guillermo RECIO
IMnI Statistics
Committee Chairman

The background is a deep blue gradient. It features a faint, stylized globe on the left side, with a network of white lines and dots overlaid on it, suggesting a global or digital theme. There are also some abstract light blue shapes and dots scattered across the background.

STATISTICAL PACKAGES ARE AVAILABLE FOR NON-MEMBERS:

enquire at stats@manganese.org

IMnI offers the most comprehensive and detailed statistics available on manganese

Manganese production, demand and inventory statistics collected directly from IMnI Members on a monthly basis.

Monthly import and export data by country for manganese ore, silico-manganese, high-carbon and refined ferro-manganese, manganese metal and manganese dioxide. Steel production report, country-by-country every month.

Complete database of manganese producers and future projects, with filter by product and by country, with capacity.

Manganese ore production

Global Mn ore supply expanded by 1% MoM in October, to nearly 1.7 million mt Mn contained (-7% YoY) with higher supply witnessed across most regions

Jan.-Oct. production was 0.3% higher than in the same period of last year

Mn Ore Supply & Demand in October 2023								
(in '000 mt Mn contained)	Supply	MoM % Change in Supply	YoY % Change in Supply	YoY % Change in supply since Jan.	Demand	MoM % Change in Demand	YoY % Change in Demand	YoY % Change in demand since Jan.
Africa & Middle East	1,125	0%	-9%	0%	42	-7%	6%	-4%
Asia & Oceania	417	1%	-12%	1%	1,602	4%	22%	9%
Americas	85	4%	14%	20%	47	-3%	10%	-15%
C.I.S.	65	20%	124%	-21%	103	0%	23%	-18%
Europe	0	0%	-84%	-70%	59	-7%	6%	-4%
World	1,692	1.3%	-6.7%	0.3%	1,854	3.1%	20.0%	5.1%

Source: International Manganese Institute (IMnI)

Africa & Middle East

- Supply remained essentially stable in October from the previous month (-9% YoY), with only South Africa increased production marginally
- Production during the first 10 months of 2023 was also largely stable compared to the same period of 2022 as lower production in Gabon (due to a landslide in Q1) offset higher supply in S.Africa, Ivory Coast and Ghana

Asia & Oceania

- October supply moved up by 1% from the previous month (-12% YoY) as higher supply in India compensated for production cuts in Malaysia
- Jan.-Oct. output increased by 1% on the same period last year, on higher production by miners in Australia, India, Malaysia and Myanmar, while supply dropped in China

Mn ore statistics by country are available [here](#) (for IMnI Members)



More details on Mn ore statistics are available [here](#) (for IMnI Members)



MANGANESE MARKET OVERVIEW

"In 2023, the Manganese industry recovered slowly as global demand waned"

Steel

Global steel production expanded by 2% in 2023

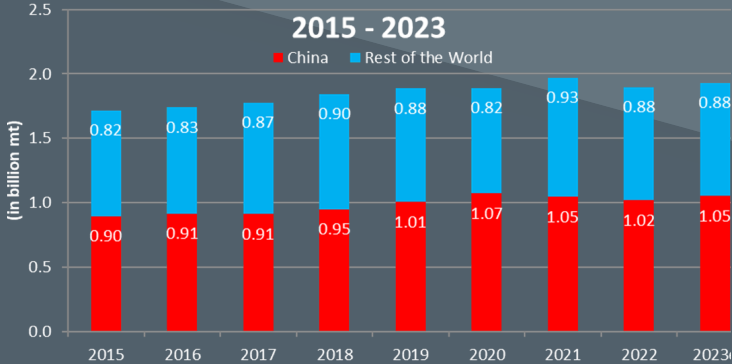
The world's steel output reached 1.93 billion mt in 2023, up from 1.9 billion mt in 2022 despite a challenging economic slowdown in many regions. It means around 33 million tons of crude steel supply have been added to the market compared with 2022, according to a first estimate by CRU and Worldsteel.

In China, steel production rose by 3% in 2023 to an estimated 1.05 billion tons, as the demand remained firm across major steel-consuming sectors including automotive and consumer durables, offsetting the depressed demand

from the real estate sector. The government also launched stimulus plans to boost construction and infrastructure investment. China now represents 55% of the world's output of steel. Meanwhile, steel exports witnessed a 36% year-on-year growth, thanks to a competitive pricing strategy, and the Chinese yuan depreciation.

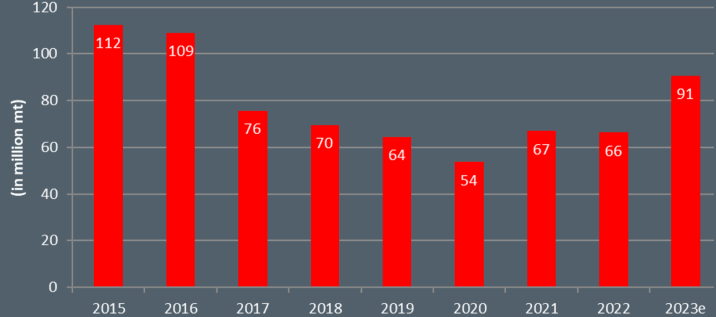
Outside China, supply in 2023 remained essentially stable as higher output in Asia exc. China (+3%), the C.I.S (+5%), as well as Africa (+4%) offset lower production in Europe (-6%) and the Americas (-3%), facing monetary tightening and high energy costs.

Steel production in China vs the rest of the World



Steel exports from China

2015 - 2023



Source: China Customs, IMnI; e = estimate

Steel production statistics by country are available [here](#) (for IMnI Members only).

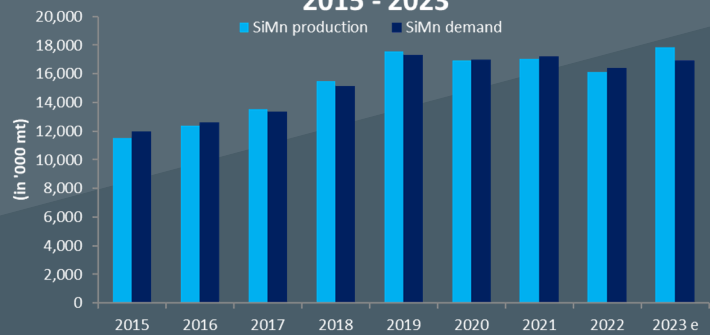
SiMn

Production increase driven by Asian producers, particularly in China

Global SiMn production surged by 11% in 2023, to around 17.9 million mt, predominantly led by heightened output in China. However, demand from the steel industry only saw a modest recovery of 3%.. Around 1.7 million mt of SiMn supply was added in 2023 as higher output was witnessed across major producers in Asia, notably in China (+19%), India (+2%), Malaysia (+14%) as well as South Korea (+28%). This offset supply cuts in Europe (-20%), the C.I.S (-15%), the Americas (-12%), Africa (-20%) and Oceania (-13%). China's output rebounded in 2023 after contracting for the first time in many years in 2022, supported by restocking by steelmakers, the Chinese government and the futures SiMn market. Consequently, China's contribution to

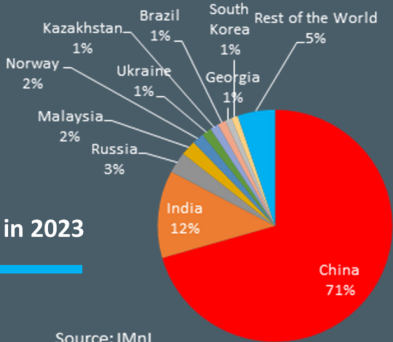
the world's total supply increased to 71% in 2023 from 63% in 2022. Supply in India grew by 2% from 2022, accounting for 12% of the world's total, a decrease from 16% in 2022 primarily due to limited overseas demand. Meanwhile, India's domestic consumption moved up in response to strong steel demand. Despite being the 3rd largest SiMn producer for years, Ukraine experienced a significant decline in production, almost halving due to the impact of the war. As a result, Ukraine is currently listed as the 6th largest SiMn producer, following Russia (+16% YoY), Malaysia (+14% YoY) and Norway (-16% YoY). Both Russia and Kazakhstan benefited from lower production in Ukraine.

SiMn production and demand
2015 - 2023



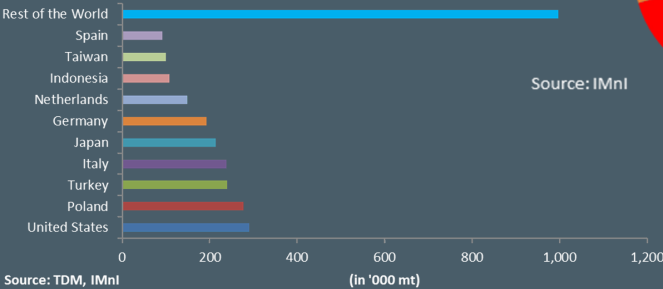
Source: IMnI, e = estimate

Top 10 SiMn producing countries in 2023



Source: IMnI

Top 10 SiMn importing countries in 2023



Source: TDM, IMnI

Statistics for production, demand, inventory and trade of Mn ore & alloy are available by [region here](#) (for IMnI Members only).

HC FeMn

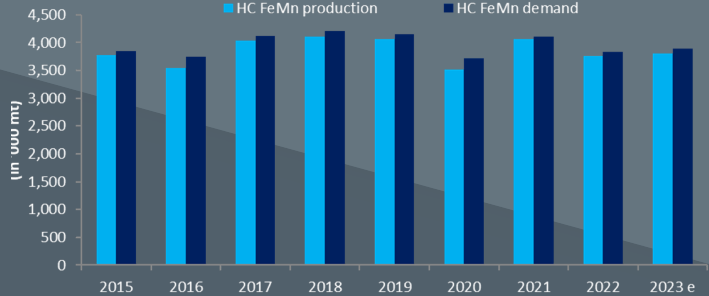
Global production expanded in 2023

The world's output of high-carbon ferro-manganese moved up by 39,000 mt (+1%) in 2023 from 2022, reaching 3.8 million mt. This moderate growth was driven by higher supply in Asia (+6%) and the Middle East (+19%) compensating for lower output in Europe (-20%), the Americas (-1%), and Oceania (-54%). Supply in China expanded by 5%, now representing 38% of the global output, an increase from 37% share

in 2022. In India, production rose by 14%, with a 17% increase in exports. Key export destinations of Indian materials in 2023 include UAE, Italy as well as Egypt. India now represents a quarter of global HC FeMn production, up from 22% % in 2022. Among other major producing countries, Malaysia, Iran, and Brazil experienced higher supply while Japan, Russia, South Korea, France and Norway saw declines in output.

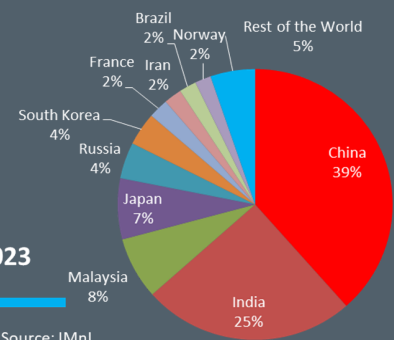
HC FeMn production and demand

2015 - 2023



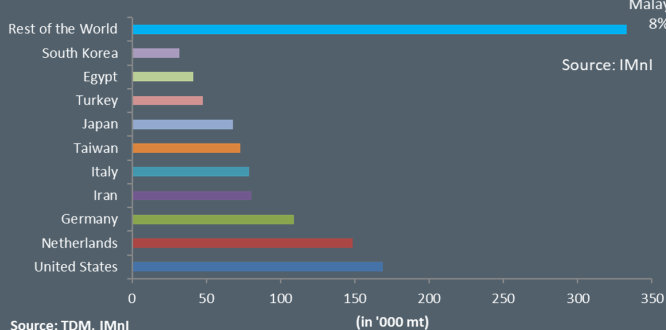
Source: IMnI, e = estimate

Top 10 HC FeMn producing countries in 2023



Source: IMnI

Top 10 HC FeMn importing countries in 2023



Source: TDM, IMnI

Statistics for production, demand, inventory and trade of Mn ore & alloy are available by region [here](#) (for IMnI Members only).

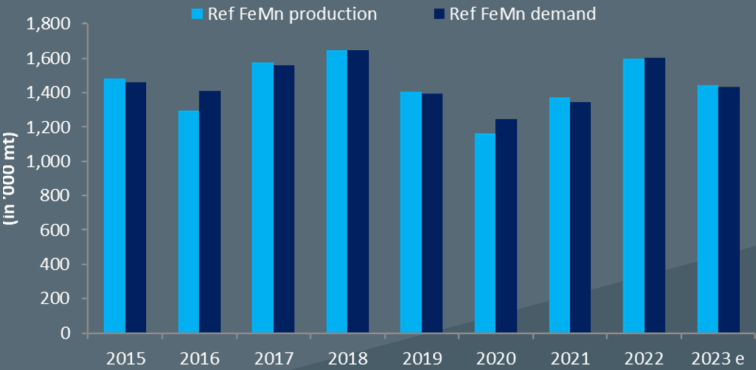
Ref FeMn

Production declined across major producing countries in 2023, except in India and Norway

Global production of refined ferro-manganese plummeted by 10% in 2023 to 1.4 million mt. The decline in output was seen in almost all regions: Asia (-14%), the C.I.S (-32%), the Americas (-21%), offsetting higher production in Europe (+18%) and Africa (+9%). The reduced supply in Asia resulted from production cuts in China (-16%), South

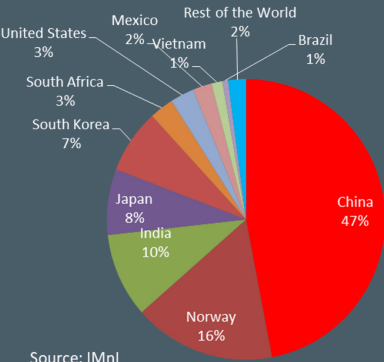
Korea (-30%) and Japan (-1%), though India saw an uptick of 5%. Except for India and Norway, all major Ref FeMn producing countries experienced a decrease in supply. China now accounts for 42% of global refined FeMn production, followed by Norway (15%), India (9%), Japan (7%) and South Korea (7%).

Ref FeMn production and demand
2015 - 2023



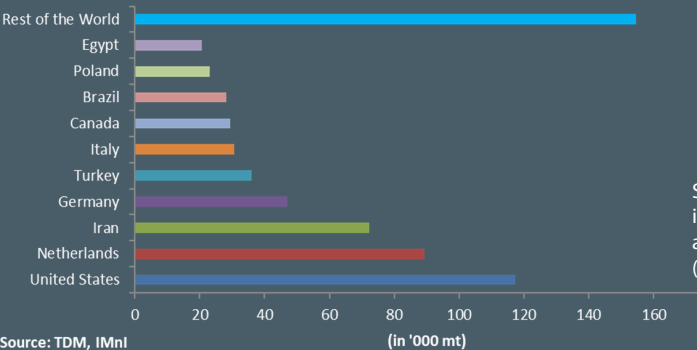
Source: IMNI, e = estimate

Top 10 Ref FeMn producing countries in 2023



Source: IMNI

Top 10 Ref FeMn importing countries in 2023



Source: TDM, IMNI

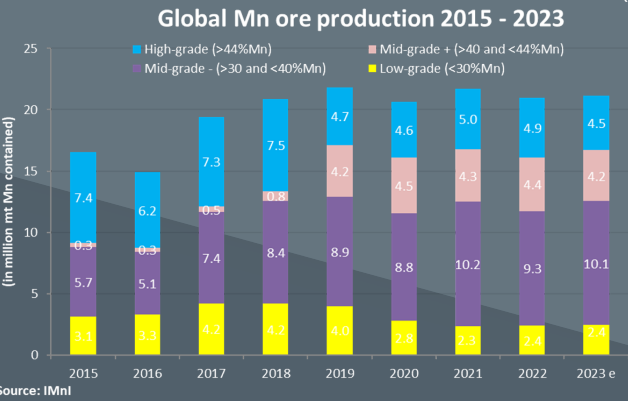
Statistics for production, demand, inventory and trade of Mn ore & alloy are available by region [here](#) (for IMNI Members only).

Mn ore

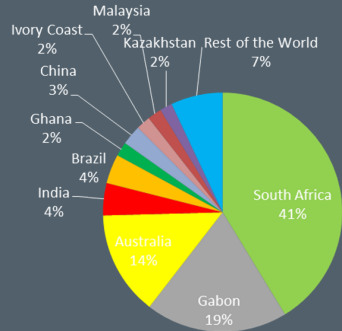
Rising production in 2023 driven by lower grade material

Global output of Manganese ore expanded by 1% to 21.1 million mt Mn contained in 2023 from the previous year. Supply of higher-grade material (high-grade and Mid-grade+) declined by 9% and 4% respectively, and it was offset by an increase of lower grade ore (Mid-grade- and low-grade) of 8% and 2% respectively. High-grade Mn ore production (>44%Mn) now represents 21% of total output, while mid-grade+ ore (>40 and <44%Mn) accounts for 20%. Mid-grade -

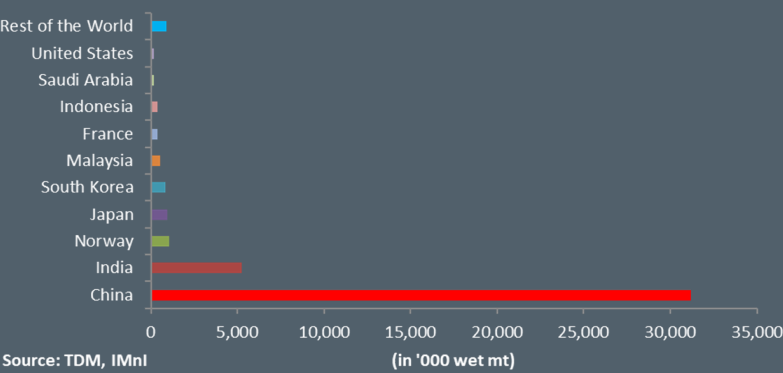
ore (>30 and <40%Mn) makes up for 48%, with the remaining 11% composed by low-grade ore (<30%Mn). Increased production in South Africa (+9%), India (+3%), Brazil (+35%), Ivory Coast (+3%) and Malaysia (+63%) compensated for production cuts in Gabon (-13%, due to interrupted train traffic interrupted in Q1), Australia (-1%), China (-23%). South Africa now accounts for 41% of the global Mn ore supply, up from 40% in 2022, followed by Gabon (19%) and Australia (14%).



Top 10 Mn ore producing countries in 2023



Top 10 Mn ore importing countries in 2023



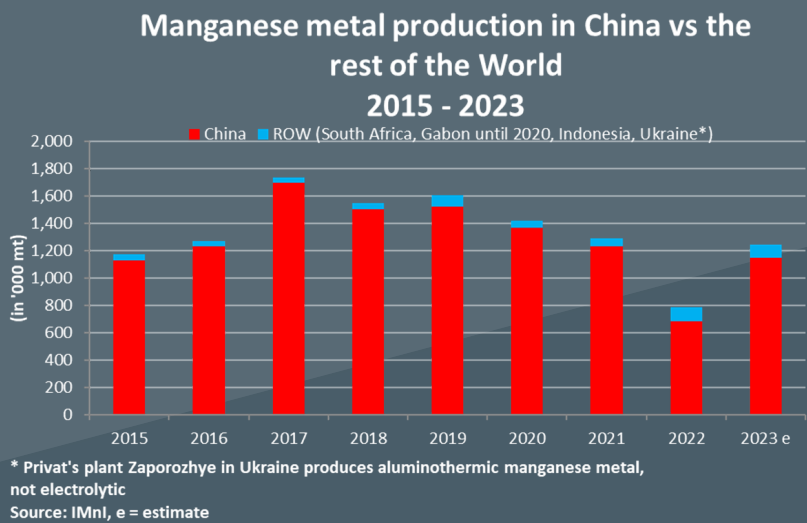
A database of Manganese producers and future projects is available [here](#) (for IMNI Members only).

Manganese metal

Higher global production in 2023 driven by rising supply in China

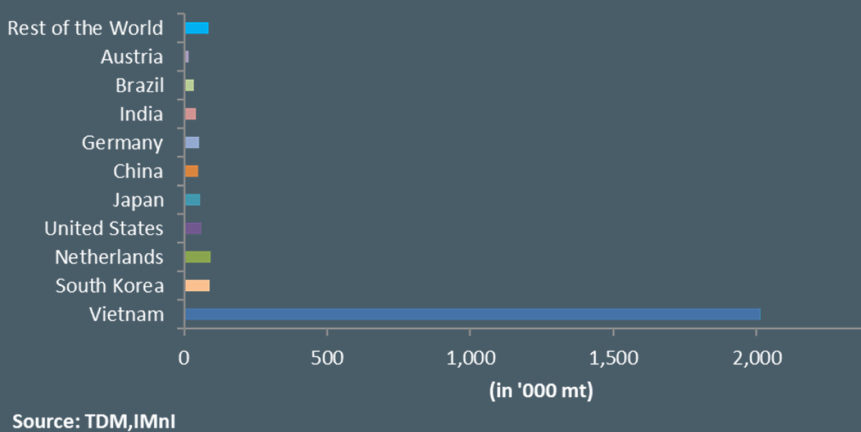
Manganese metal production witnessed a significant surge in 2023, with a rise of 57% compared to 2022, reaching 1,241,000 mt. Notably, output in China expanded by 68% from the previous year. Despite several production cuts, the Chinese EMM Alliance only implemented modest reductions this year. China dominates the global manganese metal supply, accounting

for 93% of the total, a notable increase from the 87% share in 2022. Conversely, the rest of the world experienced a 12% decrease in Manganese metal output in 2023 due to lower supply in both Indonesia and South Africa. In Ukraine, Privat eventually suspended production after the Russian invasion in Q1 2022.



EMM production statistics by country (and by province in China) are available [here](#) for IMnI Members only).

Top 10 EMM importing countries in 2023



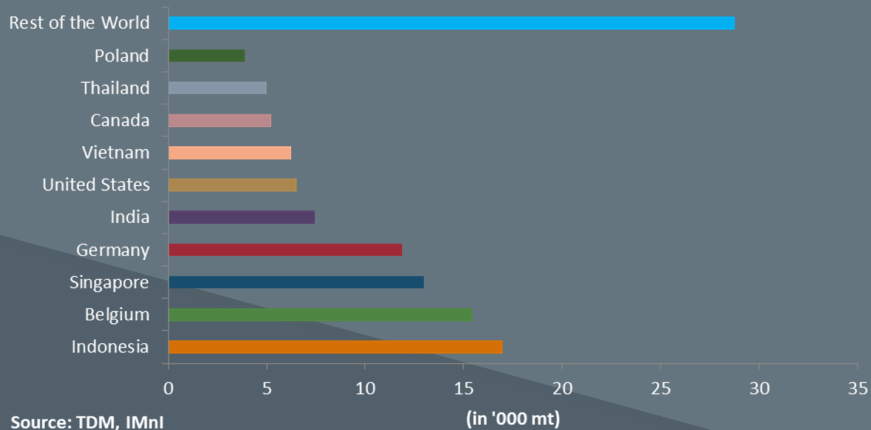
Electrolytic Manganese Dioxide (EMD)

Manganese Dioxide (EMD): production slumped by 13% in 2023 on slowing demand

Output of electrolytic Manganese dioxide (EMD) contracted by 16% in China in 2023, dampened by slowing demand from alkaline batteries. The number of active EMD producers in China increased to 10, up from 9 in the previous year. Beyond China, there are still 8 active EMD

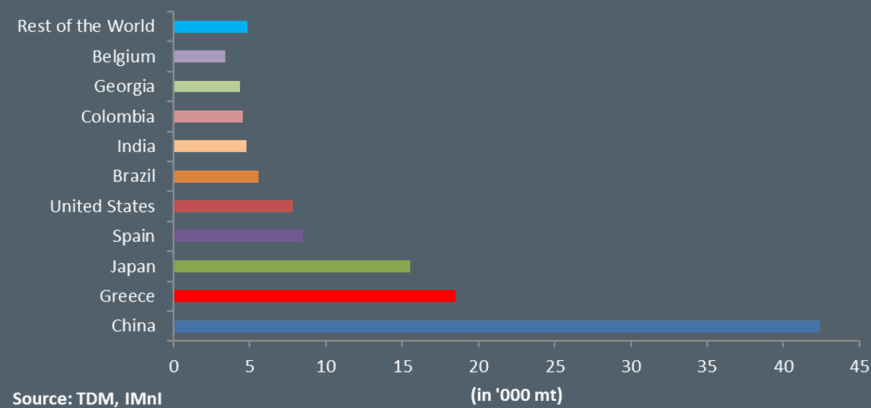
producers, in the USA, Spain, Japan, India, Greece and Colombia. The combined production of EMD witnessed a decrease of 4% in 2023 compared to the previous year.

Top 10 EMD importing countries in 2023



Monthly trade matrices for EMD, EMM, Mn ore, SiMn, HC FeMn and Ref FeMn are available [here](#) (for IMnI Members only).

Top 10 EMD exporting countries in 2023



HSE: SOCIAL RESPONSIBILITY

The mission of the HSE Committee is to develop the IMnI as the platform for providing the Mn industry with guidance, tools and information that will allow it to anticipate occupational health, environment and safety demands whilst improving worker safety, sustainability and ensuring industry profitability. To support this mission, the committee answers three main objectives:

- To identify those HSE topics that can impact on the Mn industry and to provide answers.
- To establish and employ a global network that can provide appropriate HSE expertise to IMnI, when necessary.
- To provide relevant information and support to members enabling them to promote and pro-actively ensure their interests when faced with new regulatory demands.



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2023 HSE COMMITTEE CHAIRMAN'S MESSAGE



“The central focus of the IMnI HSE Committee’s mission is to deepen our knowledge and understanding of the potential health, safety, and environmental impacts arising from the manganese industry, and 2023 witnessed notable accomplishments towards this end”

In 2023, the IMnI Health, Safety & Environment (HSE) Committee continued its efforts to foster industry growth while promoting sustainable development. Additionally, the committee launched several new scientific studies. Some of the ongoing projects have already yielded noteworthy preliminary results and have contributed to the development of scientific papers to be published in internationally recognized journals.

The collaboration between the IMnI and the US Manganese Interest Group (MIG), committed to the scientific evaluation and regulation of manganese in the USA, has strengthened. IMnI actively participated in two projects addressing US epidemiological studies affecting the manganese industry, influencing discussions on the relevance of these studies to the definition of regulatory reference values for manganese.

In 2023, several of IMnI’s longstanding projects reached completion, with their findings transcribed into manuscripts which are either ready for submission or have already been submitted or published in scientific journals.

- Risk Sciences International, IMnI’s partner since 2020 for the manganism

project, submitted the workshop report to Medicine International in March 2023. In July 2023, RSI provided IMnI Members with a [synthesis report on the diagnosis of occupational manganism](#). The project’s outcomes offers the manganese industry an updated literature review and validation on biomarkers of manganese exposure, refined clinical diagnostic criteria for manganism, and synthesized expert knowledge and advice on manganism identification.

- Various results from two projects conducted by Dr. Ulrike Dydak’s research team at Purdue University in the US, focusing on health effects stemming from manganese exposure in welding fumes, are expected to be featured in seven manuscripts scheduled for publication from 2024 onwards. Some have already been submitted to journals, while others are in the final stages of validation and will be submitted soon.

The results of these projects contribute significantly to enhancing health and safety knowledge concerning manganese exposure. They serve as a valuable source of information for all stakeholders interested in manganese toxicity and provide a robust guideline for the industry, health practitioners, and employees.

In 2023, IMnI actively contributed to the initiatives of various mining and metals-related organizations.

- The IMnI played an active role in numerous [International Council on Mining and Metals \(ICMM\)](#) working groups supporting the development of sustainability projects. In October 2023, IMnI participated in the annual ICMM Forum in London, seeking meetings with other metal associations and relevant industry peers.

- Due to the increased interest in use of high-purity manganese sulfate in batteries, IMnI became a Member of the [Global Battery Alliance](#) in January 2023, supporting the development of the battery passport in accordance with the new EU Battery Regulation.

- IMnI fostered closer ties with other metals associations in 2023, including the [International Molybdenum Association](#), the [Nickel Institute](#), and the [Cobalt Institute](#).

- IMnI will join the [Critical Raw Materials Alliance](#) in 2024 to further promote the importance of manganese to the European economy.

IMnI will continue working on various initiatives to support guiding the mining and metals industry toward sustainable development.

In 2023, the Manganese Life-Cycle Assessment (LCA) project focused on finalizing raw data collection, emissions modeling, and confirming results with participating companies. The reduction of environmental impacts is a top priority in the mining and metals and chemicals industry, making all study participants highly interested in the [overall final report](#) published in December. The benefits arising from the project are significant for the manganese industry, providing IMnI Members with details on greenhouse gas emissions, energy and water consumption,

land use, recycling, etc., of manganese products at an industry level. The research findings can be used by IMnI Members to enhance the environmental performance of their manganese activities, aligning them with global climate change challenges and the energy transition. Additionally, the outcomes will help IMnI Members demonstrate transparency and corporate credibility to their stakeholders and customers.

Environmental, social & governance (ESG) factors in manganese, throughout the whole value chain, have been in the spotlight for some time now, with IMnI receiving an increasing number of requests from both Members and third parties. Following the [first ESG research directed at the Mn ore and beneficiation value chain](#), completed in December 2022, IMnI commenced a [study focused on ESG factors in the high purity manganese sulphate value chain](#) in June 2023. This manganese chemical holds significant importance due to its role in manufacturing cathode active materials utilized in electric vehicles. Apart from the profound analysis of ESG factors, the findings of the study provided the industry with a valuable knowledge on the production, processing and marketing of this Mn chemical, detecting both the strengths and shortcomings thereof. To complete the series, in July 2023 IMnI started the ESG study on the Mn alloys value chain, expected to be completed in Q1 2024. The series of the ESG studies will definitely increase our understanding of the sustainability criteria and responsible investment factors that affect manganese products and the whole industry.

On the regulatory side, 2023 marked the enforcement of the [EU's Carbon Border Adjustment Mechanism \(CBAM\)](#), better known as the carbon border tax, aimed at preventing 'carbon leakage'. In March 2023, some ferromanganese alloys were included under the scope of the regulation, creating notification obligations for IMnI Members

importing these products to the EU. On October 1, 2023, the CBAM entered into application in its transitional phase, with the first reporting period for IMnI importers ending 31 January 2024.

- In March 2023, manganese and manganese-battery grade were included in the [EU's Critical Raw Materials Act](#), under the critical raw materials list and the strategic raw materials list, respectively. These inclusions have been recognized as the EU's acknowledgment of the crucial role of manganese, amongst others, in enabling the EU's transition towards a climate neutral continent, and the EU's commitment to secure access to these raw materials.

- In March 2023, [new hazard classes and labelling requirements for chemicals/mixtures having endocrine disrupting for human health as well as environment properties, between others, were introduced into the EU Classification, Labelling and Packaging \(CLP\) Regulation](#). This is important for manganese dichloride as it may be under threat of being classified in the EU as a suspected endocrine disruptor following the French authorities regulation that treats this Mn chemical as such.

- In July 2023, IMnI published the latest updated general templates of [Safety Data Sheets for 17 manganese products](#). The previous comprehensive update was provided to IMnI Members in 2020.

- In August 2023, the EU Batteries Regulation entered into force. Although manganese is not explicitly mentioned in the approved text agreed in March 2023, this policy will definitely impact Mn compounds used as active materials of batteries for EU Mn companies and non-EU Mn suppliers working with them. This has been mentioned during

the [IMnI High-purity Manganese Committee](#) meetings. One of the innovations of the EU Battery Regulation is to set up, by January 1, 2026, an electronic exchange system for battery information, with the creation of a [battery passport](#) (i.e. electronic record) for each industrial battery and EV battery placed on the market or put into service. As a new member of the Global Battery Alliance, IMnI will actively participate in the development of this battery tool.

The HSE Committee is committed to continue supporting IMnI Members in the future. While 2023 was productive, 2024 holds significant promise. We expect to embark on several ambitious new projects with the goal of gaining new knowledge on manganese products and enhancing the sustainability of the manganese industry. This effort also seeks to amplify the industry's contribution to the energy transition, particularly through the utilization of manganese chemicals in green energy technologies such as electric vehicle batteries.

Rocklin REED
IMnI HSE Committee Chairman



2023 UPDATE ON HSE SPECIAL PROJECTS

Life Cycle Assessment of manganese products

In November 2021, IMnI launched a new Manganese Life Cycle Assessment (LCA), a project developed in collaboration with the consulting company [Sphera](#). The study seeks to evaluate the lifecycle environmental profile of global manganese products production, aiming at providing stakeholders with reliable and representative life cycle data. In response to input from IMnI Members, the assessment concentrates on quantifying the environmental impacts from cradle to gate production of Mn ore, Mn alloys, EMD, EMM, and MnSO₄ agriculture-grade and battery-grade. The target audience for this study encompasses IMnI Members, manganese producers, initial and end-users (including steelmakers and producers of precursors for cathode active materials used rechargeable batteries), legislators, academia, LCA practitioners, non-governmental organizations (NGOs), and more. The study adheres to ISO 14040/44 standards.

Between December 2021 and February 2022, participating companies were recruited. Throughout February 2022 and February 2023, these companies provided their individual raw LCA data to Sphera.

Starting in September 2022, the consultant focused on preparing LCA emission models, conducting bilateral meetings for results presentation, and reviewing and updating the models. In total, more than 40 models were created and agreed upon with the participating companies, providing average results for Mn LCA parameters for all Mn products under study. The final report, completed in the 4th quarter of 2023, underwent a thorough analysis by IMnI Members followed by a critical review by an external reviewer. It is available on the [IMnI extranet](#). Q1 2024 will be dedicated to creating company-specific reports for all participating IMnI Members.

ESG factors in high-purity manganese sulphate monohydrate value chain

Environmental, Social & Governance (ESG) factors have gained prominence throughout the entire value chain of the manganese industry, capturing the keen interest of IMnI Members. Following the completion of a project related to ESG factors in the Mn ore mining and beneficiation value chain in December 2022, IMnI embarked on a



research initiative in June 2023 to study the ESG factors in the high purity manganese sulphate monohydrate (HP MSM) value chain. This product is of particular interest due to its use in electric vehicle (EV) batteries. The consulting company [RCS Global](#) was commissioned for the project. The objective of this analysis is to understand the ESG factors of HP MSM at each stage of the value chain, compare ESG factors (primarily environmental challenges) among China, Europe, and Japan in the production of HP MSM, contrast HP MSM ESG factors with other chemicals used in battery cathodes, and ultimately, support this niche industry in gathering materials on risk mitigation and best practices.

The ESG factors were studied using sustainability schemes for mineral resources developed by Germany's Federal Institute for Geosciences and Natural Resources, one of the most extensive sustainability schemes available to date.

The research phase of the study received support through collaboration with four Chinese HP MSM producers who underwent an on-site responsible sourcing audit at their production sites (these audited companies contribute to 66% of the HPMSM production in China in the first half of 2023). Additionally, seven IMnI Members representing the upstream (Mn ore producers) or downstream (cathode/battery producers) value chain were interviewed to provide their expertise on their respective value chains, along with four industry experts carefully selected for their relevance to the topics covered.

The project was concluded in December 2023, and besides the final report available on the [IMnI extranet](#), IMnI Members had the opportunity to participate in a workshop for results presentation conducted by the consultant.

ESG factors in Mn alloys value chain

In response to the discerning interest of IMnI Members in assessing the sustainability challenges inherent in the manganese industry, the ESG factors in the manganese alloys value chain project was initiated in July 2023, supported by the expertise of the consultant [Sphera](#). This research aims to comprehensively collect, measure, and evaluate the ESG risks associated with the Mn alloys value chain – spanning from Mn ore mining to the final production of Mn alloys. This analysis will be conducted for each value chain operation and scrutinized on a country-by-country basis, encompassing key regions such as China, India, Norway, Russia, South Korea, Mexico, South Africa, USA, Brazil, and Malaysia.

The project has found support in an ESG survey specifically directed towards IMnI Mn alloy producers, a process that reached completion in mid-December. To further enrich our understanding of the value chain, interviews with IMnI Mn alloy producers, as well with their downstream colleagues, are in the process of being organized.



The completion of the project is poised to deliver a comprehensive final report. Beyond the written report, in-person meeting for the presentation of results will be on the horizon, followed by an exclusive ESG risks mitigation workshop designed for the exclusive engagement of all IMnI Members. The anticipated timeline for wrapping up the project is the end of February 2024.

Manganese Interest Group (MIG)

In 2023, the IMnI continued supporting the U.S. manganese producers and consumers, with a primary focus on two key activities. The first involves a meticulous examination of the data from Dr. Bowler's study, released by the U.S. Environmental Protection Agency (EPA) through a secure data enclave (SDE) for MIG's review. This scrutiny specifically targets Mn air exposure in Ohio communities, aiming to assess the scientific completeness and accuracy of the data. The ultimate goal is to pave the way for the implementation of more stringent Mn regulations. Two study proposals, dedicated to the in-depth analysis and interpretation of this data, have been submitted. Currently, MIG is actively seeking funding from its Members to proceed with either of these proposals.

The second activity is focused on supporting U.S. manganese producers and users in light of new research studies by Dr. Haynes, which explore community exposure to Mn and other metals in Chicago areas. This initiative involves collaborative development with

MIG to create a petition letter intended for authorities and universities that have hosted or sponsored Dr. Haynes' research activities in the past and present. The goal is to bring attention to discrepancies identified in Dr. Haynes' prior research conducted in Ohio communities. The initial draft of the letter was sent to the targeted institutions by the end of 2022. However, in response to unfavourable feedback, a significant portion of 2023 was dedicated to revising the petition, formally alleging research misconduct identified in Dr. Haynes' previous investigations and advocating for corrections in some of her previously published papers. This petition underwent scientific scrutiny during a meeting held in December 2023, where it was presented to Dr. Haynes and her team. The subsequent steps for this project will be outlined in the weeks to come.

HSE webinar

In November 2023, IMnI organized a webinar to present How Sustainability Reshapes the Manganese Industry. The webinar featured three expert panelists from [Euroalliances](#), [Eramet](#), and [Sphera](#). They presented on the EU CBAM and its impact on manganese ferroalloys, the roadmap for decarbonization in Eramet manganese alloys, and manganese life cycle assessment and its role in the context of climate change and sustainable development, respectively. The presentations by the panellists, along with the recording of the webinar, are available on the [IMnI extranet](#).



2023 REGULATORY HIGHLIGHTS

Quarter 1

- US Environmental Protection Agency publishes its List of Lists, a consolidated list of chemicals subject to reporting requirements under different regulatory frameworks – several manganese chemicals are included in some of the lists (in Dec 2022)
- EU agrees on Carbon Border Adjustment Mechanism and Emissions Trading System (ETS) reform (in Dec 2022)
- EU reaches deal on new EU battery regulation setting rules for design, production and waste treatment (in Dec 2022)
- US releases new California Proposition 65 List – mancozeb and maneb are the only manganese substances already on the list
- Germany's supply chain due diligence law is in force – risk of pushing for due diligence and transparency of companies' policies in other mandates worldwide?

Quarter 2

- EU publishes final text of the EU's Carbon Border Adjustment Mechanism and includes several manganese ferroalloys under its scope
- Manganese/manganese-battery grade included in the EU's Critical Raw Materials Act
- The European Commission introduces new hazard classes and their criteria into the EU Classification, Labelling and Packaging (CLP) Regulation
- Manganese included in the Mercosur (composed of Argentina, Brazil, Paraguay, Uruguay, Venezuela (currently suspended) as states parties) draft regulation on silicones in food contact materials
- Manganese oxide listed in Chilean standard for chemical analysis of cements
- Manganese included in Algeria's specific measures for food contact metals and alloys



Quarter 3

- Manganese oxides under the scope of the Indian's mandatory chemical import declarations
- The European Commission adopts detailed reporting rules for the Carbon Border Adjustment Mechanism's transitional phase, the adoption of the draft being preceded by the public consultation
- Manganese and its compounds and maneb as substances listed in Japan among substances requiring workplace PPE to prevent exposure
- The European Commission supports the industry with webinars to help navigate the Carbon Border Adjustment Mechanism's transitional phase

Quarter 4

- Some manganese chemicals included in the Japanese updated list of substances for mandatory SDSs and labelling
- The European Commission develops transitional registry to support the importers in complying with the Carbon Border Adjustment Mechanism's transitional phase
- Manganese limits included in the proposed by the European Commission draft regulation on positive lists for materials in contact with drinking water
- Polyfluoroalkyl substances (PFAS) restriction proposal in the European Union – risk of an indirect impact on Mn alloy producers

THE IMnI ELECTROLYTIC MANGANESE COMMITTEE

- Focuses on electrolytic Manganese metal (EMM) and electrolytic Manganese dioxide (EMD)
- Collects production and trade data on electrolytic products
- Provides coverage and weekly analysis of EMM and EMD markets in China through on the ground investigation by the IMnI China Representative
- Acts as a forum for discussion of industry matters, particularly those relating to health, safety, environment and regulatory affairs



THE IMnI ELECTROLYTIC PRODUCTS (EPD) CONFERENCE

IMnI 17th EPD Conference & 12th International Forum of Mn Electrolytic Products took place on March 8-9 in Nanning, Guangxi, China, and was attended by 190+ delegates (including 10 non Chinese).

Experts and specialist of Manganese industries, representatives from upstream and downstream industries, in China and abroad, were invited to share their opinion on the development and potential of the Manganese industry.

Organizers:

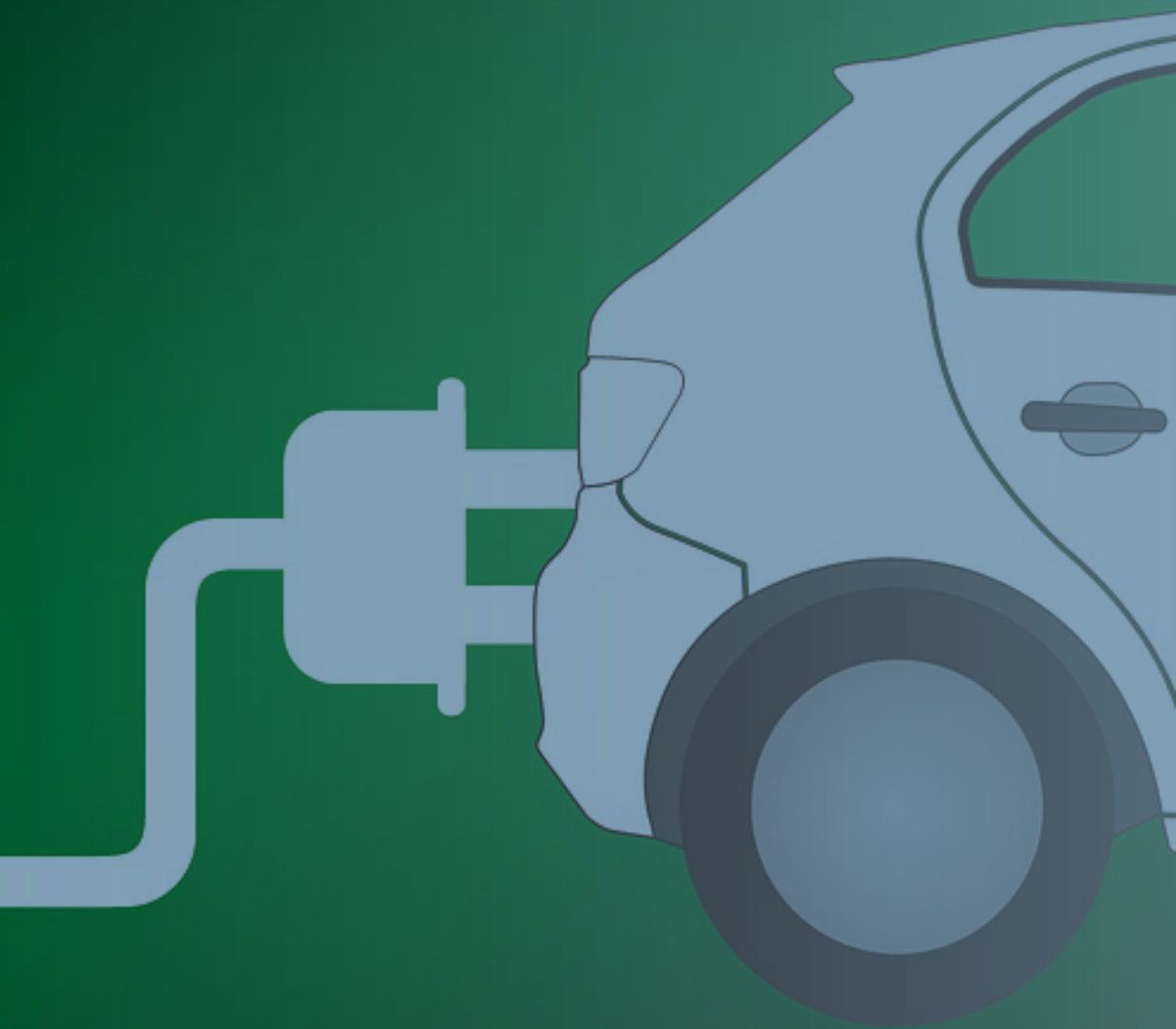
- China Mining Federation Manganese Branch
- National Committee of Manganese Industry Technology
- Guangxi Manganese Industry Association
- South Manganese Group Limited
- International Manganese Institute

An optional technical tour was scheduled on Friday 10 to 3 plants based in Qinzhou, Guangxi:

- CNGR Advanced Material Co., Ltd. (NMC plant)
- Guangxi Manganese New Energy Technology Co., Ltd. (Mn chemical plant manufacturing HP MSM)
- Qinzhou Nanhai Chemical Co., Ltd. (Mn chemical plant manufacturing HP MSM)

The 2024 EPD Conference will take place in Chengdu, China, on March 1, with technical visits on March 2

For more information about the IMnI and its events,
please contact events@manganese.org
or follow us on [LinkedIn](#) or [X](#).



THE IMnI HIGH PURITY MANGANESE PRODUCTS COMMITTEE

Focuses on Manganese chemicals used in battery cathodes (MnSO_4 , Mn_3O_4 , MnO , Mn_2O_3 , MnCO_3 etc.)

- Promotes the use of Manganese in batteries, including but not limited to batteries used in electric vehicles (EVs)
- Collects information about Manganese compounds used in batteries
- Cooperates with batteries producers, carmakers and with government departments and research institutes on topics including Manganese used in batteries
- Acts as a forum for discussion of industry matters, particularly those relating to health, safety, environment and regulatory affairs

THE CHINA COMMITTEE

The China Committee aims at assisting IMnI in enlarging its membership base in China, to provide IMnI Members with accurate statistics on China, to facilitate the networking between Chinese companies and IMnI Members from the rest of the world, and to support Chinese Members in terms of HSE, market research and technical information. [Mrs. Eva Yang](#), based in Shanghai, is the IMnI China Representative.

With 8 new Chinese companies joining the IMnI in 2023, the China Committee now represents a total of 33 Chinese IMnI Members, including 18 major producers of Mn alloys, 1 producer of electrolytic products and Manganese ore, 2 Manganese chemical producers, and 12 prominent trading companies.

New IMnI Members in China in 2023	Company type
Chongqing Changyuan Group Ltd.	Mn chemical producer
CITIC Commodities Pte. Ltd.	Mn trader
Eternal Tsingshan Group Ltd.	EMM producer
Guangxi Dameng Manganese Industry Group Co., Ltd.	Mn ore producer
Guangxi Hanse Industrial Co., Ltd.	Mn alloy producer
Guangxi Menghua New Energy Technology Development Co., Ltd.	Mn chemical producer
Shanghai Chuangsheng Industrial Co., Ltd.	Mn alloy producer
SPIC Guizhou Jinyuan Suiyang Industrial Co. Ltd.	Mn alloy producer

The IMnI China Committee, chaired by **Mr. Jian Zhou** (Fengri Trading), met in May, July and November, and each meeting was attended by 30+ IMnI Members with offices in China.

The China Statistics sub-committee also organised several teleconferences, animated by IMnI China Representative Ms. Eva Yang, to discuss the latest IMnI statistics.





THE INDIA COMMITTEE

The India Committee aims at assisting IMnI in enlarging its membership base in India, to provide IMnI Members with accurate statistics on India, to facilitate the networking between Indian companies and IMnI Members from the rest of the world, and to support Indian Members in terms of HSE, market research and technical information.

The IMnI India Committee, chaired by **Mr. Manish Sarda (Sarda Group)**, met in September, and the meeting was attended by 14 companies with offices in India.

With 7 new Indian companies joining the IMnI in 2023, the India Committee now represents a total of 14 companies:

New IMnI Members in India in 2023	Company type
Berry Alloys Ltd.	Mn alloy producer
GoodEarth GoodRock	Mn chemical producer
Micromesh Minerals & Metals	Mn chemical producer
Nava Limited	Mn alloy producer
Sarda Group	Mn alloy producer
Sharp Ferro Alloys Ltd.	Mn alloy producer
Shreenath Fine Chem (I) Pvt. Ltd.	Mn chemical producer



THE ANNUAL CONFERENCE

IMnI 47th Annual Conference was held in Bangalore, India from Tuesday, June 6 to Thursday, June 8.

This year again, the International Manganese Institute's 47th Annual Conference remained the world's biggest Manganese event, gathering in Bangalore 220 delegates from 120 companies, based in 35 countries!

This event attracted major Manganese ore, alloy, metal and chemical producers, in addition to traders, logistics companies, battery producers and steel mills.

Industry experts presented on the latest battery, steel and Manganese trends and opportunities (presentations are available for IMnI Members on the IMnI extranet, and upon request for non-Members at imni@manganese.org), and a session of the conference was dedicated to Manganese chemicals and Lithium-ion batteries:

- Global macro-economy outlook by **Madhavi Arora**, Chief Economist, Emkay Global Institutional Equities
- Prospects for the Indian economy by **Dr. A.S. Firoz**, Strategy Adviser, Policy and Economic Affairs, Metals and Mining
- A future perspective of Manganese Business - The India Story by **Sirsendu Mukherjee**, Chief Operations-FAMD, Tata Steel Ltd.
- Development of high-Manganese cathode in batteries by **Abhishek Murali**, Analyst – Electric Vehicles and E-Mobility, Rystad Energy
- Outlook for manganese in batteries by **Teboho Sebetlela**, Research Manager, Wood Mackenzie
- Market review of Manganese Ore – India Prospect by Shri Ajit Kumar Saxena, Chairman-cum-Managing Director, MOIL
- Outlook for India's Manganese ore market by **Sri Abdul Saleem**, Director, The Sandur Manganese & Iron Ores Ltd. (SMIORE)
- Manganese alloy market, an Indian perspective by **Manish Sarda**, Deputy Managing Director of Sarda Metals & Alloys and IFAPA Chairman
- New health, safety & environment developments for the Mn industry by **Dr. Agnieszka Leopold**, HSE & Regulatory Affairs Manager, IMnI
- Deep-sea Manganese extraction: a game-changer? by **William Li**, Director of Business Development, Asia Pacific, The Metals Company (TMC)



- Industrial threats with foreseen effects to bottomline by Dr. Doreen McGough, Secretary General, Manganese Reach Association (MARA)

The conference was supported by major sponsors, including Autlán, South32, Tshipi, Transalloys, Assore / Assmang, Ore & Metal Company, IPMC, United Manganese of Kalahari (UMK), World Metals & Alloys (WMA), MOIL, Asia Minerals / Kudumane / Pertama, OM Holdings, and Eramet.

The event offered countless networking opportunities, during the Welcome Cocktail at the Leela Palace in Bangalore, during networking lunches, social events a beer & wine-tasting and gala dinner!

- Sarda Metals & Alloys Ltd (SMAL)
- Abhijeet Ferrotech Limited (AFL)
- Hira Power and Steels Ltd. and Godawari Power & Ispat Ltd (GPIL)

Feedback from the delegates after the event:

- Thank you for the opportunity to exchange ideas at the annual conference. It was a learning experience as well, understanding the dynamics of the Commodity sector and scope of Mn specifically. Congratulations on the success and smooth functioning of your event! (**Emkay Global Institutional Equities**)
- It was great to participate in this very well organised event (**Wood Mackenzie**)
- Just a word of appreciation for the wonderful event this year. As always, the arrangements and venue were excellent (**Transalloys**)
- The presentations gave an excellent insight into developments in India at this pivotal point and, as ever, the IMnI conference is the best place to meet everyone in the world of manganese (**CRU**)
- It was a very well organised conference and heartily congratulate your team (**SMIORE**)
- Thank you for your organization. It was my first joining and very helpful to understand the manganese industry (**Norvic Shipping**)
- Thank you for a wonderful conference (**Minerais US**)
- Many thanks to the wonderful team at IMnI for supporting such a great event (**S&P Global Commodity Insights**)
- It was really good and well organized so congratulations! (**Brix Metallurgy**)
- We really enjoyed the conference (**McCloskey by OPIS**)

For more information about the IMnI and its Annual Conference, please contact events@manganese.org or follow us on [LinkedIn](#)

COMPANIES THAT ATTENDED THE IMnI 47TH ANNUAL CONFERENCE



A.P.Trivedi Sons
 Afro Minerals Trading AG
 Afton Chemical Corporation
 Amar Ferro Alloys
 Asia Minerals Limited
 Autlán
 AVEKS AS
 AVEKS India
 BDG Metal & Power Ltd.
 Berry Alloys Ltd.
 Bihar Foundry and Casting Ltd (BFCL)
 Brix Metallurgy
 Carbon Resources Pvt. Ltd.
 CCMA, LLC
 Charisma Resources Ltd.
 CRU Group
 DERA/BGR
 DPRC SL
 Emkay Global Institutional Equities
 Eramet India Private Limited
 Eramet SA
 Euro Manganese Inc.
 Ferroglobe
 Firebird Metals Limited
 Forsteel Srl
 Galmet SpA
 GfE-MIR Alloys and Minerals
 Glencore India Private Ltd.
 Glencore International AG
 Global Manganese Pty Ltd
 GoodEarth | GoodRock
 Hira Electro Smelters Ltd
 IMnI
 Innovation Worldwide DMCC
 ITOCHU India Pvt. Ltd.
 ITOCHU Singapore Pte Ltd.
 Japan Ferroalloy Association
 JFE Mineral & Alloy Co.Ltd.
 JFE Shoji Corporation
 Jindal Shaded Iron & Steel LLC
 JMD Ltd.
 Jupiter Mines Limited
 Kimpe SAS
 Kudumane Manganese Resources
 Maa Enterprises
 Manganese Metal Company
 Manganese REACH Administration (MARA)
 Manmohan Minerals & Chemicals Pvt. Ltd.
 Maringá Ferro Ligas
 Marubeni Tetsugen Co., Ltd.
 McCloskey by OPIS
 Micromesh Minerals & Metals
 Minerais US
 Minmet SAM
 Mitra S.K. Private Limited
 Mitsui & Co., Ltd.
 MOIL Limited
 Mortex Group
 Musamu Resources Ltd.
 Nava Limited
 Nippon Denko Co., Ltd.
 Norvic Shipping Middle East DMCC
 Ntsimbintle Holdings (Pty) Ltd.
 Ntsimbintle Marketing and Trading Pte Ltd
 OFZ, a.s.
 OM Holdings Ltd.
 Omni Industries BV
 Ore and Metal Company Limited
 Oswal Minerals Limited
 PM Granite Export Private Limited
 PowerCo
 Project Blue
 QVC Exports Limited
 Rajadhiraj Tirupani Vinayak Natraj Pvt.Ltd
 Rand Merchant Bank
 Rystad Energy
 S&P Global Commodity Insights
 Sakura Ferroalloys SDN BHD
 Sarda Metals & Alloys Ltd.
 Satka Group
 Sharp Ferro Alloys Limited
 Sherwood EMM Limited
 Shreenath Fine Chem (I) Pvt. Ltd.
 Shyam Ferro Alloys Ltd.
 Shyam Sel And Power Ltd
 South32
 Street Spirit Trading 149 Pty Ltd
 Sumitomo Corporation
 Sumitomo Corporation Africa (Pty) Ltd
 Super Smelters Limited
 Taekyung Industry
 Tata Steel Ltd.
 The Metallic Alloys
 The Metals Company (TMC)
 The Sandur Manganese and Iron Ores Limited
 Transalloys
 Traxys Europe S.A.
 Tshipi e Ntle Manganese Mining
 United Manganese of Kalahari (Pty) Ltd
 Vamancore Pte Ltd
 Vandana Global Ltd.
 Vedika Metals Private Limited
 Vibrantz Technologies
 WMA Resources AG
 Wood Mackenzie
 World Metals & Alloys (FZC)



IMnI 48TH ANNUAL CONFERENCE

will be held in Muscat, Sultanate of Oman
from Monday, June 3 to Thursday, June 6

The IMnI Annual Conference is a unique global platform for Manganese leaders to meet, network and exchange on the development of Manganese industry. Hosted by the International Manganese Institute, the conference moves around the world and always includes technical visits to mines and/or plants. The IMnI conference is open to IMnI Members and relevant stakeholders.

After the success of the 2023 edition in Bangalore, where 220+ delegates of the Manganese community networked and learned about the latest trends of the industry, Oman has been chosen for the 2024 event. The theme will be "Middle East: a future growth driver for the Manganese sector".

The conference will include technical visits to Jindal Shadeed's SiMn smelter & steel mill and Trust Mining Manganese ore mines on Thursday, June 6.

Sponsors to date include Autlán, Maringá Ferro-Liga S.A., Ore & Metal Company, South32 and World Metals & Alloys (FZC).

For additional information, please email us at events@manganese.org

IMnI COMMITTEES 2023

The life of the Institute is regulated by the work done by its committees. There are six committees: Health, Safety and the Environment (HSE), Statistics, Electrolytic Manganese, High Purity Manganese, China and India. They meet on average between two and four times a year and are open to both Ordinary and Affiliate members. Each committee is chaired by a member, while the secretariat is handled by a permanent IMnI staffer. Each also has about a dozen members.

The China Committee has three Sub-Divisions: statistics, technical issues and regulatory affairs.

The Electrolytic Manganese Committee is formed of producers of electrolytic manganese metal and electrolytic manganese dioxide.

Committees are the lifeblood of the IMnI, providing vision, ideas and direction to nourish its fundamental missions.

Statistics Committee

Guillermo Recio (Chairman), Autlán

Gautam Kumar, Asia Minerals Ltd.

Juan Bosco Alvarez, Autlán

Gabriel Schaub, Eramet Marketing Services

Marco Levi, Ferroglobe

Toshiaki Abe, Japan Ferroalloy Association (JFA)

Thembelani Gantsho, Kudumane Manganese Resources (Pty) Ltd.

Luis Pessoa, Maringá Ferro Liga S.A.

Martin Levčik, OFZ, a.s.

Zelin Chan, Oldendorff Carriers

Adrian Low, OM Holdings

Augenija Di Bucci, Omni Industries B.V. / Satka Group

Keneilwe Lerumo, Ore & Metal Company Ltd.

Jian Zhou, Shanghai Fengri International Trading Co., Ltd.

Shanshan Huang, South32

Paul Jonker, Tshipi é Ntle Manganese Mining (Pty) Limited

Aloys d'Hambure, IMnI Executive Director

Health, Safety & Environment Committee

Rocklin Reed (Chairman), Ore & Metal Company

Jenny Cronje (Vice-Chair), South32

Athena Keene (Science Chair), Afton Chemical Corporation

Elsa Saucedo, Autlán

Frederic Gaidou, Eramet Comilog Manganese

Yann Gran, Ferroglobe

Orson Lui, Guangxi Guikang New Materials Co., Ltd.

Teheli Morabe, Manganese Metal Company (MMC)

Rodrigo Junqueira Dos Santos, Maringá Ferro Liga S.A.

Milan Harcek, OFZ, a.s.

Augenija Di Bucci, Omni Industries B.V. / Satka Group

Agnieszka Leopold, IMnI HSE & Regulatory Affairs Manager

Aloys d'Hambure, IMnI Executive Director



High Purity Manganese Committee

Jean-Thibault de Besombes (Chairman),
Vibrantz Technologies
Andrew Zemek (Vice-Chairman), *CPM Group*
Gautam Kumar, *Asia Minerals Ltd.*
Eduardo Isla, *Autlán*
James Fraser, *Euro Manganese Inc.*
Justin Brown, *Element 25 Ltd.*
Antoine Delavenne, *Eramet SA*
Pedro Loureiro Lema, *Ferroglobe*
Peter Allen, *Firebird Metals Limited*
Danny Keating, *Giyani Metals Corp.*

Madelein Todd, *Manganese Metal Company (MMC)*
Martin Kepman, *Manganese X Energy Corp.*
Mike Kitney, *Mn Energy Ltd.*
Adrian Low, *OM Holdings Ltd.*
Stuart McArthur, *Sherwood EMM*
Michael Li, *South Manganese Group Limited*
Li Weijian, *South Manganese Group Limited*
Hiromu Otsuka, *Tosoh Corporation*
Aloys d'Harambure, *IMnI Executive Director*
Eva Yang, *IMnI China Representative*

Electrolytic Manganese Committee

Li Weijian (Chairman), *South Manganese Group Limited*
Madelein Todd (Vice-Chairwoman),
Manganese Metal Company (MMC)
Eduardo Isla, *Autlán*
James Fraser, *Euro Manganese Inc.*

Michael Li, *South Manganese Group Limited*
Koki Okumura, *Tosoh Corporation*
Jean-Thibault de Besombes, *Vibrantz Technologies*
Aloys D'harambure, *IMnI Executive Director*
Eva Yang, *IMnI China Representative*

China Committee

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Li Weijian (Honorary Chairman), *South Manganese Group Limited*
Deng "Dan" Guohong (Chairman of Technical Sub-Division), *Inner Mongolia Chayouqianqi Mengfa Ferroalloy Co., Ltd.*
Yang Bin (Chairman of HSE Sub-Division), *Ningxia Shengyan Industry Group*
Wang Ning (Chairman of Statistic Sub-Division), *Minmetals Development Co., Ltd*

Zhu Deshan, *Baosteel Resources (International) Co., Ltd.*
Yuan Zhilun, *Chongqing Bosai Mining Group*
Zhan Haiqing, *South Manganese Group Limited*
Edward Li, *Guikang New Materials*
Guo Yimin, *Vietnam Hai Duong New Resources Metallurgy Shareholdings*
Aloys D'harambure, *IMnI Executive Director*
Eva Yang, *IMnI China Representative*

India Committee

Manish Sarda (Chairman), *Sarda Metals & Alloys Ltd.*
Berry Alloys Ltd.
Carbon Resources (Pty.) Ltd.
GoodEarth | GoodRock
Hira Ferro Alloys
Micromesh Minerals & Metals
MOIL Limited

Nava Limited
Rajadhiraj Tirupani Vinayak Natraj Private Limited
Sharp Ferro Alloys Ltd.
Shreenath Fine Chem (I) Pvt. Ltd.
Shyam Sel & Power Ltd.
Tata Steel Ltd.
Vedika Metals Pvt. Ltd.

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Esteban Rivero, Autlán (Corporate Vice-President)

Marco Levi, Ferroglobe (CEO)

David Danon, Glencore International AG (Trader)

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Augenija Di Bucci, Omni Industries B.V. (Commercial
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Li Weijian, South Manganese Group Limited (Vice
Chairman & CEO)

Rosa Ye Lujing, General Manager Mn Ore, South32

Ezekiel Lotlhare, Tshipi é Ntle Manganese Mining (Pty)
Ltd. (CEO)

Malcolm Curror, United Manganese of Kalahari (CEO)

Aloys d'Hambure, IMnI (Executive Director)

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India Committee - Manish Sarda, Sarda Metals & Alloys
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Director)

Executive Director

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Patrick Sacco



Branislav Klocok



Paul Desportes



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Marco Levi



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Wang Ning



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Ngee Tong Low



James Choi



Li Weijian



Rosa Ye Lujing



Ezekiel Lotlhare



Malcom Curror



Aloys d'Hambure

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Tshipi é Ntle Manganese Mining (Pty) Ltd. - South Africa
United Manganese of Kalahari (Pty) Ltd. - South Africa
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Zhejiang Fuchun Corporation - China

Chemical Products

Division

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Chongqing Changyuan Group Limitd - China
Euro Manganese Inc. - Canada
Giyani Metals Corp - Canada
GoodEarth | GoodRock - Singapore
Guangxi Menghua New Energy Technological Development Co., Ltd. - China
Kimpe SAS - France
Manganese X Energy Corp. - Canada
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Carbon Resources (P) Ltd. - India
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South Manganese Group Limited - China
Tosoh Corporation - Japan

INTERNATIONAL MANGANESE INSTITUTE

IMnI provides vision and guidance to the Manganese industry by promoting economic, social and environmental responsibility and sustainability for all stakeholders.

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be part of a recognised network

Events & Conferences

network during major events of the Manganese industry

Market Research & Stats

get the best data available on the Manganese market

Regulatory Affairs

stay up-to-date on compliance

Health, Safety & Environment (HSE)

improve your processes

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