2025

Green Wisdom

MSC Sustainability Report

In The Name of GOD

2025

Green Wisdom

MSC Sustainability Report

Cover story

At first glance, the serene and radiant image of MSC's solar power plant casts a gentle yet steadfast light upon the heart of this report. We have called it "The Sun of the East"—a symbol of a new vision rising on the horizon of sustainability. A vision rooted in the soil, yet reaching toward the lofty horizons of the future.

The green color used on the cover, as well as in the report's internal design, represents more than the environment; it reflects wisdom, humility, resilience, and sustainability in decision-making—a color that, like a backbone, flows through every part of this report. Alongside it, the vibrant orange evokes molten steel, a reminder of industrial essence and the power of production at the heart of sustainability.

The nine icons of the GREENWISE framework, placed beside this sunlit image, recall the responsible path MSC has walked—from green performance to ethics and good governance, from employee happiness to earth-friendly solutions. This report is a narrative of our collective journey to build an industry that is not only strong, but also wise, green, and radiant like molten steel.

Content

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About This Report

At Mobarakeh Steel Company (MSC), we believe in green Wisdom as the essence of the path toward sustainable industrial development, wisdom rooted in responsibility, foresight, and a profound connection with both human and nature. This report, our fifth narrative on sustainability performance for the fiscal year ending March 19, 2024, is published under a title inspired by this very belief: “Green Wisdom”

This report is not merely a compilation of data and achievements, but a reflection of our strategic perspective framed by the GREENWISE model, a framework that serves as a compass guiding us toward a greener, more ethical, and more human-centered future. Along this path, we view production through the lens of responsibility; a responsibility that answers to environmental preservation, community well-being, and improved governance.

Green Wisdom presents MSC’s environmental, social, economic, and governance performance, and has been prepared in accordance with the international GRI Standards. The material topics addressed in this report have been identified and prioritized based on an analysis of stakeholder concerns, the company’s strategic priorities, and global trends demonstrating how sustainability is woven into the fabric of our decision-making and actions.

We offer this report not merely as a tool for disclosure, but as an invitation to dialogue a conversation with all stakeholders who seek to contribute to a brighter future. The full report is available on the company’s official website at www.msc.ir, and we welcome feedback through the contact channels provided.

Green Wisdom is a manifestation of our love for the Earth, respect for humanity, and belief in a balanced and sustainable future, a future in which development grows out of thoughtfulness, ethics, and responsibility.

CEO’s message

At Mobarakeh Steel Company, we firmly believe that the future of industry lies not in mere growth in production, but in a wisdom rooted in sustainability, responsibility, innovation, and responsible leadership. This belief has served as our compass in navigating turbulent times and increasingly complex domestic and global challenges.

The year 2024 was marked by both difficulties and achievements. On one hand, we faced fundamental challenges such as supply chain imbalances, water and energy constraints, market-controlling policies, and the ongoing pressure of international sanctions. On the other hand, our perspective on sustainability, as a comprehensive strategy, helped guide us intelligently through these crises. We are convinced that overcoming challenges requires a reliance on Green Wisdom: that is, making informed decisions based on the long-term interests of all stakeholders, within an ethical, human-centered framework supported by responsible leadership.

Green Wisdom is the strategic path we pursue to build a future that is greener, more ethical, and more sustainable, and it has been the source of inspiration behind many of our actions and transformations over the past year. Our focus on developing low-carbon technologies, enhancing energy efficiency, shifting toward renewable energy, fully recycling water, and moving toward alternative water sources has been aimed not only at reducing dependence on scarce resources, but also at exceeding global standards. Achievements such as being recognized as one of “Top five sustainability projects” by the World Steel Association, and receiving the “Five-Star Award for Excellence at an international level” from International Environmental, Social, and Governance (ESG) Excellence Award, affirms the direction we have taken.

In the field of innovation, our support for knowledge-based and startup companies, as well as academic and tech-based ecosystems, has led to the development of a new generation of technological solutions across the steel value chain. Today, we are advancing a steel industry that not only minimizes its environmental impact, but is also deeply committed to its social and economic responsibilities. In this regard, empowering local communities, supporting livelihoods, providing new skill training, and promoting a sustainable lifestyle have become an integral part of our mission under corporate social responsibility.

At MSC, we also recognize our human capital as the beating heart of transformation. Our efforts have been focused on creating a safe, healthy, and dynamic environment that fosters creativity and encourages meaningful participation among our employees. For us, organizational success cannot be separated from the success of the people behind it.

This report reflects the voice of all of us; the voice of a generation that, through Green Wisdom and responsible leadership, aspires to build a smarter industry, a more resilient economy, and a brighter future for Iran.

With hope for a better tomorrow and sustainability in all its dimensions

Dr. Saeed Zarandi | CEO of Mobarakeh Steel Group

Section 1
Our business

Who we are

We are MSC; a leading Iranian organization committed to advancing the country's industrial, economic, and social development through reliance on domestic capabilities. Our core business is steel production, a material that forms the backbone of today's infrastructure and supports the growth of tomorrow.

Over the years, and with the dedication of thousands of dedicated and skilled professionals, we have earned our place as the largest producer of flat steel products in the Middle East and North Africa (MENA) and the largest producer of Direct Reduced Iron (DRI) in the world. We are also proud to contribute to Iran's non-oil exports by delivering 1.4 million tonnes of steel products valued at over USD 700 million to international markets.

With more than 11,000 talented employees, we supply nearly one-third of Iran's crude steel output, supporting a diverse range of industries, including automotive, construction, energy, home appliances, and packaging. In addition to production, innovation is at the heart of our strategy. Through investments in over 30 knowledge-based companies and allocating more than 10000 billion Rials to innovation, MSC has strengthened the connection between industry and Iran's growing tech ecosystem. We are deeply committed to localizing knowledge and technology throughout the steel value chain.

Our role in creating over 380,000 direct and indirect job opportunities reflects not just our industrial power, but our deeper commitment to the country's future. We see ourselves as part of a network where entrepreneurship, value creation, and responsibility go hand in hand.

We are also honored that Iran now ranks 10th globally in steel production, and MSC has been recognized among the top five steelmakers worldwide in the World Steel Association's Sustainability Excellence Awards. To us, these achievements are not the end, but the beginning, marking greater responsibilities on our path forward.

Our mission is to produce steel products that enable national infrastructure development, and our vision is to become a national role model in responsible enterprise management, progressing thoughtfully and decisively toward joining the top 20 steel producers in the world.

We are MSC, where steel is born of knowledge, innovation emerges from responsibility, and the future is forged through wisdom and sustainability. We are MSC, on a journey of growth, learning, and service to a better future.

Chief Executive Officer:
Dr. Saeed Zarandi

Business Areas:
Iron making, steel making and production and sales of flat steel products

Key Products:
Hot-rolled steel roll, hot-rolled steel sheet, pickled steel roll, cold-rolled steel roll, cold-rolled steel sheet, narrow steel strip, tin-plated steel roll, tin-plated steel sheet, galvanized steel roll, color coated steel roll

Number of Employees:
11,766

Headquarters:
MSC Complex, Mobarakeh, ۲۵km southwest of Isfahan
MSC building, Saadat Abad Street, Azadi Square, Isfahan
No. ۲, Gol Azin Alley, Kohistan Street, Kitab Square, Saadat Abad, Tehran

Website:
www.msc.ir

Value creation system of MSC

Purpose	A responsible corporate to create a better future					
Mission	Production of steel products types in order to develop the country's infrastructures					
Vision	National model of business and a world-class company among the top ۲۰ steel companies in the world					
Strategies	Maximum and economic utilization of production capacities, focusing on the production of special products	Balanced development of the value chain and required infrastructure	Expansion of export markets and enhancement of the company's competitive position	Development of economic, social, environmental and governance sustainability	Development of human capital and improvement of employee productivity and commitment	Development of innovation and technology
Code of Conduct	Ethical excellence in the workplace		Ethical excellence in the market		Ethical excellence in society	
Organizational Values	Islamic and human values	Safety and quality	Excellence and innovation	Customer centricity	Transparency and organizational integrity	Responsibility and environmental protection

MSC's major strategic projects

Capacity expansion and production of special steel grades

- Construction of Hot Rolling Mill No. 2 (capacity: 2.4 million tons)
- Construction of Pickling Line and Tandem Cold Mill (PLTCM) (capacity: 2 million tons)
- Construction of Color Coating Line for Home Appliances (capacity: 120,000 tons)
- Construction of Alloy Steel Rolling Line (Electrical, DP) (capacity: 300,000 tons)

Clean and renewable energy

- Construction of a 914 MW Combined Cycle Power Plant
- Construction of a 600 MW Solar Power Plant

Group expansion

- Establishment of a Mining Holding in Eastern Iran (Sangan, Khorasan) through mergers or partnerships
- Establishment of a Steel Holding in Southern Iran through mergers or partnerships
- Establishment of a Financial Holding to enhance group-wide financial synergies

Responsible resource supply

- Expansion of mineral exploration activities within the Group

Digital transformation and smart operations

- Implementation of digital transformation and artificial intelligence to improve efficiency and reduce water and energy consumption

International market development

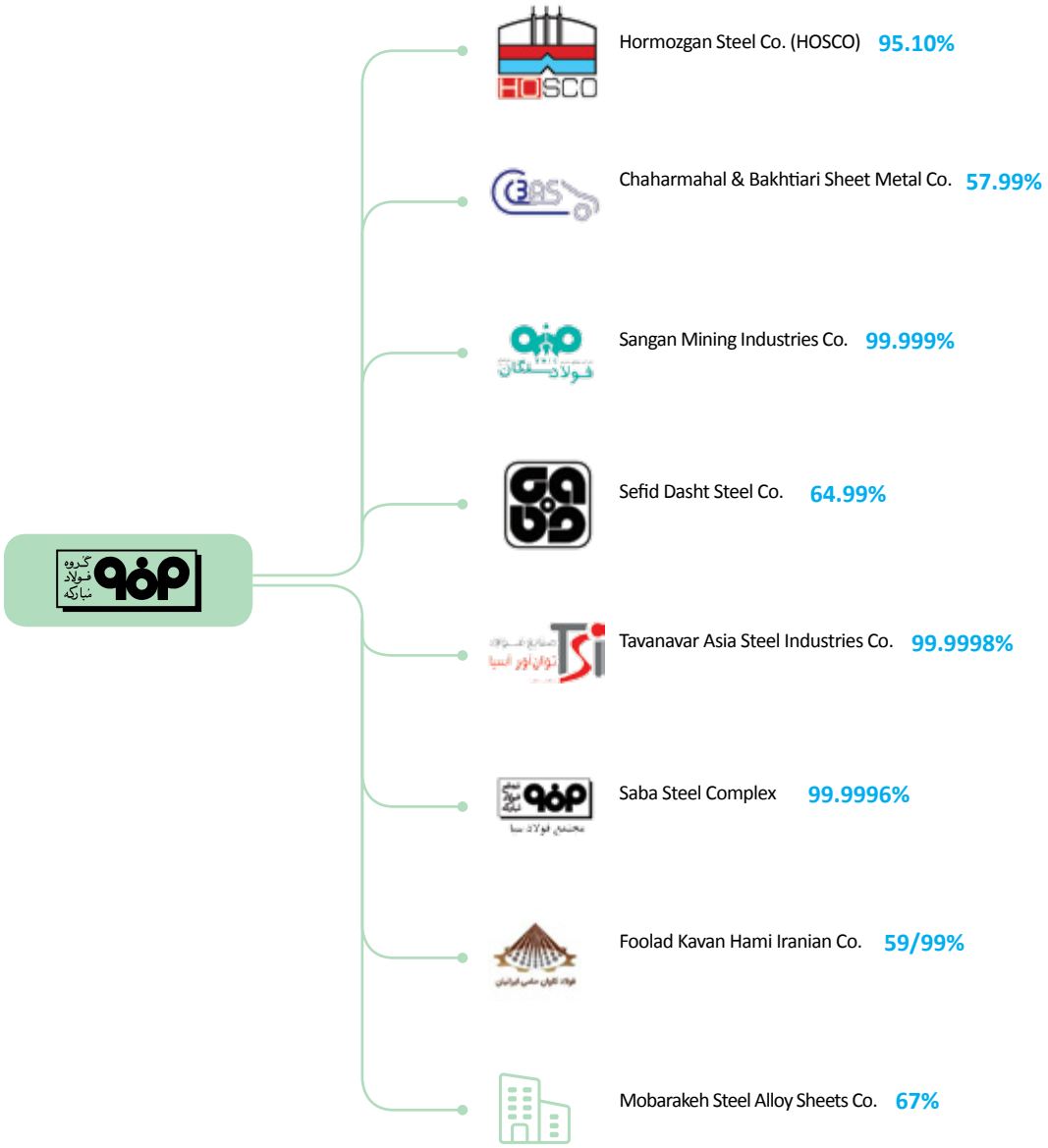
- Expansion into export markets through establishing service and production centers abroad

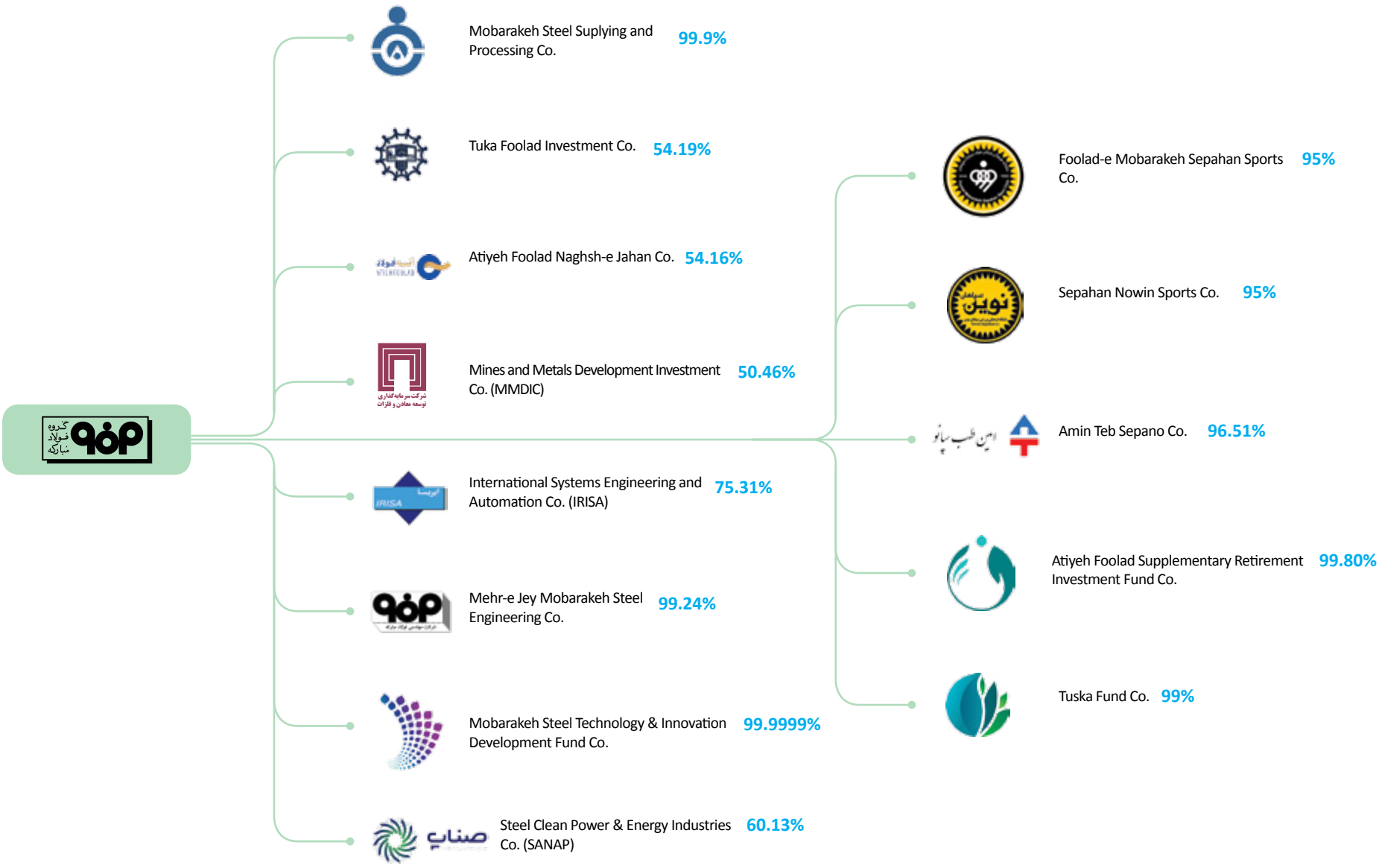
Mobarakeh Steel Group

Mobarakeh Steel Group, as one of the largest and most influential industrial and economic holdings in Iran, plays a pivotal role in advancing the country's sustainable development. By utilizing modern technologies, capable human capital, and a strategic approach to management, this group has formed an integrated steel production chain that encompasses everything from the extraction of raw materials to the production of finished products and the development of export markets.

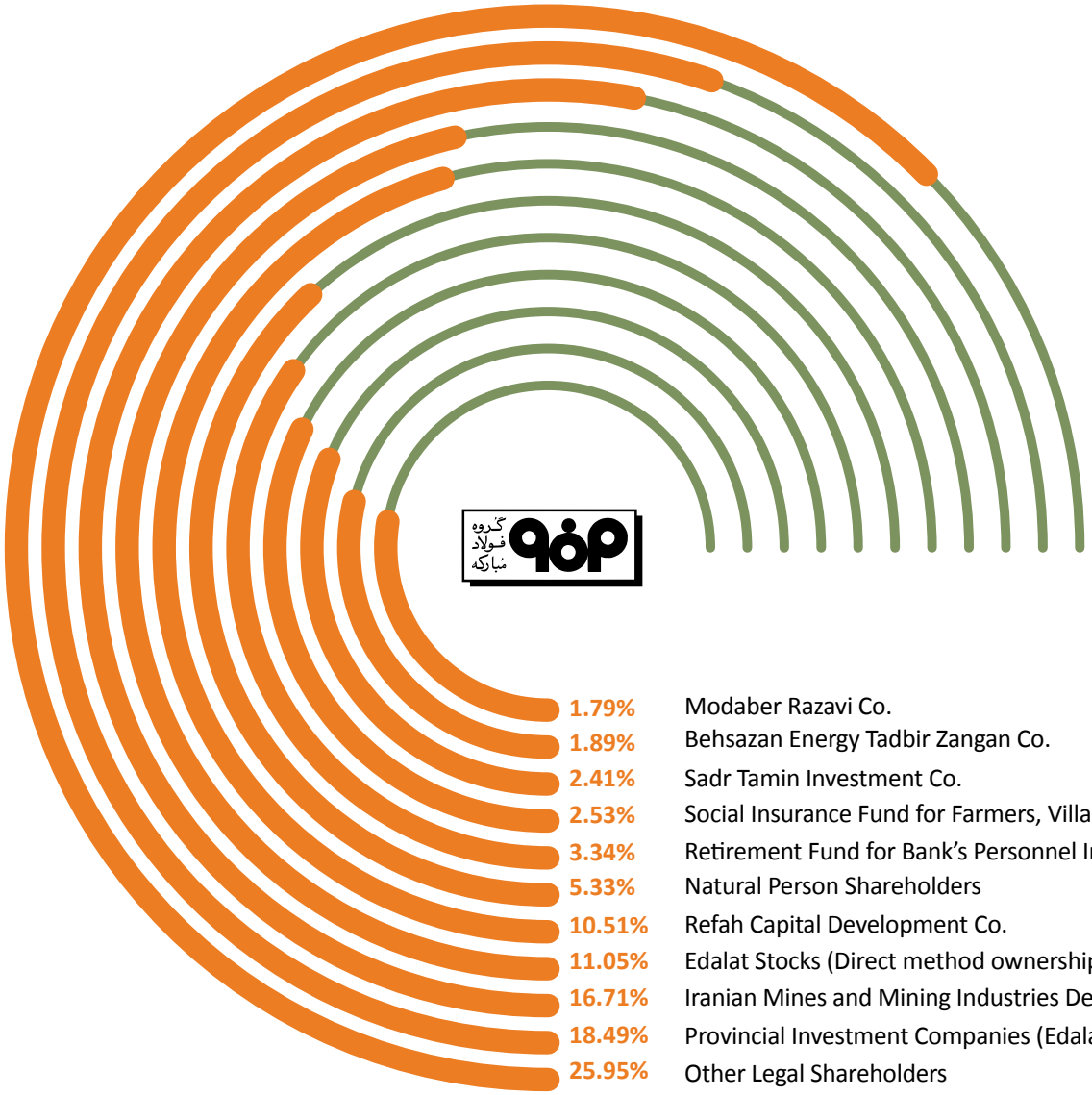
With a strong emphasis on quality and adherence to international standards, the Group's products meet the needs of a wide array of industries, including automotive, construction, energy, home appliances, transportation, and packaging. Today, Mobarakeh Steel Group, through a network of over 100 specialized companies across Iran, not only serves as the driving force behind the steel value chain, but also pioneers sustainable value creation for stakeholders and future generations by investing in innovation, supporting knowledge-based enterprises, and committing to social responsibility.

The group is committed to playing a national role in wealth creation, massive employment generation, technology localization, and expanding the country's industrial infrastructure, a path of progress pursued through synergy, collective wisdom, and a forward-looking perspective.




Mobarakeh Steel Suplying and Processing Co. 99.9%
Tuka Foolad Investment Co. 54.19%
Atiyeh Foolad Naghsh-e Jahan Co. 54.16%
Mines and Metals Development Investment Co. (MMDIC) 50.46%
International Systems Engineering and Automation Co. (IRISA) 75.31%
Mehr-e Jey Mobarakeh Steel Engineering Co. 99.24%
Mobarakeh Steel Technology & Innovation Development Fund Co. 99.9999%
Steel Clean Power & Energy Industries Co. (SANAP) 60.13%
Foolad-e Mobarakeh Sepahan Sports Co. 95%
Sepahan Nowin Sports Co. 95%
Amin Teb Sepano Co. 96.51%
Atiyeh Foolad Supplementary Retirement Investment Fund Co. 99.80%
Tuska Fund Co. 99%

MSC shareholders



1.79%	Modaber Razavi Co.
1.89%	Behsazan Energy Tadbir Zangan Co.
2.41%	Sadr Tamin Investment Co.
2.53%	Social Insurance Fund for Farmers, Villagers & Nomads
3.34%	Retirement Fund for Bank's Personnel Ins.
5.33%	Natural Person Shareholders
10.51%	Refah Capital Development Co.
11.05%	Edalat Stocks (Direct method ownership)
16.71%	Iranian Mines and Mining Industries Development and Renovation Org. (IMIDRO)
18.49%	Provincial Investment Companies (Edalat Stocks)
25.95%	Other Legal Shareholders

Our performance in 2024

MSC Performance in 2024

7.301
Crude steel production
(Million tons)

6.834
Hot rolled product
(Million tons)

11766
Number of employees

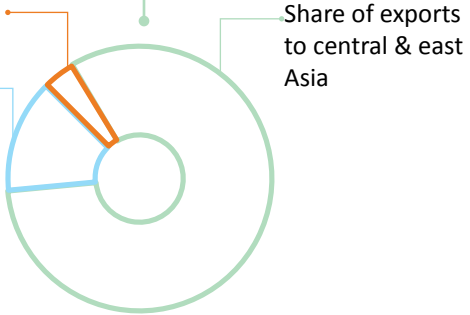
456
R&D Expenditure
(Billion IRR)

2,763,556
Total sales (Billion IRR)

334,744
Export (Billion IRR)

995,278
Net profit (Billion IRR)

6,416
Social investment (Billion IRR)



The economic and financial data presented in this report pertain to the fiscal year ending on March 19, 2025.

Steel shaped by green wisdom: The future we are building

At MSC, producing steel is not merely about manufacturing an industrial product; we are redefining the very concept of industry, an industry that, through Green Wisdom and advanced technologies, serves the planet, humanity, and the future. Our vision is clear: to create intelligent, low-emission, and resilient steel for a sustainable world.

Green technologies at the heart of production

The production pathway at MSC is founded on advanced and clean technologies:

- Direct reduction of iron ore pellets (DRI) using natural gas instead of coal is one of the cleanest methods for producing sponge iron. This process eliminates coke-making and blast furnace stages, significantly reducing CO_2 emissions.
- Eight Electric Arc Furnaces (EAFs) with 200-ton capacity melt sponge iron and scrap metal using electrical energy, without direct fossil fuel consumption, to produce molten steel.
- Extensive use of rail transport for moving raw materials and finished products helps reduce road traffic congestion and greenhouse gas (GHG) emissions.
- These technologies are the pillars of transformation toward low-emission steel, a vision that MSC is turning into reality.

From iron ore to galvanized steel plate: A sustainable chain

The MSC value chain, from iron ore extraction to the production of specialized steel plates and sheets, is designed to uphold environmental sustainability, high quality, and product diversity at every stage:

- In the ironmaking unit, iron ore concentrate purchased from various mines across the country, transported to the plant via rail, is converted into sponge iron with a minimum iron content of 92% and carbon content of 1.8%.
- In the steelmaking and continuous casting unit, which includes eight Electric Arc Furnaces (EAFs) each with a nominal capacity of 200 tons, DRI and steel scrap are melted to produce molten steel. This molten steel is then transferred to casting machines and converted into steel slabs.
- The hot rolling mill transforms these slabs into steel plates with thicknesses ranging from 1.5 to 16 millimeters.
- In the cold rolling unit, the same plates undergo thickness reduction down to 0.18 millimeters along with thermal and chemical processing, turning them into high value-added products such as:
  - Galvanized plate (anti-corrosion, suitable for construction and automotive industries)
  - Color-coated plate (for decorative and architectural applications)
  - Tinplate sheet (used in packaging and food industries)
  - Stainless steel (used in medical equipment, household appliances, and kitchenware)

With an annual production of nearly 8 million tons of various steel products, we meet the needs of a wide range of domestic industries, from construction and energy to automotive, home appliances, and transportation. These products are not only consumed domestically but are also exported to many countries worldwide.

Our products: steel for every dimension of life

At MSC, we don't just produce steel, we shape the language of utility and functionality through steel plates forged in durability, precision, and a vision for the future. Each of our products is a vital piece of the modern life puzzle, from massive structures to the everyday details of your home. At MSC, every steel plate reflects engineering wisdom and a commitment to a sustainable future. From production lines to lifelines, we build lives with steel.

Hot rolled and pickled steel plates

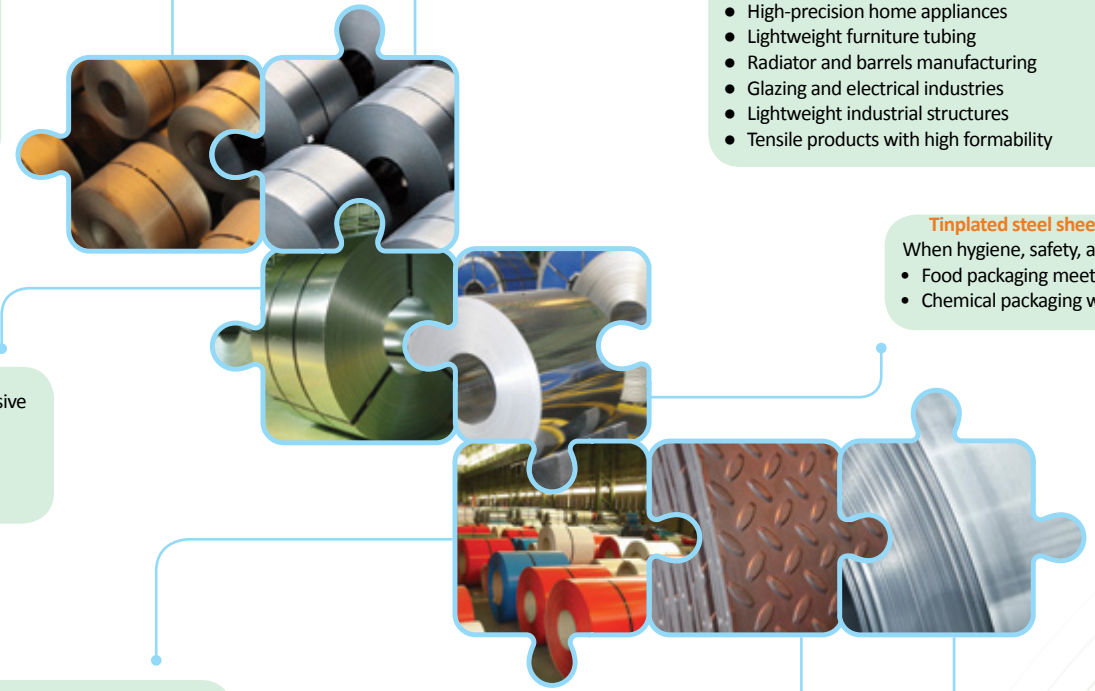
The backbone of heavy industry, ideal where both strength and formability are essential:

- Re-rolling
- Structural and mechanical pipes and profiles
- Fluid transmission pipes
- Pressure vessels and LPG storage tanks
- Offshore and building structures
- vehicle chassis
- Industrial tensile products

Cold rolled steel plates

A choice for precision, elegance, and finesse used in technical and domestic applications:

- Visible and hidden parts of vehicle bodies
- High-precision home appliances
- Lightweight furniture tubing
- Radiator and barrels manufacturing
- Glazing and electrical industries
- Lightweight industrial structures
- Tensile products with high formability



Tinplated steel sheets

When hygiene, safety, and durability are top priorities:

- Food packaging meeting health standards
- Chemical packaging with high protective properties

Galvanized steel plates

A coating of reliability for humid and corrosive environments:

- Long-lasting building industry
- Durable home appliances
- Rust-resistant vehicle

Stainless Steel

When steel pushes the boundaries of durability, hygiene, and aesthetics

- Sanitary processing equipment, production lines, hygienic packaging, and storage tanks
- Surgical instruments, sterile tables, cleanrooms
- Pipes, heat exchangers, and pressure vessels
- Sinks, stove, hoods, dishwashers
- Metal facades, railings, and modern decorations
- Ship hulls, wagons, and corrosion-resistant components

Pre-painted steel sheets

A blend of beauty and functionality for modern and practical spaces:

- Building facade design
- Production of colorful and attractive home appliance bodies

Checker plate steel

Safety in step, strength in path:

- Offshore platform decks
- Ship flooring
- Industrial staircases
- Wagon and vehicle industries

Section 2
Sustainability approach

GREENWISE framework

In pursuit of playing an active role in the path toward sustainable development and moving toward comprehensive responsibility towards society and the environment, Mobarakeh Steel Group has designed and implemented a strategic and forward-looking framework titled “GREENWISE”.

This framework not only outlines the Group’s sustainability roadmap but also establishes an integrated platform to align the strategies, programs, and actions of its subsidiaries companies with social, environmental, and economic commitments.

The main mission of this structure, in addition to guiding, supporting, and providing thought leadership to all Mobarakeh Steel Group companies in incorporating sustainability into their business strategies, is to provide a framework in the field of sustainability that aligns and orients the goals and actions of the Mobarakeh Steel family of companies, thereby demonstrating their responsibility towards the planet and its inhabitants

The concept of GREENWISE goes beyond a mere title; it symbolizes a company with deep, committed insight, striving to make decisions rooted in foresight, ethical values, innovation, and the protection of natural resources. MSC is making a dedicated effort to transform from a purely industrial organization into a green wise organization, one in which economic growth is balanced with human well-being and the health of the planet.

In developing this framework, following comprehensive benchmarking and comparative studies of leading international models, a proprietary GREENWISE model was designed. The title GREENWISE is an acronym representing a set of key pillars in the field of sustainable development.

GREENWISE

At MSC, we believe that the future of the industry lies not only in the power of production, but also in the wisdom of sustainability. The GREENWISE framework is our compass for shaping a greener, more ethical, and human-centered future. More than just a set of performance domains, this framework reflects our responsibility toward future generations, society, and the environment. Guided by innovation, accountability, and synergy, we have charted a path toward balanced, sustainable, and inclusive development.

Green Performance

This pillar focuses on minimizing environmental impact through efficient resource use, waste reduction, and emission control. It encompasses practices that enhance energy efficiency, lower the carbon footprint, and promote sustainable production processes.

Responsible business

This pillar embodies conducting business in an ethical, transparent, and accountable manner. It includes fair labor practices, respect for human dignity, and ensuring that business operations have a positive impact on both society and the environment.

Employee happiness and wellness

This pillar emphasizes fostering a supportive and healthy work environment. It involves initiatives for physical and mental well-being, work-life balance, and cultivating a culture where employees feel valued, and motivated.

Ethics and good governance

This pillar entails adherence to high standards of fairness, honesty, and ethical conduct across all business dealings. It includes robust governance structures, compliance with laws and regulations, and the cultivation of a culture of honesty and accountability.

New energies

This pillar focuses on embracing and advancing renewable energy sources such as solar, wind, and bioenergy. It also includes investing in technologies and practices that reduce dependence on fossil fuels and support the transition to a low-carbon economy.

Water stewardship

This pillar involves the responsible management of water resources to ensure their availability for future generations. It includes efficient water use, pollution reduction, and the protection of water resources through sustainable practices.

Innovation and technology

This pillar highlights the importance of leveraging advanced technologies and innovative solutions to drive sustainability. It encompasses research and development, adoption of emerging technologies, smart solutions and Intelligence, digital transformation, and fostering a culture of continuous improvement.

Sustainable communities

This pillar focuses on contributing to the well-being and development of communities. It includes initiatives that support education, healthcare, infrastructure, and economic opportunities, ensuring the sustainability of society.

Eco-solutions, processes and products

This pillar involves developing and implementing environmentally friendly solutions, processes, and products. It includes designing products with reduced environmental impact, utilizing sustainable materials, and adopting environmentally friendly production processes.

GREENWISE

The sustainability pathway of Mobarakeh Steel Group: Toward becoming a green wise organization

In line with its commitment to a sustainable future, Mobarakeh Steel Group has embarked on a strategic journey with the ultimate goal of transforming into a green wise organization, an entity that draws on collective intelligence to make decisions grounded in sustainability, innovation, and responsibility toward people and the planet.

This strategic journey began with the development of the GREENWISE framework, a comprehensive roadmap that guides all subsidiaries of Mobarakeh Steel Group in integrating sustainability principles into their business models. More than just a tool for strategic alignment, the GREENWISE reinforces the Group's sustainability identity around nine key pillars, including Green Performance, Responsible Business, Innovation and Technology, Water Stewardship, New Energies, etc.

As a continuation of this path, the development of a Group-wide ESG Indicator data bank has been set in motion. This system of indicators is designed to assess, monitor, and improve performance across Environmental (E), Social (S), and Governance (G) dimensions. Tailored to the specific activities, scale, and sectoral context of each subsidiary, the ESG indicators will be categorized, localized, and standardized, providing a transparent foundation for reporting, accountability, and comparability of sustainable performance among subsidiaries.

Following this, the development of sustainability reports across the Group's companies will be initiated. Through transparent disclosure of their sustainability actions and achievements, each company will lay the groundwork for participating in both national and international ESG ratings and awards. This step not only demonstrates the companies' commitment to sustainable value creation, but also enhances their competitive positioning at both domestic and global levels.

At the end of this journey, and based on the reports of the Group's subsidiaries, the comprehensive sustainability report of Mobarakeh Steel Group will be developed, a report that not only reflects the Group's environmental, social, and economic performance, but also tells the story of the transformation of a major industrial conglomerate toward green wise, systematic sustainability, and inclusive responsibility.

By outlining this path and committing to it in practice, Mobarakeh Steel Group presents itself as a pioneer of the country's green and sustainable industry, an industry that understands real growth has no meaning without responsibility toward the future of the Earth and future generations.

Institutionalizing the ESG System in Mobarakeh Steel Group

The implementation of sustainability management enables Mobarakeh Steel Group to present its extensive and valuable activities in a cohesive, reportable, and assessable format. At the same time, it prepares the organization for obtaining international certifications and participating in global ESG ratings.

Accordingly, six steps have been defined for institutionalizing the ESG system within Mobarakeh Steel Group. The first three steps have been achieved during the sustainability training programs for the Group's companies (under the title of "Excellence Ambassadors Courses"), and the remaining three steps will be completed by the horizon of 2026.

The ESG Institutionalization roadmap in Mobarakeh Steel Group

Step 1

Defining the sustainability framework of Mobarakeh Steel Group
- Designing an integrated ESG framework for the entire Group
- Alignment with international standards and initiatives such as GRI, SDGs, and the strategies of MSC

Step 2

Analyzing the current state of each subsidiary
- Identifying material topics relevant to each company's mission using a materiality matrix approach:
  - o Production companies: emission reduction, energy consumption, employee safety, supply chain risk
  - o Service companies: employee well-being, social impacts, resource management
  - o Investment/holding companies: corporate governance, transparency, responsible policy-making

Step 3

Developing the sustainability strategy for Mobarakeh Steel Group
- Integrating key ESG topics across the group and its subsidiaries

Step 4

Implementing the ESG rating system in Mobarakeh Steel Group
- Designing ESG monitoring dashboards for each company and ranking them

Step 5

ESG evaluation and continuous improvement in Mobarakeh Steel Group
- Analyzing the progress of ESG initiatives by subsidiary and enhancing performance through annual review cycles
- Organizing an internal sustainability award (similar to the World Steel Association's sustainability awards) for Mobarakeh Steel Group companies

Step 6

Sustainability reporting for Mobarakeh Steel Group
- Preparing the Sustainability Report of Mobarakeh Steel Group, covering the performance of the entire Group and its subsidiaries individually

Developing sustainability frameworks for Mobarakeh Steel Group companies

Aligned with the Group-wide sustainability framework of Mobarakeh Steel and as part of the ESG institutionalization process, the sustainability frameworks of the Group's subsidiaries have been developed based on Mobarakeh Steel's GREENWISE framework.

In line with the integration of key ESG topics across the Group and its subsidiaries, these sustainability frameworks have been tailored according to the nature of each company's operations, production, services, or investment/holding.

MSC Sustainability framework

Green wisdom: Our compass toward a sustainable future

Our roots are grounded in a land where future-making for generations is a core value. The very purpose of MSC is built upon the foundation of the wisdom of sustainability, a profound vision of the responsible coexistence of humanity, industry, and nature.

From this conviction emerges our belief that sustainability is not merely a strategic choice, but an inseparable part of our intellectual DNA. To embody and realize “Creating a Better Future for All Stakeholders,” a comprehensive structure has been designed under the title of the MSC Sustainability Framework.

This framework serves as a structured guide outlining the key areas of focus in sustainability across the three fundamental dimensions of Environment, Society, and Governance (ESG). These areas have been identified, prioritized, and translated into actionable plans and measurable objectives by specialized working groups within the organization

But this framework is more than just a roadmap, it is a manifestation of “responsible thinking” and “long-term pragmatism”. Through this structured path, we align our development trajectory with the progress of the communities in which we operate, ultimately building a business that:

- In its interaction with the environment, acts as a steward of natural resources for future generations;
- In the social sphere, becomes a source of inspiration for empowerment and inclusive justice;
- And in governance, serves as a model of transparency, ethics, and accountability.

Throughout this journey, green wisdom is our guide, a wisdom that seeks solutions to shape a brighter future for both people and the planet.

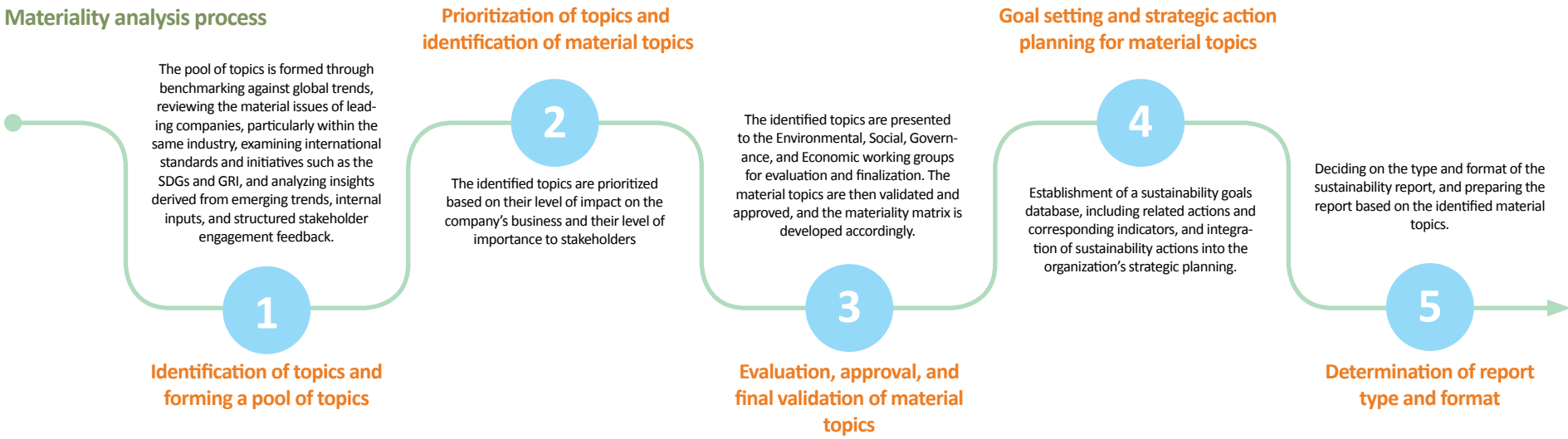
Materiality analysis

At MSC, we believe that the path to sustainability begins with a clear understanding of “what matters most”. That’s why we implement materiality analysis as one of the key pillars of our sustainability planning to identify and prioritize the most significant topics that affect both our business and our stakeholders.
This process begins by building a pool of potential topics, a comprehensive set informed by insights derived from the following sources:

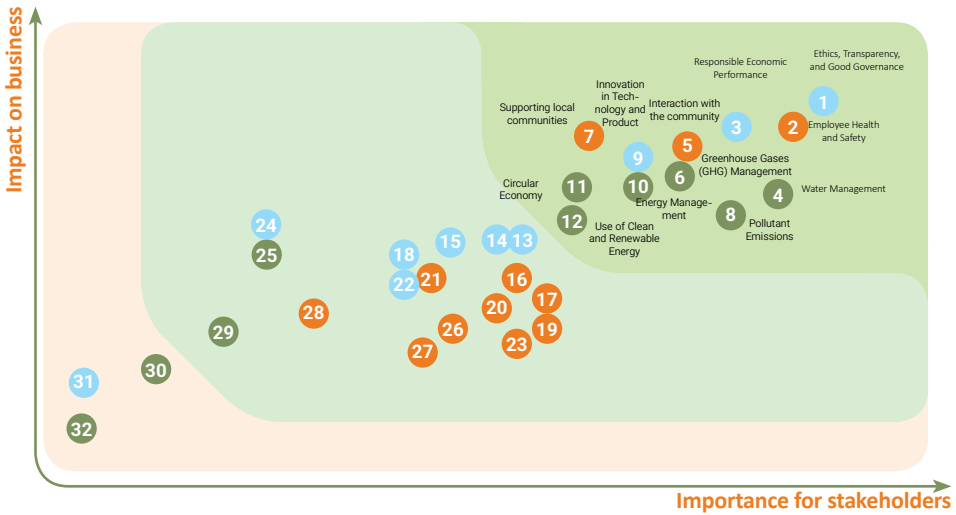
- Continuous monitoring of global trends and megatrends
- Analysis of material topics reported by leading global companies, particularly in comparable industries
- International standards and initiatives such as the SDGs, GRI, and other ESG-related agendas and initiatives
- Feedback gathered from structured stakeholder engagement processes

These topics are then prioritized using a Materiality Matrix and dual criteria, “importance to stakeholders” and “impact on the business”, to extract a list of key Material Topics. These topics serve as the company’s primary focus areas for sustainability and form the roadmap for developing strategies, goals, and actionable plans.
In the final step, the validated topics are used as the foundation for determining the structure and format of the sustainability report. It is worth noting that in the 2025 report, the focus areas for 2024, following the relevant analyses, were formally approved and selected as the basis for report development. (Specifically, the topic “CO_2 Emission Intensity” was renamed to “Greenhouse Gases (GHG) Management”, and the topic “Air Pollutant Emissions” was revised to “Pollutant Emissions”).

Materiality analysis process



Materiality matrix



Material topics

E
- 4 Water Management
- 6 Greenhouse Gases (GHG) Management
- 8 Pollutant Emissions
- 10 Energy Management
- 11 Circular Economy
- 12 Use of Clean and Renewable Energy

S
- 2 Employee Health and Safety
- 5 Interaction with the community
- 7 Supporting local communities

G
- 1 Ethics, Transparency, and Good Governance
- 9 Innovation in Technology and Product
- 3 Responsible Economic Performance

Additional topics

- 25 Material Efficiency
- 29 Drinking Water and Food Hygiene
- 30 Environmental Management System
- 32 Biodiversity
- 16 Employee Engagement and Communication
- 17 Quality of Life and Work-Life Balance
- 19 Organizational Justice and Equal Opportunity
- 20 Sustainable Livelihoods for Employees
- 21 Training And Developing People With Potential For Future Recruitment
- 23 Education and Human Capital Development
- 26 Hygiene and Health of Community
- 27 Job Creation
- 28 Attraction of Qualified Human Resources
- 13 Protection of Shareholder Rights
- 14 Customer Satisfaction Improvement
- 15 Product Portfolio Diversification
- 18 Digitalization and Smart Transformation
- 22 Shared Growth with Business Partners
- 24 Risk Management
- 31 Investment in New Business Ventures

The numbers assigned to each topic, as well as the materiality matrix, indicate the priority of each topic.

Material topics	International standards and initiatives		The GREENWISE framework
	GRI	SDG	
1 Ethics, Transparency, and Good Governance	GRI 205	SDG 16	Ethics and Good Governance
2 Employee Health and Safety	GRI 403	SDG 3, 8	Employee Happiness and Well-being
3 Responsible Economic Performance	GRI 201, 203	SDG 8	Responsible business
4 Water Management	GRI 303	SDG 6, 12	Water stewardship
5 Interaction with the community	GRI 413	SDG 11, 16	Sustainable communities
6 Greenhouse Gases (GHG) Management	GRI 305	SDG 12, 13	Green performance
7 Supporting local communities	GRI 413	SDG 1, 8, 11	Sustainable communities
8 Pollutant Emissions	GRI 305	SDG 3, 11, 13	Green performance
9 Innovation in Technology and Product		SDG 9	Innovation and Technology
10 Energy Management	GRI 302	SDG 7, 13	New energies
11 Circular Economy	GRI 306	SDG 12, 13	Eco- Solutions, Processes, and Products
12 Use of Clean and Renewable Energy	GRI 302	SDG 7, 13	New energies

Stakeholder Engagement

At MSC, effective engagement with stakeholders is considered one of the core pillars in building a better future and creating a sustainable business. We believe that deeply understanding and responsibly addressing the needs, expectations, and concerns of stakeholders is essential for informed decision-making, rooted in green wisdom and aligned with sustainability objectives.

To this end, a diverse set of communication channels has been designed and activated to continuously and constructively gather feedback from stakeholders. The insights gained through these interactions serve as one of the most critical inputs for the company's stakeholder engagement system and are utilized across various organizational frameworks, such as the Social Responsibility Council. These insights also play a key role in formulating and revising the company's strategies, policies, and programs, especially in the Environmental, Social, and Governance (ESG) domains.

In line with institutionalizing this approach, MSC has developed and implemented a six-step stakeholder engagement framework, which includes the following stages: 1) Identification and categorizing of stakeholders, 2) Prioritization of stakeholders based on power and interest, 3) Identification of stakeholders' needs, expectations, and future concerns, 4) Analysis and prioritization of those needs and expectations, 5) Development and implementation of a Stakeholder Engagement Plan (SEP) and 6) Ongoing evaluation and review.

This structured process enables us to make more holistic decisions that reflect shared interests and contribute to strengthening trust, fostering synergy, and generating long-term value for all stakeholders.

The process of stakeholder engagement

MSC's key stakeholders

Shareholders

Why this stakeholder group is important to us:

- They are the owners of the company

How we engage with them:

- Extraordinary General Assembly and Annual General Assembly
- Approvals and minutes of the General Assembly
- Board meetings
- Office correspondence, telephone, fax and email
- Survey
- Face-to-face communication (in person and meetings)
- Stock exhibitions
- Company website
- Social media

What are the key topics of engagement:

- Improving economic performance (profitability, production and export)
- Maximum distribution of cash profit
- Timely and effective implementation of development plans
- Provide clear, accurate and timely information and reporting
- Attention to the principles of sustainability and social responsibilities
- Using expert managers in the board of directors and key jobs of companies
- Variety of response channels with a focus on electronic channels

Customers

Why this stakeholder group is important to us:

- They give us the opportunity to build mutually beneficial long-term relationships, and meeting their expectations is the foundation of our business success.

How we engage with them:

- Customer Relationship Management (CRM)
- Survey
- Visiting customers' sites and vice versa
- Holding technical and business meetings
- Holding joint exhibitions and conferences
- Claims, complaints and other customer feedback
- Office correspondence, email, phone and fax
- Social media
- Technical booklet/brochure/catalogue
- Collaboration/joint project

What are the key topics of engagement:

- Quality of products
- Timely delivery
- Flexibility in terms of financial payment
- Competitive price
- Stability of supply
- Production of special products
- Responsiveness and continuous communication
- Providing technical guidance and recommendations

Suppliers

Why this stakeholder group is important to us:

- They provide raw materials and services vital to the production and continuation of our business.

How we engage with them:

- Face-to-face meetings and visits to suppliers' sites
- Official correspondence, email, phone and fax
- Supplier Relationship Management (SRM)
- Survey
- Attending exhibitions and conferences
- Holding a conference for suppliers
- Social media
- Steel newsletter

What are the key topics of engagement:

- Developing a sustainable relationship
- Proper communication and interaction with company managers
- Timely payment of bills

Society and legal entities

Why this stakeholder group is important to us:

• The social and legal license of our activity depends on creating value for society as well as effective engagements based on rules and regulations with them and legal entities.

How we engage with them:

• Legal requirements and standards
• Correspondence and official requests
• Face-to-face meetings and agreements
• Reports
• Conferences and exhibitions
• Survey
• Steel newsletter
• public media
• website
• Social media
• Press conferences

What are the key topics of engagement:

• Improving economic performance (profitability, production and export)
• Compliance with rules and regulations
• Transparency and accuracy in providing information
• Optimal use of energy sources and carriers (water, natural gas)
• Management of pollutant emissions
• Optimal waste management
• Using renewable energy and new technologies to reduce carbon emissions
• Supporting and providing the maximum needs of the downstream industries of the province
• Playing a role in national and regional development
• Providing economic and development achievements
• Providing assistance in line with social responsibilities
• Compliance of activities with legal requirements
• Transparency and accountability

Employees

Why this stakeholder group is important to us:

• Employees are the key to the success of our business. Their efforts are instrumental in realizing our strategies and goals and for the growth of our business.

How we engage with them:

• Joint meetings with leaders, managers, bosses and supervisors
• Correspondence, phone calls and in-person referrals
• Employee performance management system
• Survey
• Social networks and systems (such as the employee portal, My Steel app.)
• Steel newsletter
• Complaints system
• Educational and consulting services

What are the key topics of engagement:

• Improvement of living conditions and welfare
• Effective development of succession system
• Continuous improvement of safety and health of employees and working environment conditions
• Providing appropriate and effective training
• Notification of important and related events and news
• Establishing communication channels between MSC and retirees
• Establishing a balance between responsibility and authority and compensation for services
• Improving the incentive and compensation system according to performance, competence and organizational position and job responsibility
• Solving pension fund problems
• Establishing the work-life balance of employees

MSC Group companies

Why this stakeholder group is important to us:

• MSC Group companies are members of our family.

How we engage with them:

• Meetings and visits
• Board members and audit committees of companies
• Office correspondence, email, phone, fax and social media

What are the key topics of engagement:

• Developing strategic direction and holding meetings to align company goals and strategies
• Sharing knowledge and management skills at the level of group companies
• Integrated salary payment system at the group level
• Using expert managers in the board of directors and key jobs of companies
• Stable supply of raw materials and consumables

MSC Sustainability report | 2025

Section 3
(ESG) performance

Environmental performance

For green earth

At MSC, we regard the environment as a precious legacy, one that must be entrusted to future generations through wise and thoughtful stewardship. Our perspective on development is green and responsible: a development where wisdom prevails over short-term gains, and the Earth remains a safe, verdant, and vibrant home for generations to come.

This deep-rooted attitude is reflected in both our technical and strategic choices. The adoption of Midrex direct reduction technology (DRI) and electric arc furnaces (EAF) is a clear indication of our commitment to low-carbon, environmentally considerate solutions. At MSC, we believe that the true path to development lies in harmonious coexistence with nature.

In this regard, we have invested nearly 30000 billion Rials in the installation of advanced air purification and dust control systems. Out of more than 250 environmental projects undertaken, 60 have been specifically dedicated to improving air quality, at a time when the issue of “clean air” has become one of the most critical concerns facing communities worldwide.

In addition, MSC is one of the pioneers of industrial water recycling in Iran, an approach that has long been embedded in our operational programs with the aim of reducing pressure on the region’s surface and groundwater resources.

Through the implementation of advanced water treatment and recycling systems, we have been able to meet a significant portion of our water needs via reclaimed sources.

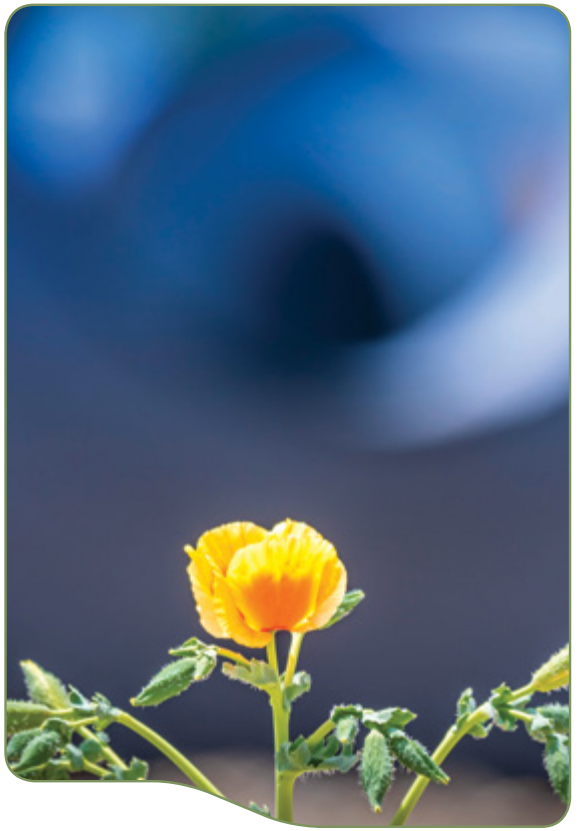
Furthermore, our participation in the water transfer project from the Sea of Oman forms a key part of our long-term strategy for sustainable water supply. This initiative is designed to reduce extraction from the aquifers of central Iran and contribute to the environmental resilience of these ecosystems and the communities that depend on them.

To date, we have invested over one billion dollars in environmental initiatives. Moreover, every development project we undertake is accompanied by the enforcement of the strictest environmental standards imposed on contractors. These may appear as mere figures and statistics, but in truth, they are a testament to a profound commitment, one rooted in MSC’s green wisdom.

Our green path is forged through the heart of industry, yet its destination is the well-being and serenity of the Earth.

MSC's First five-year environmental improvement vision document

Purpose	A responsible corporate to create a better future
Environmental mission	An organization with sustainable environment
Strategic objectives in the first five-year environmental vision (horizon 2026)	Comprehensive, coordinated, and systematic water resource management
	Reduction of CO_2 emissions toward achieving carbon-neutral steel production
	Reduction of air pollutant emissions
	By-product management and achieving zero waste
	Protection of biodiversity



Climate strategy and the path to carbon neutral

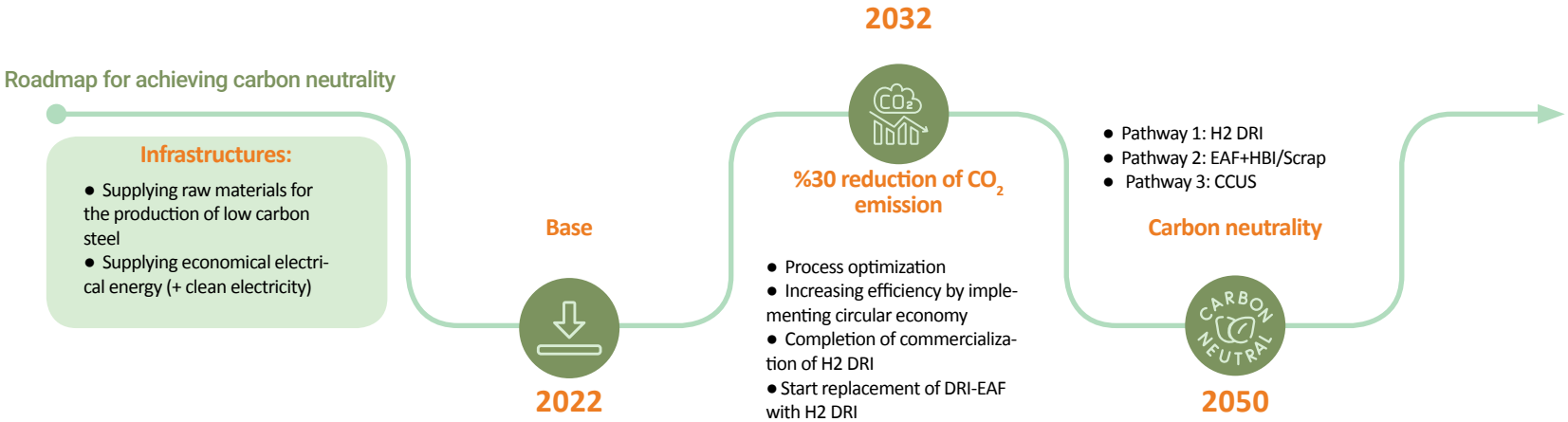
In an era marked by climate transformations and global responsibilities to combat global warming, MSC, fully aware of its pivotal role as a leader in the steel industry both nationally and regionally, has embarked on a transformative journey toward a low-carbon future.

In response to the global challenge of climate change and in alignment with the Paris Agreement and the UN's Sustainable Development Goals (SDGs), MSC has developed a "Roadmap to Achieve Carbon Neutral by 2050", taking significant steps toward reducing GHG emissions.

This strategy has been designed with a life-cycle approach, covering the entire spectrum from a green supply chain to the production of environmentally friendly products. The key pillars of this roadmap include process optimization, development of innovative technologies such as hydrogen-based direct reduced iron (H_2-DRI), utilization of circular economy models, and the use of renewable energy sources along with carbon capture, utilization, and storage (CCUS) technologies. MSC has set a target, based on this roadmap, to reduce carbon emissions by 30% by the horizon of 2032. Through the implementation of circular projects and the adoption of advanced technologies, the company aims to become one of the pioneers of decarbonization in the steel industry of the region.

This roadmap serves as a guiding document that outlines the operational steps for the coming years, steering a smart transition toward green steel.

By implementing this roadmap, MSC is not only committed to playing a responsible role in mitigating climate impacts, but also aspires to become an inspiring model for other the country's industrial players in transition toward a green economy.



Management, monitoring, and control of air pollutant

At MSC, the monitoring and control of air pollutants is not merely an environmental obligation, but a reflection of green wisdom in industrial governance and sustainability wisdom in the company's Long-term view of development. Adopting a data-driven and forward-looking approach, the company has designed and implemented advanced systems and a variety of programs for the effective management of pollutants.

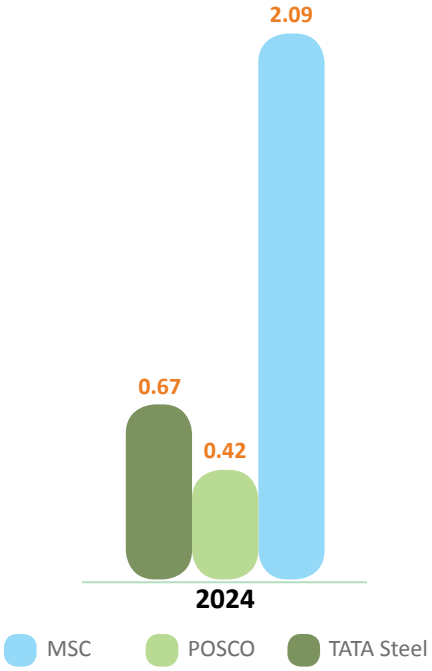
Within this framework, the concentration of pollutant gases are measured at 56 locations, and particulate matter is monitored at 62 different points across the factory. Among these, online monitoring of gases is conducted at 12 locations, and dust emissions from stacks are monitored 24/7 (24 hours a day, seven days a week) at 5 points. Pollutants such as CO, NOx, and SO_2, along with dozens of other emissions, are closely monitored through these systems.

In addition, at least 52 environmental parameters related to water and wastewater are continuously monitored by the Iran's Department of Environment's accredited laboratory.

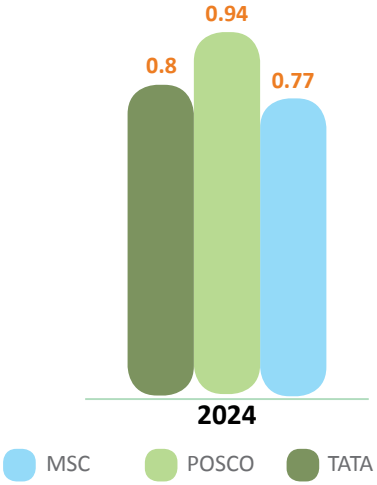
Among the key measures of MSC in the field of air pollutant monitoring are the following:

- Measurement of soil pollutants to assess cumulative environmental impacts
- Monitoring pollution caused by the company's internal transport fleet within the framework of the secondary pollution reduction program
- Installation of three AQI systems to monitor air quality inside the factory, with the ability to display real-time data in the environmental SCADA system
- Implementation of the second phase of online monitoring of Chimney outlets from production units to enhance the accuracy and comprehensiveness of pollutant tracking
- Launch of an integrated SCADA system for environmental monitoring as a digital transformation infrastructure to consolidate, supervise, and analyze environmental data
- Installation of MSC's dedicated meteorological station with real-time data logging at http://hse.msc.ir/#/weather and sharing with international stations

These measures, in addition to reducing environmental risks, enhance the company's capacity for wise decision-making in managing natural resources and clean air, as well as the environmental data needed for engineering and construction planning.



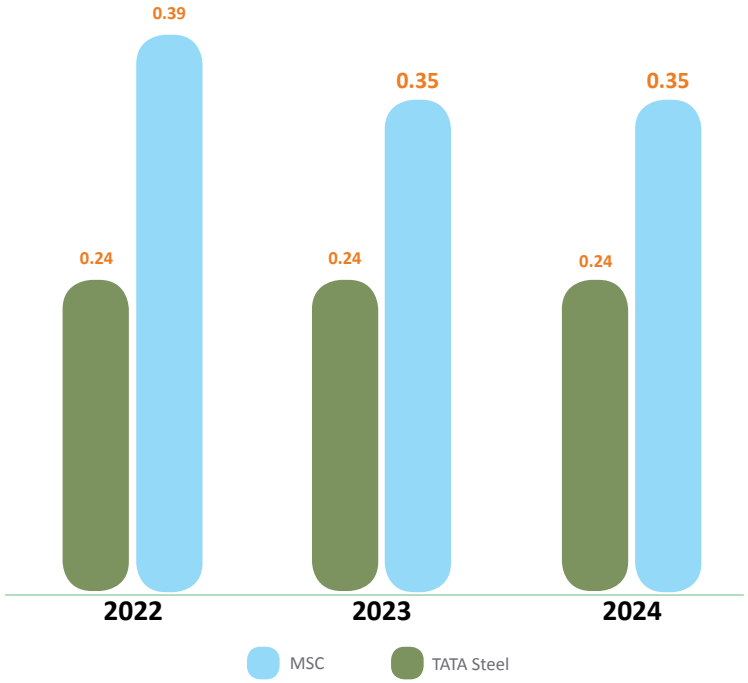
SOx intensity (Kg/ton of crude steel)



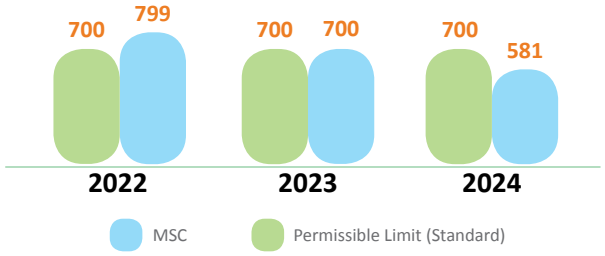
NOx intensity (Kg/ton of crude steel)

The higher SOx emission intensity at MSC compared to benchmarked figures from leading global companies is primarily due to the lower quality of input materials, particularly iron ore and concentrate, sourced from domestic mines. These raw materials contain higher levels of impurities compared to global standards, which leads to increased SOx emissions during the production processes.

Online monitoring of pollutants in the environmental SCADA system



Dust emission intensity (Kg/ton of crude steel)



CO emission concentration (mg/Nm^3)

Installation and optimization of industrial filters in furnaces and production units

Ambient dust monitoring and control

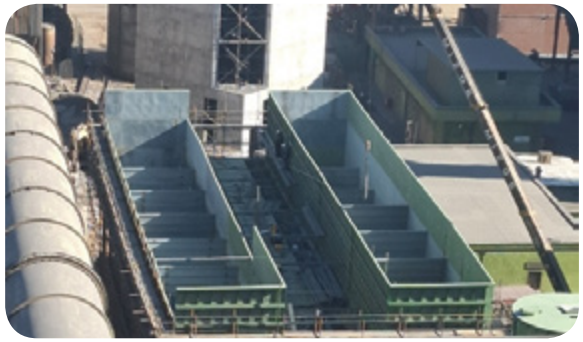
Air pollution control and reduction of dust emissions have always been among the strategic and serious concerns of MSC, particularly within its production units. In its path toward becoming a green wise industrial leader, the company has adopted a multi-dimensional approach to dust management, grounded in local innovation and sustainable practices.

Under the supervision of the Iran's Department of Environment's, MSC regularly monitors air quality at 56 locations for gaseous pollutants and 62 locations for particulate matter. In addition, 14 locations are equipped with a comprehensive online monitoring system for real-time data collection. Three internal AQI stations and a dedicated meteorological station have also been established to monitor environmental data through the Environmental SCADA System.

Dust removal/reduction from the roof of steelmaking area

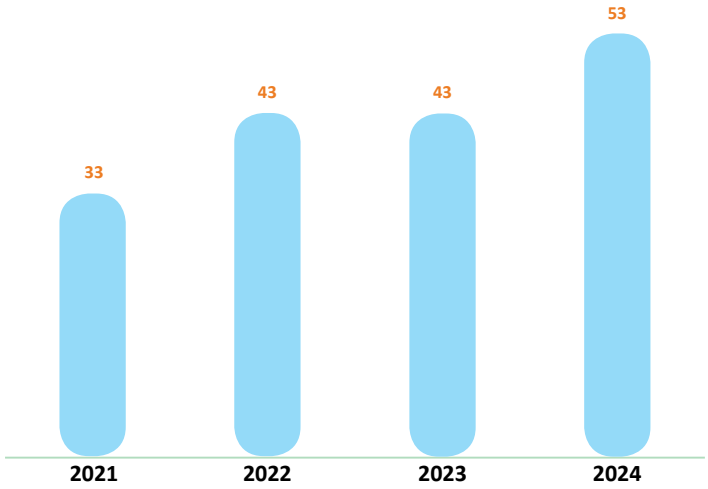
The project to upgrade and renovate the dust collectors on the steelmaking workshop roof is considered one of MSC's flagship environmental initiatives in air pollution control. The primary objective of this project is to capture all airborne dust particles released beneath the steelmaking hall roof and direct them into stacks, where they pass through advanced filtration systems, effectively preventing the release of particulate matter into the environment.

With an air treatment capacity of 6 million m3 per hour and an investment exceeding 18,000 billion IRR, this project is not only unparalleled in scale but also plays a crucial role in reducing dust and PM10 emission intensity in the surrounding area. It marks a strategic step toward fulfilling MSC's environmental commitments and enhancing regional air quality.



6000000 m^3 per hour
Air treatment capacity

1800 billion Rials
Investment



Ambient dust emission concentration/PM10 (μg/Nm³)

This chart illustrates the annual trend of PM10 particulate concentration in the ambient air of MSC from 2021 to 2024. Since 2016, when the emission peaked at 91 micrograms per m^3, significant reductions have been achieved through the implementation of control measures, bringing the concentration down to 53 micrograms in 2024. This performance confirms that over the past decade, PM10 levels have consistently remained below the legal limit of 70 micrograms per m^3, demonstrating the effectiveness of the company's environmental initiatives.

Construction of briquette factory

In the steel production process, lime is one of the key auxiliary materials used in steelmaking and molten metal refining. During lime production, a considerable volume of lime fines is generated. Due to their small particle size, these fines cannot be directly used in furnaces and, if not recycled, are disposed of as industrial waste.

This not only results in the loss of valuable mineral resources but also imposes disposal costs and environmental impacts on the company. In response, MSC has designed and constructed a plant dedicated to producing lime briquettes, with the aim of recycling lime fines and returning them to the production cycle.

The key achievements of the project include:

- Enhancing mineral resource efficiency and preventing the loss of raw materials
- Reducing industrial waste and associated disposal costs
- Reintroducing lime fines into the production cycle as a usable material
- Minimizing environmental impacts caused by lime dust emissions
- Achieving economic savings by replacing imported or processed coarse lime with briquettes.

From Data to action: MSC's path in carbon and GHG management

One of the most fundamental and widespread challenges facing human societies, particularly energy-intensive industries like steel, is climate change. To play an effective role in achieving the goals of the Paris Agreement and transitioning toward a low-carbon economy, accurate and reliable measurement of carbon emissions is the essential first step for any meaningful policy or action.

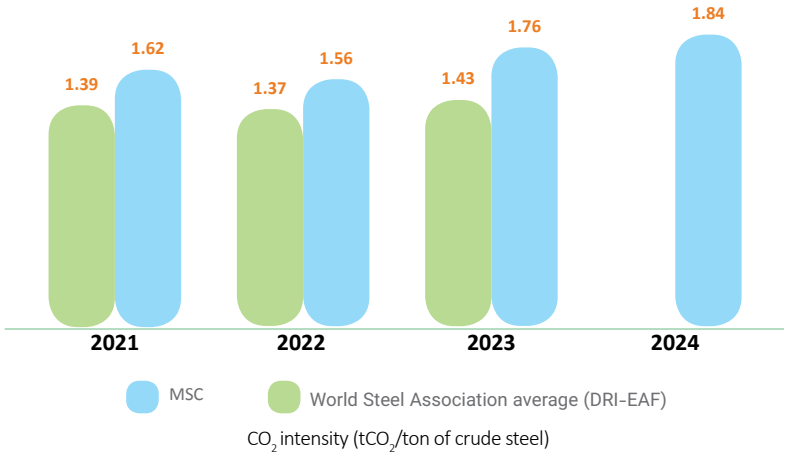
In this regard, since 2007, MSC, along with Saba Steel Complex, has been submitting and updating its greenhouse gas emissions data in the Data Collection System of the World Steel Association (www.worldsteel.org). This active participation in a reputable international platform provides a basis for data analysis and benchmarking, paving the way for carbon management across the company's operational sites.

From an operational standpoint, the following projects stand out as key initiatives to reduce greenhouse gas emissions:

- Generation of superheated steam through energy recovery from the gas power plant stack for use in the steam power plant, with the potential to reduce CO_2 emissions by at least 120,000 tons annually.
- In the hot rolling area, several measures have been taken to reduce gas consumption, including changing the type of recuperators in preheating furnaces No.3 and 4, extending the length of these furnaces, and redesigning the walking beam supports.
- Construction of a 914 MW F-class combined cycle power plant, capable of reducing water consumption by 99.7% and natural gas consumption by 40% compared to current-generation plants, ultimately contributing to a 10% reduction in the country's energy imbalance.
- Implementation of renewable energy projects, including a 600 MW solar power plant and a 200 MW wind power plant within the green steel production chain, which will play a significant role in reducing both direct and indirect greenhouse gas emissions in the future.

Certificate of participation in GHG emissions data reporting

This certificate has been awarded to MSC by the World Steel Association in recognition of its active participation in the reporting and monitoring of GHG emissions



In comparison, the global average CO_2 intensity reported by the World Steel Association over the same period has remained relatively stable at approximately 1.92 tons of CO_2 per ton of crude steel. This performance gap highlights MSC's environmental competitive advantage and underscores the key role of its employed technologies, Direct Reduced Iron (DRI) and Electric Arc Furnace (EAF), in achieving this success.

It is worth noting that some differences in the reported data compared to the 2024 report are due to updates in the calculation methodology based on the latest edition published by the World Steel Association. In this new version, the calculation of Scope 3 greenhouse gas emissions includes revisions in indirect categories (Categories 3, 4, 5, and 6). Specifically, the inclusion of certain ferroalloys in the calculations and the revision of emission factors have led to minor differences in the final results.

This downward trend not only reflects MSC's commitment to environmental regulations and sustainable development, but also lays a solid foundation for its preparedness in the face of global decarbonization policies and successful entry into future low-carbon markets.

Green thinking in a global style

Implementation of two environmental standards at MSC

In response to the escalating challenges of climate change and with a responsible approach toward sustainable development, MSC took a major step in 2024 by designing and implementing a comprehensive and integrated system for GHG management. This system, grounded in the internationally recognized standards ISO 14064 and ISO 14067, was developed through the active involvement of all key organizational units. Its purpose is to enable accurate monitoring, transparent reporting, and effective corrective actions regarding GHG emissions.

ISO 14067 enables MSC to accurately calculate and analyze the carbon footprint of its steel products based on life cycle assessment (LCA). This empowers the company to optimize energy consumption, reduce emissions, and strengthen its competitive position in international markets.

On the other hand, ISO 14064-1 provides a scientific and transparent framework for the measurement, monitoring, and reporting of greenhouse gases. In addition to contributing to air pollution reduction, it serves as a valuable foundation for smart planning toward sustainable development.

By implementing these standards, MSC now stands alongside global leaders such as ArcelorMittal, Tata Steel, and Nippon Steel, key players in the realization of the global "Green Steel" vision. This strategic move not only enhances the company's international reputation and builds greater trust among customers and stakeholders, but also paves the way for its successful entry into emerging, sustainability-driven export markets.

The implementation framework of this initiative is based on a four-phase model, encompassing the following components:

1. Accurate estimation and documentation of emissions
2. Formulation and implementation of emission reduction strategies
3. Continuous monitoring and internal audits
4. Development of effective stakeholder communications

Within this structured approach, a range of system-oriented actions have been carried out, including:

- Development of a "Greenhouse Gas Emissions Atlas", covering over 1,000 emission sources across the three main Scopes (1, 2, and 3)
- Establishment of a multi-tiered Carbon Committee structure at both the corporate and operational unit levels
- Calculation and documentation of the carbon footprint for 18 key products from MSC and Saba Steel, based on Cradle-to-Gate Life Cycle Assessment
- Compilation of more than 20 specialized guidelines and protocols to comprehensively support processes related to identification, calculation, reporting, and corrective actions

With these achievements, MSC has become the first company in Iran's steel industry to fully implement a carbon management system aligned with international standards, positioning itself for the acquisition of globally recognized certifications.

Key outcomes of the initiative include:

- Establishment of a formal carbon governance structure across the company and its operational areas
- Comprehensive coverage of emission sources through the intelligent GHG Emissions Atlas
- Accurate and auditable calculation of product-level carbon footprints for core steel products
- Mitigation of environmental risks and enhanced preparedness for low-carbon trade
- Improved transparency and accountability toward both internal and external stakeholders
- Development of sustainable infrastructure for energy management, green supply chains, and decarbonization projects

This successful experience marks a turning point in MSC's transition toward sustainable production, global competitiveness, and playing an active role in combating climate change; and at the same time, it has provided an adoptable model for other major industries in the country in moving towards a green economy.

Product life cycle management

In line with its environmental, safety, social, and regulatory responsibilities, MSC has adopted a systematic approach to managing the life cycle of its steel products. This approach begins at the product design and development stage and encompasses all subsequent phases, including production, use, recycling, and product return.

Thanks to their long service life and high recyclability, steel products present a valuable opportunity to implement the principles of the circular economy. To reduce environmental impacts and improve resource efficiency, MSC undertakes the following key actions:

- Designing products with high recyclability
- Promoting reuse and the manufacturing of products from recycled materials
- Ensuring responsible management of the return and recycling of used products

Monitoring and control based on international standards

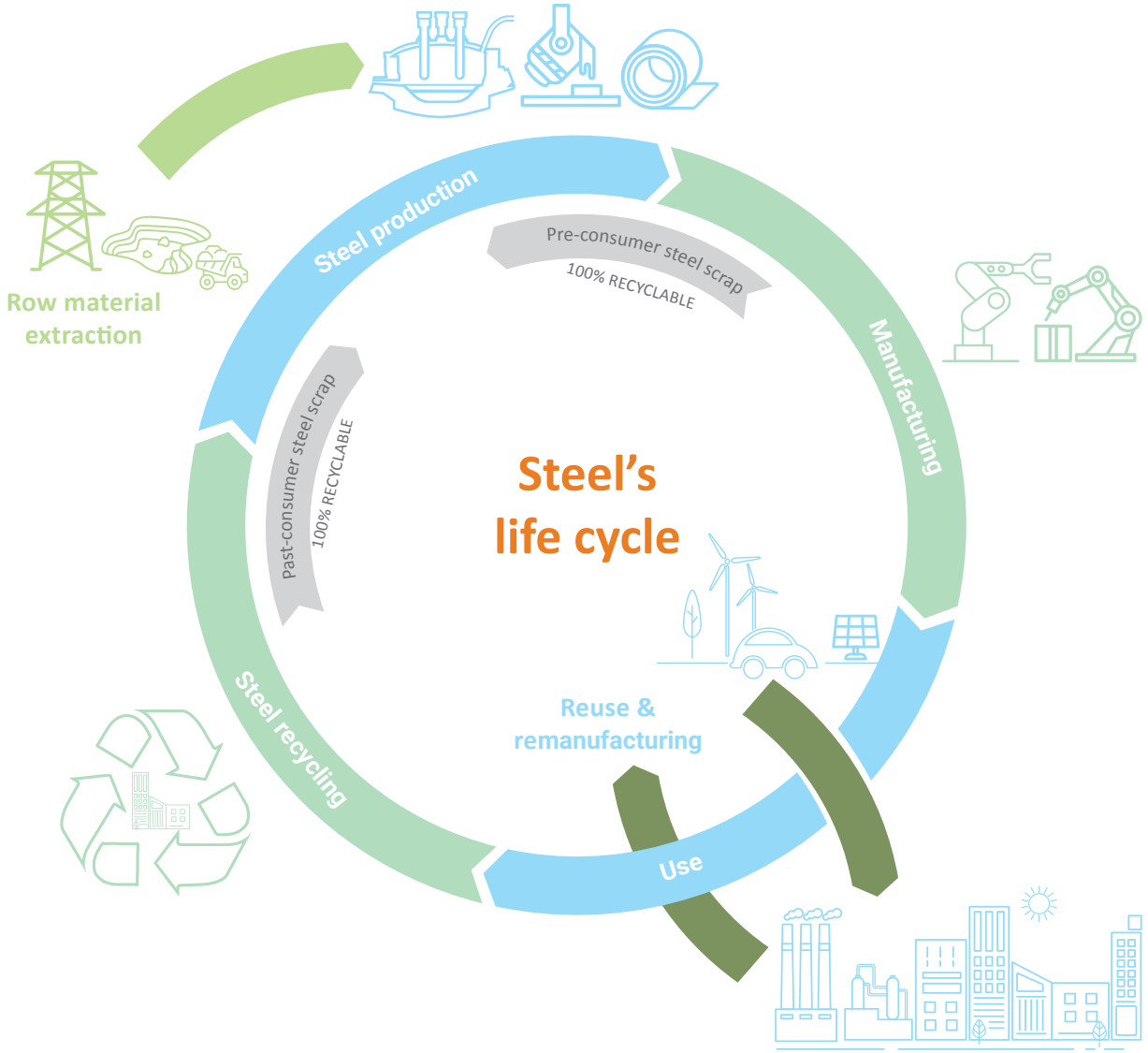
At all stages of the supply chain, delivery, and product recycling, the requirements of the ISO 14001 environmental management system are observed, and the related risks are accurately identified and managed.

Effective health, safety and environmental management approaches in the product life cycle from delivery to the customer to recycling

Life cycle stage	Environmental approaches	Health & public safety approaches
Delivery to customer	• Enhancing the organization's focus on rail transportation	• Preparation of Guidelines and Supervision of Product Transportation • Preparation of brochures on compliance with safety instructions for product transportation • Safe securing and containment of finished and coated products on trucks and rail wagons • Providing storage guidelines to customers to reduce risk
Product use by customer and end-user	• Production of corrosion-resistant coated products that extend the service life of steel goods • Collection and recycling of steel scrap generated in customers' production lines	• Preparation and distribution of safety and health guidelines for the use of coated products • Training customers on proper storage of products • Ensuring non-conforming tin-plated products are not dispatched for food-grade applications
End of product life	• Recycling of steel scrap • Requiring scrap suppliers to pre-sort and classify scrap materials • Strict control to prevent the entry of contaminated scrap (including oil- and grease-coated pieces, explosives, asbestos, silica, etc.)	• Implementation of the 5S system at the raw material handling and scrap preparation site • Monitoring harmful factors in the work environment

Product life cycle assessment (LCA)

The Product Life Cycle Assessment (LCA) project at MSC was implemented with the aim of comprehensively evaluating the environmental impacts of steel production, from raw material extraction to product dispatch from the plant (Cradle to Gate). In this project, environmental data related to energy and water consumption, raw material use, pollutant emissions, and waste generation across various stages of the steel production chain were collected and modeled using the specialized software SimaPro, in accordance with international standards ISO 14040 and ISO 14044. The results of this analysis enabled the quantification of indicators such as Carbon Footprint, Water Footprint, Global Warming Potential (GWP), and other environmental consequences. This project marks a significant step toward the development of green steel products and strengthens MSC's international position in the field of sustainability.



Carbon footprint measurement and GHG accounting

In response to growing global requirements for reducing greenhouse gas emissions and the move of large industries towards low-carbon production, with a forward-looking approach, has designed and implemented a strategic project in the field of greenhouse gas accounting (GHG Accounting) and calculating the carbon footprint of products.

The objective of this project is to accurately identify emission sources, comprehensively monitor greenhouse gases, and establish the necessary infrastructure for transparent and credible reporting at the international level.

Within the framework of this project, the calculation of greenhouse gas emissions has been carried out across the three main scopes (Scope 1, 2, and 3) and six categories (Categories 1 to 6), as follows:

- **Scope 1 – Category 1:** Direct emissions from sources owned or controlled by the company, such as furnaces, boilers, operational vehicles, and process equipment
- **Scope 2 – Category 2**: Indirect emissions from the consumption of purchased electricity and energy
- **Scope 3 – Categories 3, 4, 5, 6**: Other indirect emissions across the supply chain, including transportation, raw material procurement, product use by customers, and end-of-life phase of the product

These calculations have been carried out in accordance with internationally recognized standards, including the GHG Protocol, ISO 14064-1, ISO 14067, IPCC guidelines, and the World Steel Association (WSA) methodology. The data used were derived from real and traceable sources such as production units, energy systems, transportation, industrial accounting, supply chains, and end users, to ensure the accuracy and reliability of the results.

In another part of this project, the carbon footprint of MSC's final products, including slabs, hot-rolled and cold-rolled steel rolls, galvanized plates, and other products, was independently calculated and documented. This information serves as the foundation for developing carbon labels, compiling Environmental Product Declarations (EPDs), and enhancing environmental transparency throughout the value chain.

Key achievements of the project include:

- Comprehensive and documented calculation of greenhouse gas emissions across the organization and product portfolio through the Smart GHG Emission Atlas
- Identification of high-risk areas within the value chain to prioritize emission reduction actions
- Establishment of a transparent and reliable reporting framework for national and international institutions
- Development of the necessary infrastructure for formulating decarbonization strategies and progressing toward green steel production
- Enabling benchmarking of MSC's environmental performance against global competitors
- A significant step toward achieving net-zero carbon emission targets by the horizons of 2032 and 2050

This project not only demonstrates the effectiveness of MSC's environmental approach, but also positions the company among the leading players in carbon management and in responding to the growing global environmental requirements.

Characteristics of the MSC emissions Atlas

6 Categories
- Cat.1
- Cat.2
- Cat.3/4/5/6

3 scopes
- Scope 1
- Scope 2
- Scope 3

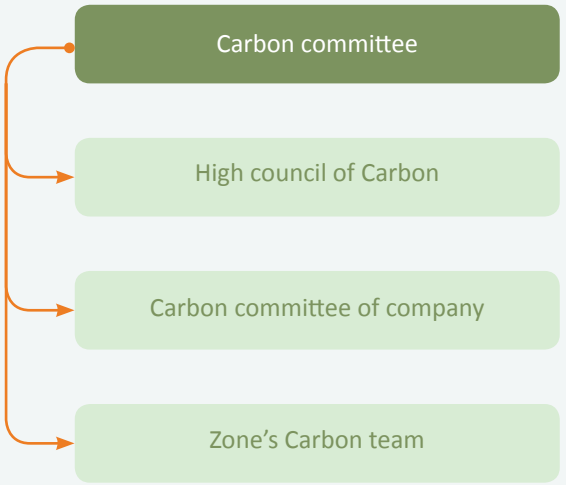
3 types of gas
- CO_2
- CH_4
- N_2O

12 types of emission
- Combustion- related
- Process- related
- Fugitive
- On site transportation
- Electricity
- Upstream transportation
- Downstream transportation
- Employee commuting
- Business travel
- raw materials
- input Energy related
- waste

9 zones
- Energy and fluids
- Iron makng
- Steel making
- Hot rolling
- Cold rolling
- Transportation
- Maintenance
- Saba
- Staff

+1000 emission sources

MSC's Carbon committee structure



Characteristics of the MSC carbon footprint

3 scopes
- Upstream
- Utility
- direct

Cradle to Gate

6 production Zones
- Energy and fluids
- Iron makng
- Steel making
- Hot rolling
- Cold rolling
- Saba

13 types of emission
- Steam
- air
- oxygen
- nitrogen
- argon
- water
- mixed electricity
- combustion
- fugitive
- discharge
- internal transportation
- upstream raw materials
- upstream energy

18 products
- Slab
- hot coil and plate
- raw coil
- black coil
- cold coil and plate
- pickled coil
- tin-plated coil and plate
- galvanized coil
- pre-painted coil and plate
- Saba products

GHG emission categories (ISO 14064-SGS)

Category 1 (direct emission)
- Fugitive
- Stationary Combustion
- Mobile combustion
- Process- related
- waste

Category 2 (indirect emission from energy consumption)
- Purchased Electricity

Category 3/4/5/6 (other indirect emission)
- Upstream transportation
- Downstream transportation
- Employee commuting
- Business travel
- raw materials
- input Energy related
- other indirect emission

Comprehensive emissions inventory study and development of air pollution forecasting system at MSC

In line with enhancing environmental transparency, addressing public and regulatory concerns, and accurately assessing the company's contribution to regional air pollution, MSC carried out a comprehensive study on emissions inventory and air pollution modeling using internationally recognized software tools. The results of this study revealed that MSC's contribution to air pollution in the metropolitan area of Isfahan is only 0.6%, underscoring the effectiveness of the company's control measures and environmental investments in recent years.

One of the key outcomes of this project was the design and implementation of a localized air pollution forecasting system, capable of providing 72-hour forecasts, which is publicly accessible at: https://ardastan.ir/airq/.

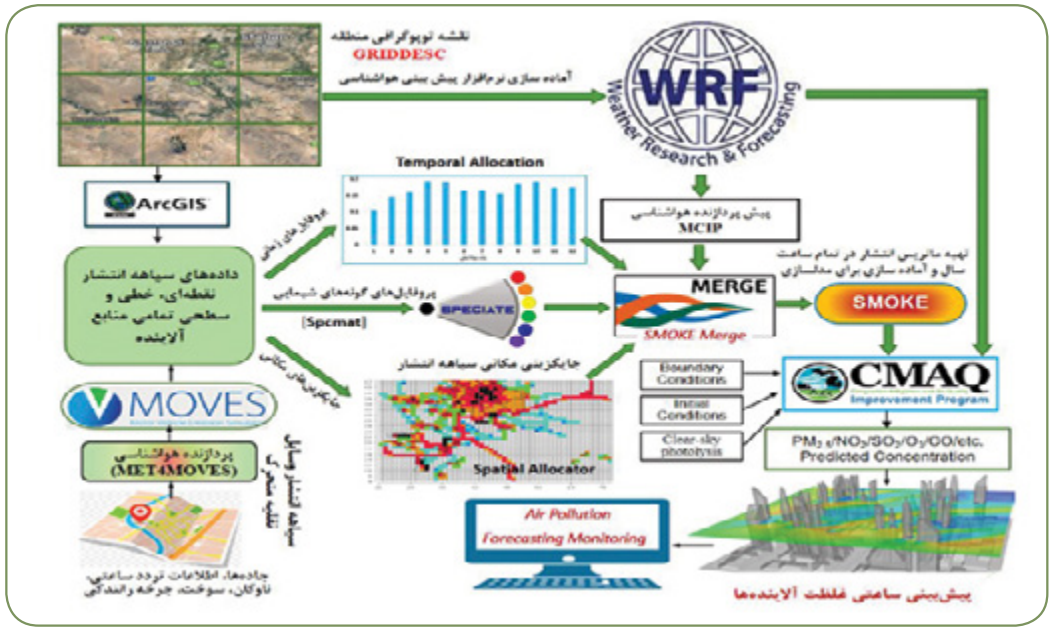
This system has been developed using the advanced WRF (Weather Research and Forecasting)-SMOKE (Sparse Matrix Operator Kernel Emissions)-CMAQ (Community Multiscale Air Quality) modeling framework and offers hourly forecasts of pollutant concentrations such as $PM_{2.5}$, NO_2, SO_2, O_3, and CO at both regional and urban scales. The integrated modeling process is based on three main components:

- WRF for generating regional-scale meteorological data
- SMOKE for processing and integrating emissions inventory data from pollutant sources
- CMAQ for simulating and predicting pollutant concentrations across various atmospheric layers

The modeling process involves collecting spatial and temporal data from various pollution sources, including point, line, and area sources, alongside the analysis of vehicle traffic data, fuel types, energy consumption patterns, and regional meteorological conditions. These datasets are processed using specialized software and integrated into the combined model.

The system outputs are presented as forecast maps and hourly charts, enabling timely decision-making and early warnings for managers, regulatory bodies, and the general public.

The implementation of this project has positioned MSC as one of the pioneers in intelligent and scientific air pollution monitoring among Iranian industries, a significant step toward strengthening environmental governance and achieving sustainable development.



Pollutant concentration forecasting schema

The story of Mehr-e Jey Mobarakeh Steel Engineering Co.

Optimization of ventilation system and reduction of toxic paint solvents vapor emissions in furnace no. 2 of the color-coated sheet line at MSC cold rolling unit

In line with Mobarakeh Steel Group's commitment to creating a safe, clean, and sustainable environment, Mehr-e Jey Mobarakeh Steel Engineering Co. undertook the redesign and optimization of the ventilation system in the exhaust section of furnace No. 2 in the color-coated sheet line of the cold rolling unit in 2017.

This project aimed to reduce emissions of volatile organic compounds (VOCs) resulting from the evaporation of paint solvents, improve indoor air quality in the workplace, and enhance operator health. Its implementation marked a significant step toward green production and minimizing the adverse impacts of industrial processes on human health and the environment.

Investigations revealed that the existing ventilation system, due to substandard duct design, pressure imbalance, and insufficient fan capacity, was incapable of effectively extracting evaporated vapors. As a result, chemical pollutants were being released into the production hall atmosphere, particularly in the crane operator zones. To address this issue, the following actions were implemented as effective engineering solutions:

- Design and installation of a new intermediate hood at the furnace outlet to directly capture solvent vapors;
- Complete redesign and optimization of the ductwork system with air pressure balancing and precise layout;
- Installation of a new centrifugal fan with a capacity of 46,000 CFM to enhance the system's overall suction power;
- Modification of existing hoods and installation of manual control dampers to precisely regulate airflow volume;
- Optimization of airflow in the critical zone between the furnace equipment and the embosser laminator to prevent vapor accumulation.

This set of measures was designed and executed with an integrated approach that combined human health protection, workplace pollution control, and process efficiency improvement. The project stands as a successful example of operational sustainability management and can be adapted and replicated across other companies in the group.

Key objectives of theproject

Control and reduction of toxic solvent vapor emissions in the production hall

- Improvement of the ventilation system performance and enhancement of workplace safety
- Increase in efficiency and optimization of the color-coated sheet baking process
- Elimination of critical pollution concentration points along the path from furnace exit to cooling stage
- Design and implementation of engineering solutions in compliance with industrial ventilation standards (ACGIH).

Key project features

- Installed Fan Capacity: 46,000 CFM
- Total Project Cost: 997 million IRR
- Reduction of Previous Substandard Suction: In the existing hoods, suction velocity was reported below the permissible standard (less than 1 m/s). After modification, it approached the recommended values set by ACGIH.
- Reduced Pollution Concentration in the area between the furnace and the EMBOSSER LAMINATOR unit through installation of a new intermediate hood.

Environmental benefits

- Reduction of Volatile Organic Compound (VOC) Emissions: Through hood modifications, installation of a new fan with a capacity of 46,000 CFM, and redesign of air ducts with pressure balancing, toxic solvent vapors are effectively captured and removed from the hall.
- Prevention of Indoor Air Pollution: The design and implementation of the new ventilation system prevents pollutants from dispersing into the production hall, significantly improving indoor air quality.
- Enhancement of Environmental Efficiency of the Production Line: By reducing energy losses and establishing more stable operating conditions for the furnace, unnecessary energy consumption is minimized and the baking process is optimized

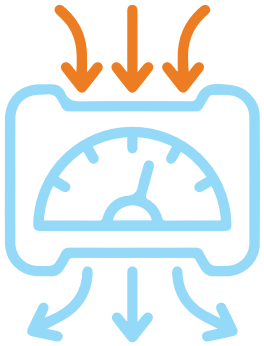
Social and safety benefits

- Improved Occupational Health and Safety: By eliminating harmful vapors in the critical area (between the furnace and the EMBOSSER LAMINATOR unit), employee exposure to hazardous substances has been significantly reduced—particularly for crane operators who were directly exposed.
- Enhanced Working Conditions and Reduced Job-Related Stress: A healthier work environment has led to increased employee satisfaction and reduced respiratory and psychological strain caused by chemical pollutants.
- Benchmarking for Other Companies: This project serves as an effective model for other units within the Mobarakeh Steel Group to assess and improve similar ventilation systems.

In order to institutionalize the ESG framework and strengthen the sustainability pathway within the Mobarakeh Steel Group, steps have been taken toward preparing the Group's sustainability report in the coming years. In this regard, real narratives of environmental, social, and governance initiatives from the Group's subsidiaries will form part of the report's content. These stories reflect the Group's commitment to sustainable development and broad-based responsibility.

Social responsibility in enhancing environmental performance

MSC has not limited itself to reducing pollutants within its production site. In line with its social responsibility, the company has contributed to the installation of two air quality monitoring stations across Isfahan Province, with an investment exceeding €250,000. This initiative, aimed at improving public health and enhancing environmental transparency, serves as a clear example of the company's active participation in extra-organizational sustainable development



250,000 Euros
Investment

The growth of trees in the land of steel

In the heart of the land of iron and fire, where steel takes form, a green story has unfolded. A story of harmony between industry and nature; where trees do more than cast shade, they stand as shields against pollution, dust, and the loss of biodiversity.

From the very first days of MSC's establishment, tree planting was never merely about beautification; it was a strategic and responsible decision. Today, 43% of the company's total area is dedicated to green space and artificial forests, well above the 25% required by law. The outcome of this commitment reaches far beyond a verdant landscape; it is a contribution to the very protection of our planet. Across this green expanse, now stretching over 1,500 hectares, more than 21,000 tons of carbon are stored in the trees—equivalent to absorbing 77,000 tons of CO_2. Achieving the same impact through industrial means would cost nearly €24 million. And the story doesn't end there. In their quiet labor, these trees return over 56,000 tons of oxygen to the atmosphere, equal to about 13 million ten-liter cylinders of oxygen, valued at nearly €4 million. Yet, the story of these trees goes beyond planting, it extends to how they are sustained. At MSC, over 99% of green areas are irrigated using a drip irrigation system, a highly efficient method that minimizes resource waste. Thanks to this system, water consumption has been reduced to 3.5 million cubic meters per year, half of what traditional methods would require. This means an annual saving of 3.5 million cubic meters of water in a land where every drop counts. The intelligence of this system is not only in its method but also in its source: most of the water used comes from treated wastewater, both from the plant and nearby towns, an inspiring example of the circular economy and resource efficiency in action. This is not merely a tale of trees and water, it is the manifestation of a profound understanding of environmental responsibility. At the heart of industry, MSC envisions a forest, one that breathes life into the world around it.

1,500 hectares
43% of the company's entire site
Artificial forest

21,000 tons
Carbon storage in tree limbs

56,000 tons
Return of oxygen to the atmosphere
(Equal to 13 million 10-liter oxygen cylinders)

99%
Of green spaces are irrigated through drip irrigation systems

MSC's artificial forests

The trees we planted together

In an era where restoring balance to the Earth has become an unavoidable necessity, MSC guided by green wisdom, a forward-looking vision, and a deep commitment to social responsibility, has taken a meaningful step toward revitalizing the country's natural landscape. The company's active participation in the national public initiative to plant one billion trees, particularly in the Talakhoncheh region of Mobarakeh, stands as a powerful example of the synergy between industry and nature in building a greener tomorrow.

This broad and people-driven movement, supported by MSC, has breathed new life into arid plains and parched foothills. As part of the national "Jangalaneh" initiative to plant one billion trees across the country, this green campaign sowed wild almond seeds across 2,000 hectares of land.

The story of this initiative is one of persistence and commitment. In 2022, the first step began with seeding across 1,000 hectares, which expanded to 2,000 hectares by 2023. Today, with the planting of over 2.7 million wild almond saplings, the promise of renewed life has been delivered to this land

MSC's role in this endeavor went far beyond financial support. With a deep understanding of its social responsibility, the company has integrated tree planting into its broader mission alongside steel production. From the annual distribution of saplings among employees to participation in large-scale national projects, MSC has demonstrated that industry can indeed stand in harmony with nature.

The inaugural ceremony of this campaign was held on Mount Kollak, attended by local officials, community representatives, MSC executives, and environmental enthusiasts, where seeds were sown into the earth with hopes for a greener tomorrow

The trees that have sprouted today are clear signs of a future where humanity, industry, and nature build a life together in harmony.

Wild almond tree planted

Each sapling, a hope

On the National Day of Tree Planting and during Natural Resources Week, MSC took a green and hopeful step as part of its social responsibility efforts. A total of 26,000 fruit and ornamental saplings were distributed among the company's employees, contributing to the expansion of green spaces and the promotion of a tree-planting culture in both living and working environments.

This green initiative, which has now become a meaningful tradition within MSC, was held for the third consecutive year, based on the results of an internal employee survey. Once again this year, the company's staff reaffirmed their commitment to this environmental campaign.

With a strong emphasis on the role of tree planting in preserving ecosystems, improving air quality, and promoting public health, MSC has consistently upheld environmental stewardship as an inseparable part of its industrial mission.

By planting these saplings, employees not only enhance the beauty of their surroundings but also become messengers of a greener future for the next generations, because every tree represents a symbol of hope and commitment to the Earth.

MSC has called on all its staff to plant their saplings in suitable spaces, reinforcing its commitment to a path that leads toward a more sustainable, greener, and responsible future.

26,000 saplings
Distributed among employees

Supporting Biodiversity

In the vision of green wisdom, every act of development must be guided by a deep understanding of life's interconnectedness and a strong sense of responsibility toward nature. MSC, embracing this perspective, has gone beyond legal requirements and formal obligations to establish itself as a "Green Wise".

This is an industry that, fully aware of the environmental impacts of its operations, is actively taking steps toward coexistence with nature.

In this regard, MSC, through the creation of man-made forests across the factory site, has not only contributed to pollution reduction but also created favorable conditions for increasing plant and animal biodiversity. This approach is an example of ecological insight and foresight in land management.

However, this green wisdom is not limited to the boundaries of the factory; it has also led MSC to participate in protecting the region's natural ecosystems. The company's actions in this field include:

- Constructing a forage shelter for the gazelles in the Mooteh protected region
- Procuring and installing 360 solar panels for environmental ranger stations
- Contributing to the equipment of rangers and the renovation of wildlife outposts
- Identifying and compiling an atlas of animal species and reviewing the flora and vegetation cover within MSC

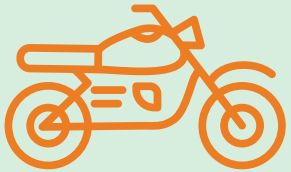
All these actions demonstrate MSC's deep understanding of its role as a responsible and intelligent industrial actor within the regional ecosystem, an organization that, with green wisdom, aims to build a balanced, sustainable, and nature-aligned future.

700 m^3

Construction of a forage shed for gazelles in the Mooteh protected region

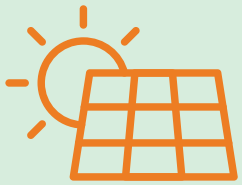
Motorcycles

Supplying motorcycle for environmental rangers



360 solar panels

Procurement and installation of solar panels for environmental ranger stations



Atlas of Life: MSC's step toward intelligent biodiversity monitoring

In line with its environmental responsibilities and a deeper understanding of its surrounding ecosystem, MSC has launched and implemented a research project titled "Identification and Compilation of an Atlas of Animal Species and Review of Regional Flora." This project was designed not only for the precise monitoring of the fauna (animal species) and flora (vegetation cover) around the complex but also as a foundational step for future initiatives in bioremediation, improvement of natural environmental quality, and long-term ecological sustainability in the region.

This study was conducted within MSC's 16,000-hectare site to determine the actual status of local fauna and flora, and to assess the effects of industrial pollutant bioremediation on biodiversity.

By developing a species atlas and establishing an up-to-date database of fauna and flora, effective actions can be taken in future environmental protection efforts and in improving the quality of life for employees and local communities.

As part of this initiative, a comprehensive and up-to-date database of regional plant and animal species is being developed. This database will serve as a scientific foundation for evaluating both the direct and indirect impacts of the company's industrial activities on biodiversity, and for implementing ecological restoration projects and enhancing ecosystem resilience.

Moreover, this project plays a dual role: on the one hand, it contributes to improving the region's environmental quality and raising ecological awareness and health among employees and local communities; on the other hand, it provides a platform for advancing future environmental research and designing intervention measures aligned with sustainable development.

Study phases

The study was implemented in three phases:

Phase 1 – Preliminary research and preparations

Review of existing literature on the fauna of the province, compilation of identification keys, fieldwork planning, and procurement of equipment (motion-activated cameras, telephoto lenses, animal and plant traps).

Phase 2 – Field Sampling

- Vertebrates: Deployment of 32 rodent traps and 25 camera traps across various habitats including artificial forests, plains, Choghajoush Mount, wastewater treatment ponds, and industrial zones.
- Invertebrates: Use of various trap types (9 pitfall traps, 3 Malaise traps), along with active collection by researchers.
- Plants: Sampling from 17 geographic points, followed by pressing, drying, and transfer to a herbarium for taxonomic and molecular identification.

Phase 3 – Analysis and Atlas Making

Molecular barcoding using both standard and meta-barcoding methods to identify even non-visible specimens; analysis of biodiversity indices (Shannon–Wiener and Simpson); compilation of a species atlas and comparison with historical data.

Vertebrates

Installation of:

32 rodent traps

25 camera traps

Invertebrates

Installation of:

9 pitfall traps

3 malaise traps

Plants

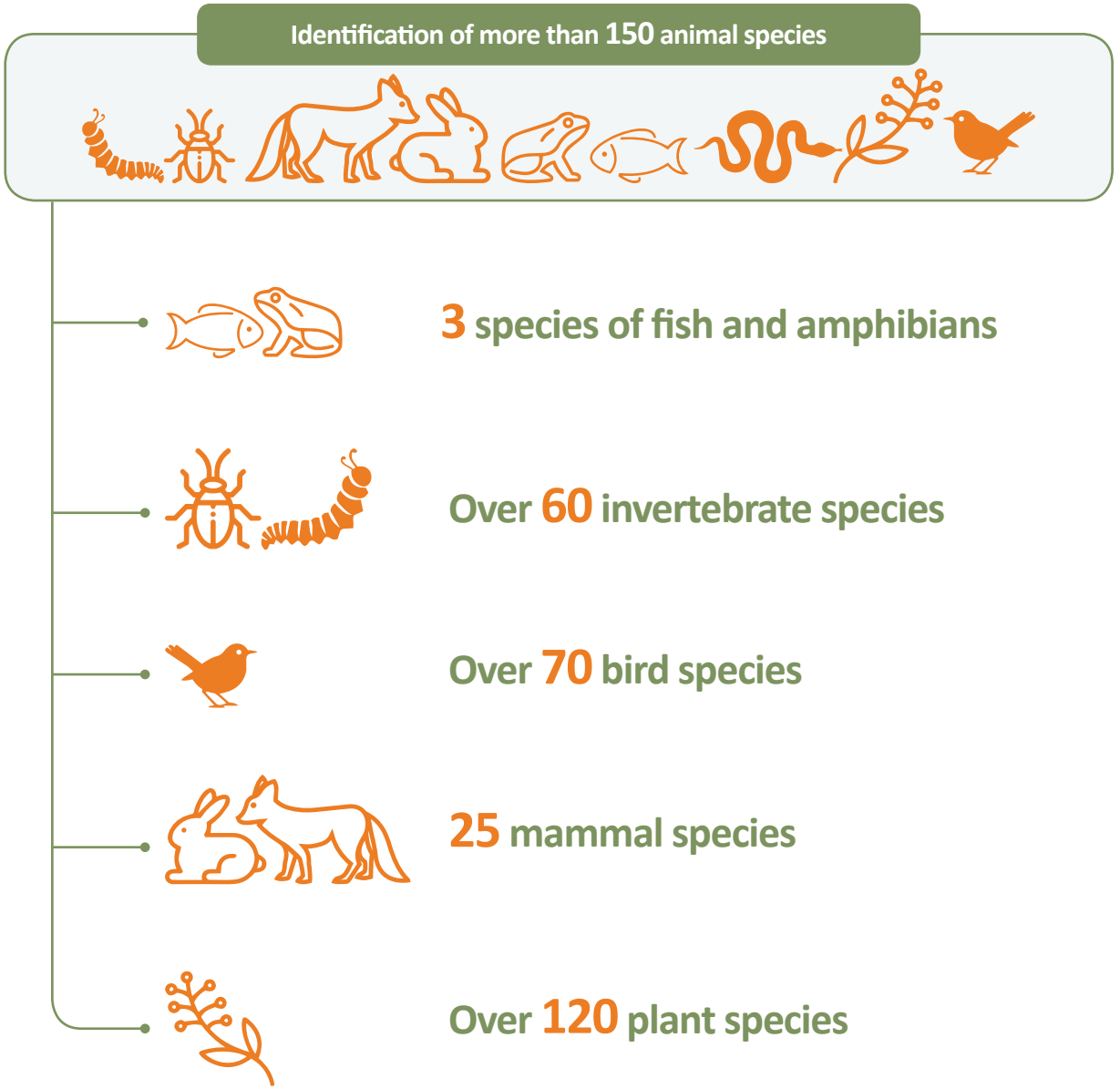
Sampling from 17 geographical location

How many plant and animal species were identified?

In total, over 150 animal species were identified and recorded, including 3 species of fish and amphibians, more than 60 invertebrate species, 15 species of reptiles, over 70 bird species, and 25 species of mammals. Additionally, more than 120 plant species were documented. Molecular identification using barcoding and meta-barcoding techniques increased the accuracy of identification to over 95%.

Notable findings include:

- Rare discovery: Cordylanthus parviflorus (Ferris) Wiggins, from the Orobanchaceae family, was identified. This species is native to southeastern California, USA and had never been reported in Iran before. It was collected near the main administrative building of the MSC.
- Recording new bird species: Such as the Lanner falcon, Greater Sand Plover, Ferruginous Duck, Common Pochard, Great and Little Grebes, Black-necked Grebe, and White-winged Tern.
- Protected ecosystem: Safe presence of migratory birds and intact native vegetation in protected areas, where overgrazing by livestock had been prevented.



When nature smiles: A wolf family amidst industry

In the heart of a bustling industrial zone, where the wheels of development never cease turning, an extraordinary moment of life was captured. A camera installed for environmental monitoring on the outskirts of MSC recorded a rare sight: a wolf family, including an adult male and female along with four pups, near the factory perimeter. This is more than just an image of wildlife, it is living proof of the region's ecological health and a sign of life thriving within a responsible industrial setting.

Wolves, symbols of biological intelligence and ecological balance, can only inhabit environments that are stable, safe, and rich in biodiversity.

In a world where the boundary between industry and nature often leads to conflict, MSC tells a different story. This image reflects the "green wisdom" embedded in the company's management philosophy, a mindset that does not view development as opposed to nature, but rather as something deeply intertwined with the ecosystem.

Continuous monitoring of plant and animal species, investment in environmental projects, restoration of native vegetation, and protection of local habitats all demonstrate that MSC is committed not only to its own sustainability, but also to the survival of the nature that surrounds it.

The wolves have returned, and that means nature trusts MSC.

Two adult wolves (male and female) along with four pups

Documented via camera trap sampling by the research team from the University of Isfahan

Part of the Fauna and Flora Atlas Project of MSC

June 2024 | Between the slopes of Choghajoush Mount and the pine forest

Scan this code to see this event.

Two fox pups near their den

Documented via camera trap sampling by the research team from the University of Isfahan
Fauna and Flora Atlas Project of MSC
June 2024, Service road near the fence, between the exit gate and the wastewater treatment ponds

Scan this code to see this event

Great white pelican

The pelican, one of the largest bird species with a wingspan reaching 3.5 meters, was documented through manual photography by the research team from the University of Isfahan.
This observation was part of the Fauna and Flora Atlas project of MSC, winter 2025

Scan this code to see this event

The little guardian of Zayandeh-Roud: The story of saving Aphanius

In the heart of the Gavkhooni Wetland and the Zayandeh-Roud River lives a small fish with a big role. Aphanius isfahanensis,scientifically known as Esmaeilius Isfahanesis, is not only a beautiful native species but has also been recognized for thousands of years as a sentinel of public health in Isfahan. Locally referred to as the "Mahī-ye Jūbī Rāhdār" (stream guard fish), this species feeds on mosquito larvae and has played an effective role in controlling diseases such as malaria and dengue fever.

Today, however, this little guardian is itself in danger. Drought, invasive species, and habitat destruction have placed Aphanius on the list of critically endangered species. A loss of this kind would be irreplaceable.

In line with its social and environmental responsibilities, MSC signed a memorandum of understanding in January 2025 with the Royesh Sarzamin Omid Institute to protect this valuable species. Supervised by the company's HSE management and in accordance with the CEO's directive, MSC has allocated 5 billion Rials in financial support for establishing secure biological infrastructure for the conservation of this fish.

The project encompasses the following key actions:

- Design and construction of a secure habitat, utilizing natural filtration methods and a continuous water circulation system;
- Deployment of solar panels to provide sustainable thermal regulation;
- Cultivation of native plant species to replicate the fish's natural ecosystem;
- Landscaping and foundational work on a parcel of land donated by the Hasanabad–Jarghouyeh Municipality.

The ultimate objective of this initiative is the conservation and rehabilitation of the Aphanius isfahanensis population, while establishing a scalable national model for the protection of endangered species. Through this endeavor, MSC once again affirms that its commitment extends far beyond industrial advancement, encompassing the stewardship of Isfahan's ecological and biological heritage as an integral part of its long-term, forward-looking vision.

A Story of sustainability from the heart of industry: Documenting wildlife at MSC

At MSC, we believe that industrial development, without understanding and respect for the ecosystem, cannot be sustainable. That's why, alongside expanding the boundaries of production, we have always maintained a deep perspective on the surrounding environment. The Wildlife Photography Book of MSC is one manifestation of this responsible outlook, an effort to capture and showcase rare moments of wildlife coexisting beside one of the country's largest industrial complexes. This book is not just a collection of photographs, it is a cultural and environmental record that demonstrates how bridges of understanding can be built between industry and nature; bridges made of respect, coexistence, and awareness. Documenting glimpses of animal species and natural habitats around the company reminds us that even within industrial spaces, one can witness, cherish, and protect the beauty, biodiversity, and serenity of nature.

This cultural initiative is embedded within MSC's broader sustainability strategy, where industrial advancement is interwoven with the conservation of natural resources, environmental education, and the promotion of eco-centric values. In its essence, this photobook mirrors our enduring belief: that steel is not only forged in furnaces, but also within the fabric of society, among the living ecosystems, and through our social and environmental responsibilities.

Red Fox, observed in the premises of MSC

Cattle Egret, observed within the premises of MSC

Water stewardship

Today, as climate change reshapes the face of lands and freshwater resources — especially groundwater, now under greater threat than ever — Iran is grappling with recurring droughts and erratic rainfall patterns. In this context, water is no longer merely a natural resource; it is the very breath of life and the lifeline of production in a drought-stricken nation.

MSC does not consider itself separate from this pressing reality. We are faced with two intertwined concerns: the production of steel, which inherently demands water, and the lives of the communities around us, which rely on the same vital resource. This intersection deepens our responsibility, compelling us to weave industrial development with environmental sustainability

Therefore, MSC has, for years, chosen a distinct path, one of water stewardship rather than mere consumption. We believe that true water stewardship goes beyond efficiency; it is a conscious and accountable commitment to preserving this vital resource for generations to come. In the face of declining precipitation, population growth, and mounting environmental pressures, a paradigm shift is imperative, one that redefines decision-making from extraction to regeneration, from consumption to conservation, and from competition to coexistence.

MSC's key initiatives for sustainable water management include:

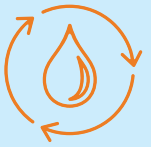
- Extensive reuse and internal recycling of treated industrial effluent within the production cycle
- Collection and treatment of municipal wastewater from neighboring cities for industrial use, replacing reliance on freshwater sources
- Significant reduction in dependency on the Zayandeh-Roud River, currently, less than 1% of the river's total flow is allocated to MSC (whereas the original design anticipated more than 40 million m^3 annually, the current drawdown has been reduced to approximately 18.5 million m^3)

These efforts have led to a remarkable achievement: the water consumption per ton of crude steel production has been reduced from 16.6 m^3 in 1992 to just 2.5 m^3 in 2024, a reduction of over 85% within three decades. This is an unprecedented milestone in Iran's steel industry and aligns with global benchmarks for responsible water use. The magnitude of this reduction is equivalent to an annual water saving capable of meeting the needs of approximately 400,000 households in Isfahan, based on an average domestic consumption of 150 m^3 per year per household. Moreover, recognizing the critical role of water quality in equipment maintenance and the minimization of repair costs, we have committed to ensuring that annual withdrawal from the Zayandeh-Roud River does not exceed 20 million m^3, even under crisis conditions. Looking ahead, with the implementation of the water transfer project from the Sea of Oman, it is anticipated that any future use of Zayandeh-Roud's water will be restricted to drinking purposes only.

At MSC, we view water not merely as an input to production, but as a trust bestowed by nature, a trust to be consumed judiciously, monitored meticulously, and passed on responsibly to future generations.

Less than 1%
Share of water withdrawal from the Zayandeh-Roud River

2.5 m^3/ton of crude steel
Specific water consumption

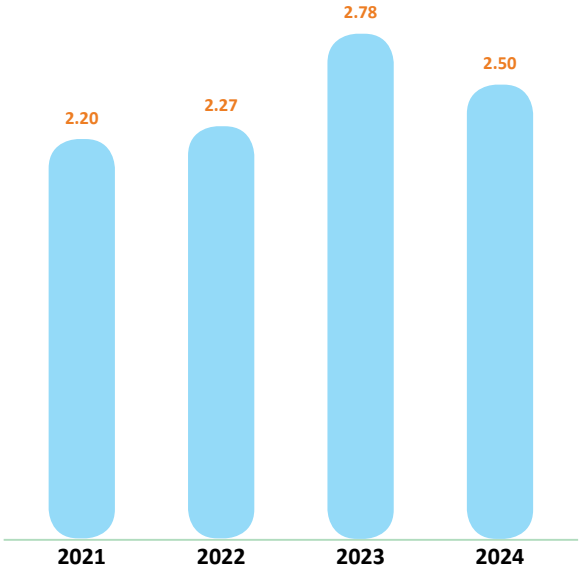


0.95 million m^3
Sanitary water consumption

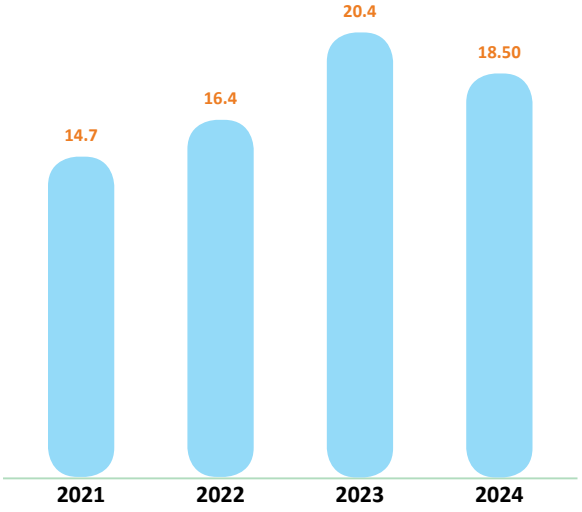
4.5 million m^3
Water consumption for green spaces

Currently, the water required for the factory is supplied through a combination of river withdrawal and treated urban wastewater. In parallel, water recirculation within production processes has played a significant role in reducing overall consumption. As a result, MSC's specific water consumption now stands at 2.5 m^3 per ton of crude steel. A comparison between MSC's specific water consumption and that of leading global steel producers reveals that the company's performance falls within the typical international range.

Industrial water treatment plant



Water intensity (m^3/ton of crude steel)



Water withdrawal (million m^3)

Wise water governance: Establishment of a water efficiency system at MSC

This decision is not only a sign of environmental responsibility, but also a manifestation of the wise approach MSC has adopted in response to the critical water challenge. To realize this approach, a series of targeted and structured actions have been implemented, including:

- Training 900 employees on the concepts of ISO 46001 to institutionalize a culture of responsible water consumption
- Establishing a "Water Committee" to enable collective decision-making based on interdisciplinary expertise
- Identifying, calibrating, and monitoring 50 key water-consuming devices
- Reviewing organizational competencies related to water management and updating job profiles accordingly
- Localizing and supplying technologies that improve water efficiency to enhance industrial self-sufficiency and resilience
- Revising strategic water consumption goals with a forward-looking perspective
- Upgrading the performance of the hot rolling wastewater treatment plant, as one of the focal points for water efficiency
- Conducting internal audits and improving processes based on findings
- Passing the final audit and obtaining ISO 46001 international certification

This set of actions reflects MSC's view of water not merely as an industrial input, but as a life-giving element that must be preserved, wisely and with foresight, for future generations. At MSC, wisdom in water management means combining knowledge, foresight, responsibility, and the application of international standards to address one of the country's most pressing environmental challenges.

900 people
Training on standard principles (ISO 46001)

ISO 46001

Value creation in every drop

In a world where limited water resources have become a critical challenge, MSC, with a strategic outlook grounded in environmental wisdom and a creating shared value (CSV) approach, has implemented a pioneering project to recycle urban water and reduce reliance on surface water sources. Given the essential role of water in steel production processes and the simultaneous lack of adequate wastewater infrastructure in cities neighboring the factory, MSC invested in the construction of urban wastewater collection and treatment networks with the aim of developing public infrastructure, improving the region's environmental health, and ensuring a sustainable supply of industrial water resources.

This wise solution has two complementary aspects:

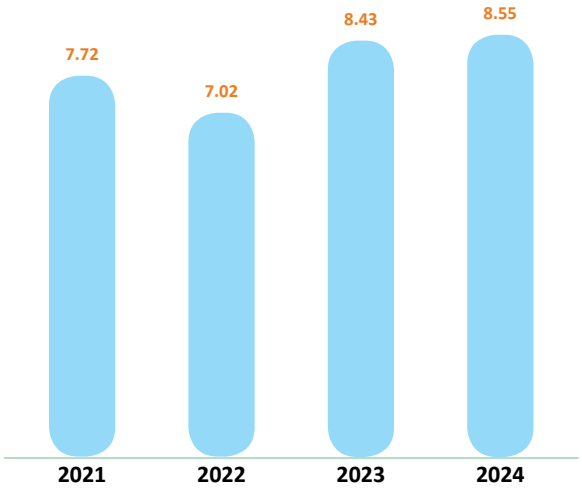
- Addressing one of the key infrastructural bottlenecks in surrounding cities by establishing efficient wastewater systems
- Providing a sustainable industrial water supply for the company through the reuse of treated wastewater

The features and achievements of this project to date include:

- Direct investment by MSC in developing wastewater systems in the cities of Mobarakeh (Mobarakeh and Safaiyeh) and Lenjan (Zarrinshahr and Vernamkhast)
- Gradual increase in the volume of received wastewater, reaching over 8.5 million m3 in 2024
- Plans to implement the project in the cities of Majlesi, Talkhooncheh, Hasanabad, Falavarjan, Sooderjan, Kelishad, Abrisham, Baharan, Pirbakran, Baghbahadoran, and Baghshad
- Forecast to supply 60% of the company's industrial water needs by 2031 through pre-purchased municipal wastewater
- In addition to easing pressure on vital resources like the Zayandeh-Roud River, this project has improved public health, enhanced the quality of life for local residents, and increased environmental resilience.

International achievement of the project

This innovative initiative was recognized as one of the top five projects in the "Excellence in Sustainability" category of the 2023 Steelie Awards by the World Steel Association, an honor that placed MSC among the global leaders in industrial sustainability.



Urban wastewater transferred to MSC (million m^3)

5.5 million m^3
Generated wastewater

1.1 million m^3
Discharged water

7.5 m^3
Treated wastewater utilized in the company's processes

30%
Ratio of treated and utilized wastewater to total water consumption of the company

MSC's measures to optimize water consumption

Utilization of non-treatable effluents (RO reject) for slag cooling

Through this initiative, non-treatable effluents (RO reject) are used for slag cooling at a rate of 105 m^3 per hour. As a result, there is no need to use industrial water for slag cooling.

Quantitative and qualitative enhancement of the industrial wastewater treatment plant

In order to produce part of the required industrial water from industrial wastewater, the industrial wastewater treatment plant was upgraded to a level where approximately 50% of MSC's industrial water needs can be supplied through advanced treatment of industrial wastewater. The repeated water recirculation within MSC's networks has played a significant role in reducing water consumption. This has been made possible through significant investment in the quantitative and qualitative development of the company's treatment facilities.

Conversion of wet cooling towers to hybrid systems in the direct reduction unit and related pumping stations

This project was implemented with the goal of reducing water consumption in the Direct Reduction Unit, which is the highest water-consuming unit within the company. Based on conducted calculations, it is expected that water usage in the existing cooling towers will be reduced by up to 70% upon implementation of this project.

With the commissioning of this system, an annual saving of approximately 2 million m^3 of industrial water is anticipated. This amount is equivalent to the annual water consumption of over 13,000 households in the city of Isfahan (assuming an average of 150 m^3 per household per year).

The story of MSTID

Supporting the development of innovative water management technologies

In line with improving efficiency in the management of industrial and municipal wastewater, MSTID (Mobarakeh Steel Technology and Innovation Development Fund), a corporate venture capital fund affiliated with MSC, has supported the development and localization of Membrane Bioreactor (MBR) technology.

This advanced treatment process, which combines biological processes with membrane filtration, has been recognized as an effective solution for wastewater treatment and can be tailored to the diverse requirements of various users.

The membrane modules developed within this project are based on hollow fiber polymer membranes capable of performing microfiltration and ultrafiltration. These modules replace the sedimentation stage in conventional systems and significantly enhance the quality of the treated effluent. The membrane design, filtration surface area, and configuration can be adjusted according to end-user needs. The polymers used are of the same type utilized by leading global companies in the membrane industry.

This advanced technology is offered in two main areas:

a) Design, fabrication, and operation of polymeric membrane modules for use in MBR systems

b) Engineering services for designing, implementing, and upgrading existing systems to Membrane Bioreactor (MBR) technology

Environmental achievements:

- Reduced footprint and construction costs due to the elimination of sedimentation tanks and downsizing of treatment facilities
- Increased concentration of mixed liquor suspended solids (MLSS), leading to lower excess sludge generation and reduced disposal costs
- Significant improvement in wastewater quality, with the effective removal of suspended solids, microorganisms, and organic pollutants, up to 99%
- Potential for reuse of treated water in industrial processes, landscape irrigation, or even aquifer recharge
- Reduction of odors and secondary pollution thanks to the closed and controlled system configuration
- Compliance with international environmental standards, such as WHO and EPA

Social and Economic Impacts

- If the full capacity of the production line is utilized, it will be possible to produce about 15,000 m^2 of membrane per year, which corresponds to the filtration needs for treating 4,500 m^3 of wastewater per day. This capacity covers approximately 3% of the domestic market.
- In addition to meeting domestic demand, the technology developed in this project includes all stages from production line design and material formulation to the construction and operation of MBR systems. The potential to upgrade this technology through research and development activities opens up new horizons for improving performance and enhancing the country's competitiveness.

Water stewardship

In a land whose lifeblood pulses with the Zayandeh-Roud River, water scarcity is more than a crisis, it is a question of existence or extinction. Drought, overexploitation of surface and groundwater resources, and inefficient consumption, especially in the agricultural and domestic sectors, have drained the land and put ecosystems under threat. Amid this, major industries such as steel, which are heavily dependent on water, stand at the forefront of this challenge. But hope has risen from the heart of the sea.

In the first phase, between 70 to 200 million m^3 of fresh water will be delivered from west of Bandar Abbas along a 1,080-kilometer route to Isfahan. In the second phase, another 400 million cubic meters will be conveyed from desalination facilities in Sirik via a 920-kilometer pipeline to the same destination. In this national synergy, companies such as MSC, Esfahan Steel Company, and the Oil Refinery, along with urban and provincial institutions like the Isfahan Chamber of Commerce and Isfahan Municipality, have joined hands so this arid land may breathe life once more.

The Result?

A complete halt in MSC's water withdrawal from the Zayandeh-Roud River, and sustainable water supply for industry, drinking purposes, and greenhouse agriculture. This means water security for society, environmental responsibility for industry, and sustainability for the future.

Construction of the water transmission pipeline from the Sea of Oman

Controlling water pollutants and wastewater management

At MSC, water is not just a resource, it is the source of life. We are committed to not forgetting nature on the path to development, and at the heart of this commitment lies the control of water pollutants and precise wastewater management. Large industries can impact water resources and ecosystems, but at MSC, we have chosen to be part of the solution, not part of the problem. That is why, for many years, we have made the precise and engineered management of industrial wastewater a top priority

Monitoring 52 environmental parameters: transparent, continuous, and online

At every stage of production, discharged water is sampled and analyzed with high precision and in accordance with environmental standards. Among these, 20 key industrial wastewater parameters are monitored online, ensuring not a single moment goes unnoticed.

From idea to execution: a wastewater treatment plant for the future

In 2017, we took the first step by launching the first phase of the advanced industrial wastewater treatment plant. The following year, construction of the second phase began, along with the reception and treatment of municipal wastewater. Today, this massive project has come to fruition, leading to a significant reduction in water consumption and sustainable recycling at MSC.

Smart analytics, continuous monitoring

Beyond technical infrastructure, we rely on continuous analytics, precise testing, and online reporting. This blend of technology and commitment is a guarantee for preserving water quality, supporting biodiversity, and securing clean water for future generations.

The Result? A healthier environment, a more sustainable industry, and a brighter future. At MSC, we believe: Managing water pollutants is not merely an environmental duty, it is a human responsibility and a path to building a better tomorrow.

Measurement of pollutant parameters in treated wastewater based on suitability for agricultural use

Pollutant parameters	Unit	2021	2022	2023	2024	Permissible limit
Oil and grease	mg/L	0.53	0.5	0.6	0.5	10
Total Suspended Solids (TSS)	mg/L	5	6	4	4.5	100
COD	mg/L	26.8	33	24.25	25	200
BOD	mg/L	6.8	8	10	7.5	100

A circular vision for the future

At MSC, our responsibility does not end at the production line. Our gaze toward the future extends from the initial stages of product design to the point of material return. We believe that environmental design begins at the very inception of a product. That is why, for years, we have strived to take decisive steps toward a circular economy, redefining the linear industrial mindset and breathing new life into materials, resources, and even industrial perspectives.

On this path, tools such as life cycle assessment (LCA) of products and reduction of industrial waste are not mere checkboxes; they represent the fundamental shift we are committed to, a transformation in how we define value, efficiency, and product sustainability.

By leveraging innovative technologies, promoting resource reuse, and advancing waste recovery, we have sought to demonstrate that even within the heart of a vast and complex industry, it is possible to model a wise coexistence with nature.

What follows in this section is an account of the projects and initiatives that have positioned MSC among the pioneers of the circular economy in Iran's steel industry, narratives of regeneration, reintegration into the cycle, and a sustainability journey we pursue with humility, yet unwavering determination.

Iron scrap being prepared for use in electric arc furnaces

Circular economy in practice

In recent years, MSC has significantly increased its production capacity by focusing on quantitative development. However, in its new phase, the company's developmental approach has shifted towards qualitative growth, optimal resource utilization, waste reduction, and responsible supply chain management. Accordingly, the company has formulated a Circular Economy Roadmap through the horizon of 2032, which is shaped by defined targets in key areas such as recycling and waste, water, energy, air pollutants and greenhouse gases, green steel products, green supply chain, and the development of a resilient ecosystem and a sustainable organizational culture.

The process of developing this roadmap has included the following stages:

- Defining strategies, overarching goals, and performance indicators
- Identifying and prioritizing key projects and actions based on internal capabilities and operational needs
- Scheduling activities and key actions to achieve defined objectives by the year 2025
- Financial estimation and budgeting for optimal resource allocation
- Designing mechanisms for monitoring, evaluation, and continuous project updates

As a result of this process, to date, 60 projects in the area of recycling and waste management, 53 projects in the field of energy, 45 projects related to water, and 55 projects focused on reducing air pollutants and greenhouse gases have been identified and prioritized. The implementation of these projects will play a significant role in reducing industrial waste and by-products, enhancing resource recirculation, optimizing water and energy consumption, lowering disposal costs, and minimizing emissions of pollutants and greenhouse gases.

The realization of these initiatives will not only enhance operational efficiency and reduce the environmental impacts of production processes, but also solidify MSC's position as a pioneer in sustainable development and green industry, and as a company that acts responsibly toward society and the environment. The roadmap development process is grounded in a series of preparatory actions and is based on a structured, goal-oriented program that aims to consolidate and finalize all seven layers of MSC's circular economy roadmap by the end of 2025

Completed projects in the field of circular economy

60 Projects
Waste recycling and management

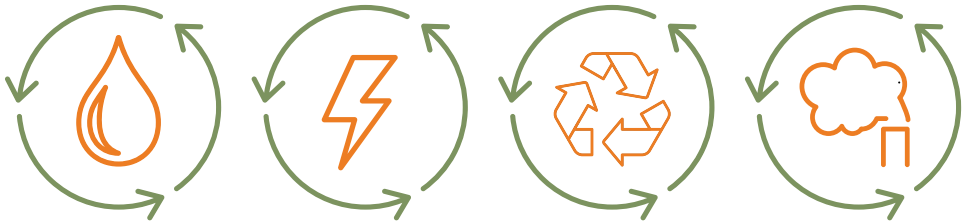
40 Projects
Water

53 Projects
Energy

60 Projects
Reduction of air pollutants and greenhouse gases

Actions taken, ongoing initiatives, and future plans for developing the circular economy roadmap at MSC:		
Title of action	Implementation date	Implementation status
Conducting baseline studies, benchmarking, and best-practice analyses to design a suitable model for implementing a circular economy at MSC	2022-2023	Completed
Formation of seven thematic working groups for the circular economy and scheduling a step-by-step development process for the roadmap	2023	Completed
Launching the “Zero Waste” and “Carbon Neutrality” frameworks, along with the preliminary structure of the circular economy roadmap	2023	Completed
Developing the circular economy roadmap for the “Recycling and Waste Management” working group in three phased layers: “Strategies and Objectives,” “Priority Projects,” and “Resources”	2024	Completed
Performing a circular economy maturity assessment across Mobarakeh Steel Group	2024	Completed
Formulating the circular economy roadmap for the “Water,” “Greenhouse Gases and Air Pollutants,” and “Energy” working groups in the same three structured layers	2025	In progress (Projects have been identified and are currently in the prioritization and scheduling phase)
Drafting roadmaps for the remaining three working groups: “Culture, Ecosystem, and Organizational Development,” “Green Supply Chain,” and “Green Steel Products”	2025	Planned
Integrating all seven roadmap layers, resolving overlaps and conflicts, and finalizing MSC’s comprehensive Circular Economy Roadmap	2025	Planned
Establishing a governance framework for implementation, monitoring, and continuous updating of the roadmap	2025	Planned

In addition to the circular economy roadmap in the field of recycling and waste management, the circular economy roadmaps for the domains of water, energy, and greenhouse gases and atmospheric pollutants are also currently under development.



Circular economy roadmap in the field of recycling and waste management

Macro objectives	Carbon neutrality by 2050		30% Carbon reduction by 2032		Zero waste by 2050	
Strategies	Creating value from by-products and co-products, along with waste management within the company for both internal and external applications		Enhancing MSC's role in processing steel scrap (metallic) and municipal waste (nationwide)			
Indicators	Percentage of circularity of input materials	Ratio of recycled metallic scrap to generated metallic scrap	Revenue from secondary and recycled input resources, and income from waste management	Tons of scrap processed per processing unit	Achievement of defined Technology Readiness Level (TRL)	Increase in material efficiency
Quantitative objectives	20% by 2032	100%	25% of total revenue by 2032	36 million tons by 2032	Achievement of defined Technology Readiness Level (TRL)	98% by 2032
Projects	**Waste and Scrap Reduction** • Optimization or replacement of equipment, processes, and materials (resources and processes) • Automation, smart systems, and use of digital tools to minimize production line waste • Identification, estimation, coding, and documentation of company waste and scrap • Design of mechanisms, systems, and implementation of standards for reverse logistics		**Reuse (+ application development) and reprocessing** • Reprocessing of various types of home scrap • Recovery and reprocessing of valuable elements from sludge • Recovery of valuable elements from slag • Preparation and application development for slag utilization • Recovery and reprocessing of valuable elements from refractory waste • Recovery and reprocessing of valuable elements in waste from various consumables and other materials (e.g., lubricants, additives, catalysts, oxide powders, etc.) • Recovery of valuable elements from company wastewater • Digitalization and smart management of scrap/input charging and intelligent utilization of materials		**Scrap and waste processing** • Recovery of valuable elements and materials from the company's non-industrial waste and municipal waste • Separation technology and development of automated sorting processes for waste and scrap • Technology development for impurity removal from scrap • Platform/business model for scrap and waste collection	

Circular economy roadmap in the domain of recycling and waste management

The circular economy roadmap in the domain of recycling and waste management has been formulated through a hierarchical and coherent approach. At the highest level, three overarching goals have been set: carbon neutrality by 2050, 30% reduction in emissions by 2032, and zero waste by 2050.

At the next level, two main strategies in the field of recycling and waste were identified: “Creating value from by-products and co-products, and managing waste within MSC for both internal and external uses”, and “Enhancing MSC’s share in the processing of steel scrap (metallic) and urban waste (national)”

In the third and fourth levels, five key indicators and corresponding quantitative targets were established:

- Average percentage of reused and recycled materials in the input stream: 20% by 2032
- Ratio of recycled metallic scrap to generated metallic scrap: 100% by 2032
- Revenue from secondary and recycled resource inputs and waste management: 10% by 2032
- Processing unit capacity for scrap: 1.8 million tonnes by 2032
- Improvement in material efficiency: 98% by 2032

The realization of the aforementioned goals, strategies, and performance indicators will be pursued through the implementation of seventy dedicated projects. These projects are the result of a comprehensive and lengthy process of benchmarking and idea generation, the completion of technical documentation, in-depth expert discussions, multiple stages of screening and prioritization based on inclusive criteria, and the active involvement of task force members—comprising relevant management units within MSC, especially under the leadership of the R&D Department and Now-Afarinan-e Exir Co. (consultant). It is worth noting that detailed data has been compiled for each project, covering elements such as:

- Action history
- Technology readiness level (TRL)
- Technology development or transfer
- Type of waste
- Annual volume of waste generation
- Relation to the “R” principles of the circular economy
- Related organizational unit
- Impact on sustainability indicators associated with the working group
- Project nature
- Current operational status regarding generated waste
- Position within main or auxiliary material streams
- Main leader or key stakeholder driving the project forward

For the purpose of final prioritization, an Importance-Opportunity Matrix was developed separately for two categories; “Reduction projects”, and “Reuse, Remanufacturing, and Recycling projects”. Projects located in the first quadrant (i.e., highest urgency and importance) were identified as top priorities for the year 2025.

It is noteworthy that an overall budget estimate was also considered for these projects. However, this estimate must be further refined through opportunity assessment and feasibility studies in subsequent phases. Accordingly, taking the budget into account, the next priority tier for 2025 includes projects in the second quadrant (i.e., high urgency but relatively lower importance). The prioritization of all other projects has been postponed to the year-end review and update of 2025.

It is expected that, moving forward, a defined implementation process will be followed by the project leads to carry out the high-priority projects. Furthermore, the impacts on the defined indicators and targets will be monitored and reported annually. A hierarchical illustration of the goal board and major project clusters in the field of recycling and waste management within the MSC circular economy roadmap is presented below

Hot rolling clarifier sludge and acid pickling oxide powder processing plant

In the complex processes of producing various types of steel, waste generation is inevitable. However, in the era of transitioning toward carbon reduction and resource optimization, the way industrial waste is managed has gone beyond being merely an environmental obligation and has become a competitive and strategic tool in the steel value chain.

MSC, recognizing this transformation and in line with its purpose (management philosophy), “a responsible company for creating a better future”, has identified and assessed various waste streams throughout its production chain.

The investigations revealed that two specific waste types, “hot rolling clarifier sludge” and “acid pickling oxide powder from cold rolling”, require new and serious planning in terms of environmental impact, occupational safety, and economic viability.

Hot rolling clarifier sludge, produced at a volume of 15,000 tons annually and containing significant amounts of iron oxide, has not been recyclable due to oil contamination and clumping after being stockpiled. Over 90,000 tons of this waste had accumulated in open-air piles within the company premises. These piles not only occupied operational space but also caused the production of oily leachate, emitted unpleasant odors, and led to contamination of subsurface water sources.

On the other hand, the oxide powder resulting from the pickling process, due to having up to 10% chloride content, was not usable in the pelletizing process. Moreover, it caused severe corrosion of equipment and released chlorinated dust particles into the air, thereby threatening the health of employees and nearby communities

In this context, MSC, in collaboration with an Iranian knowledge-based company and under a BOT (Build-Operate-Transfer) contract, designed and implemented a comprehensive, eco-solution to process these two waste types. This solution employed advanced technologies and nano-material-based modifiers, without the need for fresh water, and was fully aligned with circular economy principles.

In this project, the oily sludge and chloride-containing oxide powder (iron oxide) are transformed, through physical, chemical, and technological processes, into high-grade 69% iron concentrate, chloride-free industrial-grade iron oxide powder, and valuable construction materials. The proper processing and management of these two waste streams not only help mitigate environmental risks but also generate economic and social benefits in line with sustainable development goals.

Key features of the project include: complete elimination of waste landfilling, a closed-loop water system, total chloride removal, low energy consumption, and prevention of greenhouse gas emissions. Furthermore, the use of wastewater instead of fresh water has positioned this initiative as a successful model for sustainable waste and water resource management in Iran’s steel industry.

In addition to its environmental achievements, the project has created over 50 stable direct jobs for local workers, improved community satisfaction, and enhanced workplace safety. It is now recognized as a replicable industrial model within MSC and other steel manufacturers.

Hot-rolling sludge and oxide powder processing plant at MSC

Main and by-products of the hot-rolling sludge and oxide powder processing plant

Product	Application
Iron concentrate with 69% purity (Main product)	Production of pellets and direct reduced iron (DRI) for use in electric arc furnaces (EAF)
Chlorine-free oxide powder (By-product)	Production of anti-rust primer, colored glass, permanent magnetic parts, permanent magnetic powder, and ferric chloride (for use in water treatment plants as a coagulant of impurities)
Black pigment (By-product)	Replacement of carbon pigments, production of plastics and Nano-products
Raw material for construction materials production (By-product)	Production of building materials such as bricks and cobblestones

Final product loading (iron ore concentrate)

Ultraviolet (UV) irradiation of incoming sludge

Dechlorination of oxide powder

Waste and by-product management

In line with MSC's responsible approach to preserving resources for future generations, the company has designed and implemented strategic and effective actions across all environmental areas including air, water, energy, waste, and biodiversity. Waste management, as a key pillar of the circular economy approach, holds a prominent position in the company's environmental programs.

Within the framework of the Environmental Management System based on the ISO 14001 Standard, and aligned with MSC's environmental policy, all waste generated throughout the steel value chain is collected, segregated, and stored in designated areas according to established procedures. Waste management methods vary by type and include processing, recycling, disposal, or composting.

To continuously monitor environmental performance in the area of waste, indicators such as the ratio of recycled and sold waste to total generated waste, and the amount of waste oil sold are utilized. These indicators are measured and analyzed on a semi-annual basis.

The company's waste management actions are structurally categorized into metallic and non-metallic waste. For each category, different approaches are adopted to minimize waste, promote reuse, and maximize resource recovery.

Actions taken in the metallic scrap sector:

The collection of metallic scrap generated in MSC with consideration of environmental issues in line with green steel production and creating higher added value based on the principles of circular economy, through the processes of stockpiling, processing, reuse, and sale of surplus metallic scrap beyond the needs, with the priority of observing zero human and equipment accident, is among the most important objectives of the metallic scrap processing unit. The most important actions in this regard are as follows:

- Processing various types of metallic waste produced in MSC
- Supplying the required scrap for electric arc furnaces through processing of metallic scrap generated inside the company in order to avoid scrap purchasing
- Defining research and knowledge-based projects in order to create more added value based on circular economy principles and green steel production by observing global environmental standards
- Cooperation in the preparation of MSC's comprehensive scrap atlas
- Design, installation, and implementation of an automatic cutting line for skull, metallic residue left in the tundish (tundish skull), and scrap slabs in the metallic scrap processing unit
- Project for constructing cutting cabins for heavy metallic scrap equipped with dust collectors in order to eliminate environmental pollutants resulting from cutting
- Skull downsizing project with the aim of reducing processing costs of skull
- Development of scrap processing hall to increase processing capacity
- Design, construction, and installation of 60-ton rotating tundish in the cutting workshop to integrate processing steps and reduce transportation costs
- Installation of equipment related to the cutting line for scrap coils in order to produce light scrap needed by the steelmaking unit
- Installation of sheet pressing equipment to facilitate reuse of scrap sheets
- Installation of dust pressing equipment to enable the use of charge dust in material handling systems

Achievements

- Processing more than 50% of the metallic scrap generated within MSC
- Supplying various types of iron scrap required by the steelmaking area and eliminating the need for purchased scrap in the year 2024
- Preparing metallic scrap for sale with the aim of maximizing profit
- Organizing scrap stockpile locations in the cutting workshop yards and the 54-hectare site

of the steel company

- Actions taken in the non-metallic waste management sector
- Preparing a waste profile for each area and unit separately to map the waste life cycle and identify the flow of waste from the point of generation to the end of the process
- Processing and reusing oxide powder from the acid recovery unit and hot-rolling clarifier sludge from the hot rolling mill as raw material in the iron making area
- Processing over 500,000 tons of slag per year and utilizing it in the production of blockage, base and sub-base layers, rail ballast, and slag asphalt
- Reusing steelmaking charging dust up to 30,000 tons per year in the production process
- Managing industrial waste through the Integrated Environmental Management System to reduce waste and ensure accurate control of scrap and waste at both source and destination
- Establishing appropriate workflows in the waste management unit and all production and support areas to optimize the management of generated waste
- Creating the necessary infrastructure for proper storage of waste, including a reception site for petroleum-based waste, a scrap warehouse, isolated lagoons, and a slag stockpile site

Waste					
Indicator	Unit	2021	2022	2023	2024
Disposed waste	Ton	1,044	187	48	0
Sale of processed slag	Ton	206,000	500,000	555,000	325,000
The ratio of recycled or sold waste to total generated waste	%	14	24	24	27

52.4 %
The ratio of processed metallic scrap to total generated metallic scrap

17.6 %
The ratio of sold metallic scrap to generated metallic scrap

886,998 Million Rials
The amount of revenue from the selling of metallic scrap

The story of MSTID

From soil to steel: Establishing waste management infrastructure

In the course of industrial development, achievements and capacities sometimes emerge that transcend economic objectives, reflecting a deeper understanding of responsibility toward natural resources and the environment. At MSC, with full awareness of the environmental impacts of production processes and a firm belief in the necessity for a paradigm shift, efforts have been made to approach industrial waste recycling and reuse not merely as a regulatory requirement, but as an opportunity for innovation and continuous improvement.

The project to establish waste management infrastructure, funded through investment by the MSTID Research and Technology Fund, represents a measured and pragmatic response to this perspective, an approach that leverages advanced technologies to reintegrate valuable resources into the production cycle. This path not only contributes to optimized industrial performance, but also stands as a testament to the company's long-term commitment to the principles of sustainable development and respect for the shared future of all stakeholders.

In pursuit of a new model of industrial sustainability, the MSTID has launched a transformative project titled "Establishment of Waste Management Infrastructure in the Steel Industry."

This project is aimed at recovering valuable metals from industrial waste, with a dual focus on addressing environmental challenges and creating economic value.

At the core of this initiative lies the installation and commissioning of a state-of-the-art recycling unit based on RHF (Rotary Hearth Furnace) technology, an emerging solution recognized since the early 2000s as an effective alternative to the costly and polluting conventional primary metal production methods.

Currently, leading countries and major global steel producers including Baowu Steel, ArcelorMittal, Nippon Steel, and POSCO are utilizing this process.

Within this furnace, briquettes made from iron-bearing wastes such as oxide scales, dust from furnaces, and rolling mill scale are fed onto the rotary hearth. At elevated temperatures and in the presence of reducing gases, metals are separated from their oxide compounds and converted into pure metallic form.

This process not only enhances resource efficiency but also reduces dependency on first hand mineral resources. The key components of this infrastructure include:

- **Waste collection system:** Designing optimized transportation routes, initial sorting procedures, and strategically located temporary storage to prevent environmental contamination and facilitate downstream processing.
- **Metal recovery furnace unit:** Utilization of a furnace with a processing capacity of approximately 4,000 tons per year, equipped with precise temperature control, reducing atmosphere regulation, and optimized metal extraction capabilities.
- **Pollutant management:** Installation of a bag filter system, continuous monitoring of exhaust gases, and deployment of industrial ventilation systems to control the release of gaseous emissions and airborne particulates.
- **Secured storage for recycled materials and residues:** Allocation of separate storage facilities for final recovered metals and unusable residues, intended either for dispatch to industrial landfills or secondary reuse.
- **HSE implementation:** Personnel training, installation of safety signage, execution of emergency response plans, and promotion of a strong safety culture throughout waste handling and furnace operation processes.

Environmental achievements of the project

- 60–70% reduction in landfilling of industrial waste
- Reduction in groundwater pollution (According to UNEP data: one ton of landfilled waste contaminates approximately 150 liters of groundwater)
- Decreased extraction of mineral resources by conserving iron ore and coal
- 70% reduction in energy consumption and 75% reduction in CO_2 emissions through recycling
- Prevention of the release of heavy metals such as lead, nickel, chromium, and vanadium into the environment
- Improvement in air quality within the industrial site and surrounding areas through pollutant monitoring and industrial filtration systems

Social and economic impacts

- Creation of specialized job opportunities in metallurgy, environmental science, and safety
- Improved production chain efficiency and reintegration of valuable resources into the domestic economy
- Enhanced corporate social acceptance and reduced environmental tensions with local communities

The MSTID infrastructure project is not merely a step toward industrial recycling, but a foundational move toward a circular economy and low-carbon industry. This model demonstrates that with a fresh perspective and smart investment, even waste can be turned into wealth, shaping a more sustainable future for the generations to come

The story of Sangan Mining Industries Co.

A new step toward sustainability in Sangan Mining Industries: Implementation of a mechanized tailings stacking system

In its pursuit of environmental protection and sustainable development, Sangan Mining Industries Co., as the first producer of dry concentrate and tailings in Iran and the Middle East—launched the innovative project titled "Mechanized Integrated Tailings Stacking System" in early March 2024. Full commissioning of this project is targeted by the end of 2025.

This system, based on advanced material handling technologies and equipped with state-of-the-art spreaders, is designed to systematically deposit around 5 million tons of tailings annually over a 300-hectare area. The mechanized stacking structure is engineered to prevent the spread of fine particulate matter and pollution caused by organic residues in the tailings, while also enabling future reuse of these materials.

Moreover, by utilizing a filter press system for tailings with approximately 9% moisture content, the process not only reduces water wastage but also produces dry and recyclable tailings, a significant step toward resource efficiency and circular utilization.

Environmental benefits

- Reduction of pollutant emissions by eliminating traditional truck-based dumping methods
- Prevention of scattered and unregulated tailings accumulation
- Enabling industrial recycling of tailings and their reuse in other industries

Social benefits

- Creation of at least 100 stable jobs during construction and 50 long-term employment opportunities during the 25-year operation period
- Serving as a model for sustainable industrial development in eastern regions of the country

This project goes beyond a mere operational solution; it is a manifestation of industrial wisdom and Sangan Mining Industries Company's forward-looking vision toward waste management, environmental responsibility, and national value creation.

Clean energy, a green future

At MSC, the protection of natural resources is not merely an organizational responsibility but a reflection of our green wisdom and deep understanding of sustainability, wisdom that guides us toward designing a low-carbon and resilient future. This approach has transformed our outlook on energy management and has led to a focused effort on the development and utilization of renewable and clean energy sources.

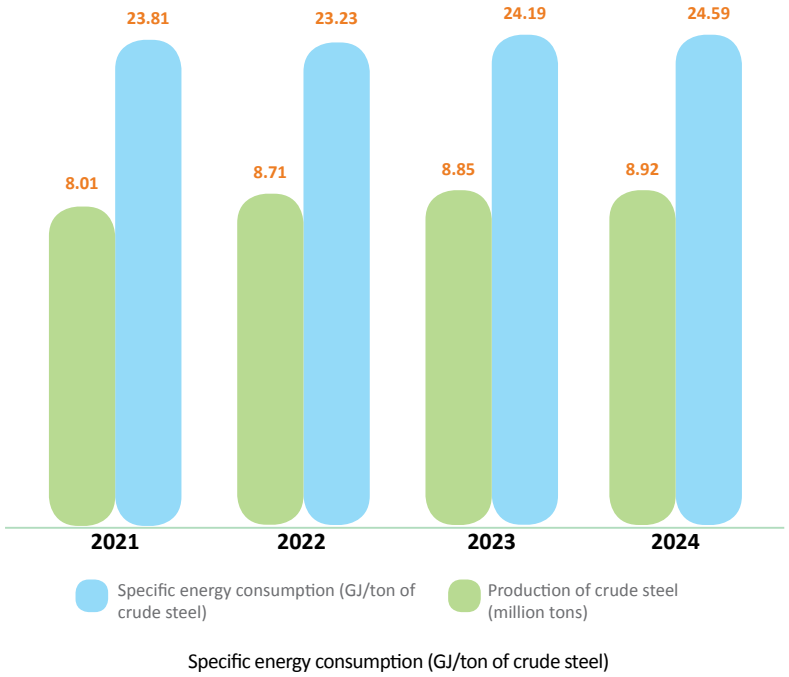
According to the company's Carbon Neutrality Roadmap, achieving a clean and sustainable future is targeted in two phases:

- A 30% reduction in carbon emissions by 2032
- Achieving net-zero carbon by 2050

Realizing these goals requires modern infrastructure in the field of clean and economically viable power supply.

In this context, MSC has embarked on the development of strategic and foundational projects, including the construction of a high-efficiency combined cycle power plant, the establishment of solar power plants in sun-rich regions, and the expansion of wind farms in the country's wind-prone areas.

These initiatives are not only technical responses to environmental crises, but also clear reflections of our commitment to sustainability wisdom and environmental responsibility toward future generations. We firmly believe that the future of the steel industry depends on the integration of technology, innovation, and green wisdom, a path MSC is steadfastly pursuing to become a model of responsible development in the nation's industrial landscape.



Specific energy consumption (GJ/ton of crude steel)

20,198 MWH

Green energy (solar) injected into the company's power grid

Energy management system of MSC: Aligned with global standards

With a strong track record in efficient energy resource management, MSC took a fundamental step in 2015 by designing and implementing an energy management system based on the international standard ISO 50001, achieving official certification. The primary objective of this system is to enhance energy efficiency through optimization projects and the reduction of energy consumption across various process and operational levels.

In this regard, the company has developed and implemented diverse approaches to energy consumption management, allowing for continuous performance improvement while maintaining it within the permissible range defined by the national standard ISIRI 9653. Today, the energy management system at MSC is not merely an operational requirement but a core component of the company's organizational culture and strategic approach toward sustainable development and minimizing environmental impacts.

MSC combined cycle power plant: A green current at the heart of steel

At the heart of Iran's most industrialized infrastructure where steel is born, a clean, intelligent, and forward-looking force has emerged: the MSC Combined Cycle Power Plant. With a capacity exceeding 914 MW, this facility symbolizes the coexistence of "power of metal" and "green technology." Equipped with state-of-the-art F-class gas turbines, the plant has achieved an impressive efficiency rate of 58% which is 19% higher than the national average for thermal power plants and on par with the best global standards. In other words: every unit of fuel consumed is converted into maximum energy, minimal loss, maximum output.

From consumer to producer: A transformation in the energy ecosystem

Currently, two gas units with a combined capacity of 614 MW have been commissioned and are operational. Notably, during peak consumption seasons, they supply up to 15% of the electricity needs of the MSC. Every megawatt generated not only supports the steel production lines but also helps ease the load on the national power grid during the country's scorching summers and this is only the beginning..

By 2025: MSC; energy self-sufficient, sustainability pioneer

With the full commissioning of the steam cycle and the entire power plant by the end of 2025, MSC is expected to generate around 750 MW of its own electricity internally. That's equivalent to powering over 1 million Iranian households for a year, and it represents a significant reduction in CO_2 emissions otherwise generated from grid-based electricity consumption.

A strategic link between energy and climate

A power plant that generates more than electricity, it builds a low-carbon future; this is a strategic leap by MSC, transitioning from a major energy consumer to a smart, sustainable producer aligned with global climate policies.

Innovation at the heart of technology

- Deployment of next-generation Low-NOx Burners (LNB) to reduce emissions with high efficiency
- Dry cooling system with air condensers to drastically reduce water usage and minimize the plant's ecological footprint
- 43% reduction in fuel consumption per megawatt of electricity, fully aligned with long-term decarbonization goals
- This power plant is more than just an industrial facility, it's a symbol of MSC's forward-thinking approach to green wisdom, where energy, technology, and responsibility converge to shape a brighter future

MSC's combined cycle power plant

The story of Sefid Dasht Steel Co.

Smart utilization of hidden energy

In response to the pressing need of the steel industry for energy optimization, Sefid Dasht Steel Company has initiated a research project aimed at generating electricity from its gas pressure reduction station. This project focuses on utilizing turboexpanders instead of conventional pressure-reducing valves, in order to generate stable and clean power from the latent energy in high-pressure natural gas.

The direct reduction process for producing direct reduced iron (DRI) at Sefid Dasht Steel Company requires natural gas at a flow rate of approximately 50,000 Nm^3/h. This gas is supplied from the national gas network at a pressure of 60 bar and reduced to around 17 bar at the pressure reduction station, a process traditionally carried out by pressure-reducing valves. However, in this method, although the pressure is reduced, no useful work is extracted, and the potential energy within the gas is wasted.

In contrast, turboexpanders, by performing adiabatic expansion, convert this energy into usable mechanical torque (for driving a generator or compressor). This technology, which dates back to the early 20th century, has now found widespread application in the mineral and chemical industries, particularly in gas pressure reduction stations.

This project has been designed in four main phases:

- Literature review and scientific background: Analysis of related incentive policies, assessment of the current pressure reduction station, and evaluation of the upstream and internal power grid of the plant.
- Technical simulations and risk assessment: Thermodynamic modeling of the expansion process, estimation of recoverable power, dynamic simulation of the generator, safety risk analysis, and design of preventive measures.
- Equipment market assessment: Identification of reputable global brands in the field of turboexpanders, their local representatives, and preparation of procurement tender documents.
- Economic analysis and final report preparation: Calculation of return on investment (ROI), evaluation of energy savings, and economic feasibility analysis based on government support policies.

Environmental benefits

- Generation of renewable electricity from recovered energy
- Reduction in energy losses and improvement in overall efficiency
- Lower greenhouse gas emissions
- Decreased dependence on fossil fuels

Social benefits

- Local job creation and skill development
- Improved access to energy, especially in areas with underdeveloped infrastructure
- Reduction in electricity costs and positive impact on energy market pricing

This project exemplifies a novel perspective on the hidden opportunities within existing infrastructure. By leveraging engineering expertise and smart energy policies, Sefid Dasht Steel Company has taken a meaningful step toward high efficiency, environmental sustainability, and a green economy.

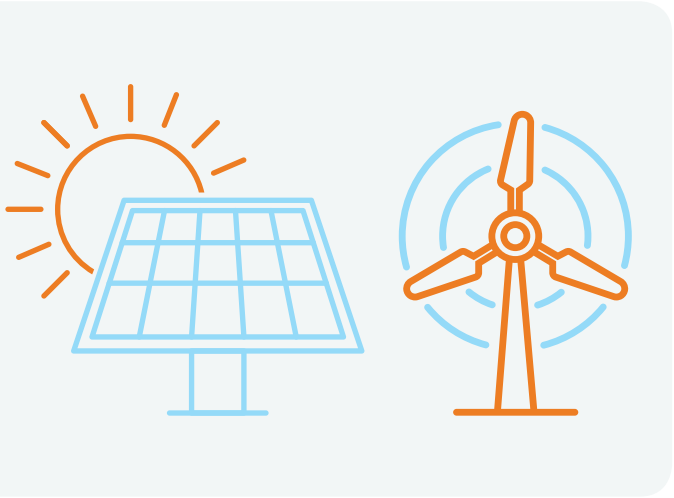
Transition to renewables: Foresight in action

The shift toward renewable energy is not merely a technological choice; it is a wise, responsible, and human response to the needs of today's society and future generations.

At MSC, we believe that true sustainability stems from bold decisions rooted in foresight.

Harnessing solar and clean energy is a step toward reducing dependency on fossil fuels, cutting greenhouse gas emissions, and diversifying the national energy mix.

Along this path, we remain committed to our environmental responsibilities while actively working to enhance energy resilience across the steel production value chain.



MSC's combined cycle power plant

Aftab-e Shargh (Sun of the East) solar power plant: A bright step toward decarbonization

In line with its sustainable development goals and transition toward a low-carbon economy, MSC has initiated the construction of the Aftab-e Shargh solar power plant. With a final capacity of 600 MW, the plant is being built on a 1,200-hectare site in eastern Isfahan.

This 305 million Euro investment project is designed to supply part of MSC's energy demand and reduce its dependence on fossil fuels. Once fully operational, the plant is expected to prevent the annual emission of 850,000 tons of CO_2, the equivalent of planting 42.5 million trees.

Equipped with advanced photovoltaic panels and an intelligent monitoring system, Aftab-e Shargh will be capable of generating approximately 18 million KWH of clean electricity annually. This amount of energy is equivalent to the annual electricity consumption of over 5,000 urban households and will prevent more than 12,000 tons of CO_2 emissions per year.

Current status and project progress

Construction of the Aftab-e Shargh solar power plant began in September 2023, and its first phase, with a generation capacity of 120 MW, has now been commissioned. Through this project, MSC demonstrates that the steel industry can be not only an energy consumer but also a clean energy producer, a shift that makes true sustainability achievable.

Environmental and economic impacts

The operation of Aftab-e Shargh will play a significant role in reducing environmental pollutants and improving air quality in the region. Moreover, the project has had a positive economic impact by creating over 600 jobs across different phases of construction and operation.

The Aftab-e Shargh solar power plant stands as a symbol of MSC's commitment to sustainable development and environmental responsibility. It reflects the company's firm determination to move toward a greener and more sustainable future for the next generations.

With the inauguration of the first phase of aftab-e shargh solar power plant, the eyes of Iran have been lit with hope

MSC's Aftab-e Shargh solar power plant

Thanks to the dedication and expertise of Iranian engineers and specialists, the first phase of the Aftab-e Shargh Solar Power Plant, with a generation capacity of 120 MW, has officially been commissioned. As one of the country's national renewable energy projects, it marks a major step toward sustainable electricity supply and helps address the power imbalance challenges in Iran's grid.

Utilizing state-of-the-art technology and backed by substantial investment from MSC, this project reached execution in a remarkably short timeframe. Once fully completed, Aftab-e Shargh will become the largest solar power plant in the country, with a total generation capacity of 600 MW for the national grid.

Beyond its environmental benefits, the inauguration of Aftab-e Shargh's first phase carries a hopeful message for the people of Iran: a future with fewer blackouts and improved energy management, thanks to increased electricity generation from sustainable and renewable sources.

This significant achievement also stands as a testament to the capabilities and technical expertise of Iranian professionals in delivering large-scale infrastructure projects in the energy sector.

The translation: The eyes of Iran have been lit with hope

Scan this code for watching of solar power plant introduction

Location:
Eastern Isfahan (Koohpayeh region)

Total Capacity:
600 MW

Investment:
400 million USD

Operational area:
12 km^2

Number of Solar Panels:
1,000,000 panels

Equal to:
2,000 football fields

Maximum power per panel:
660 W

Annual CO_2 emissions reduction:
1,000,000 tons per year

The story of SANAP

Technological advancement on the path to sustainability; replacing 660W with 710W solar panels in the aftab-e shargh solar power plant

In line with technology modernization and the alignment of renewable energy projects with international standards, the first phase of the Aftab-e Shargh Solar Power Plant saw the replacement of 660W solar panels with advanced 710W panels.

This technological upgrade was implemented without requiring additional land or redesigning the project's infrastructure. It represents a significant step toward enhancing efficiency, reducing environmental impact, and improving the project's social indicators.

Environmental achievements

Reduced water consumption

- On average, each solar panel requires approximately 2 liters of water per cleaning cycle. By reducing the total number of panels through upgrading their output capacity, around 25,608 liters of water have been saved in each cleaning round.

  This savings has a significant impact in water-scarce regions of the country, easing the pressure on underground water resources and drinking water supplies.

  (Equivalent to the daily water consumption of more than 40 households in arid areas of Iran.)

Reduction in GHG emissions from panel production and transportation

- With the deployment of higher-capacity panels, the total number of panels required has decreased, preventing the emission of approximately 1,280,400 kilograms of CO_2 during the manufacturing process.
- In terms of transportation, increased panel density in each container (594 panels vs. the previous 558) led to a reduction in total containers used, from 325.84 to 284.54.

  This translates into 41 fewer trailer trucks on the 950 km route from Shahid Rajaee Port to the project site, thereby avoiding an additional 31,390 kg of CO_2 emissions.
- The total CO_2 emission reduction from this initiative amounts to 1,311,790 kg (1,311.8 tons), equivalent to the annual carbon absorption of approximately 60,000 mature trees.

Reduction of pollution and secondary impacts of transportation

- The reduction in the number of trailer trucks has also brought several secondary environmental and safety benefits:
  - o Lower consumption of fossil fuels
  - o Reduction in air and noise pollution along the transportation route
  - o Reduced traffic congestion and risk of road accidents
  - o Lower depreciation of road infrastructure and asphalt surfaces

Improved land efficiency and ecosystem protection

- Increasing energy output per unit of land area, without physical expansion, has contributed to:
  - o Preservation of natural vegetation
  - o Minimized destruction of natural habitats
  - o Reduced soil erosion

This approach aligns with the principles of biodiversity conservation and dust control in arid and desert regions.

Social achievements

Improved occupational safety and health

- Reducing the number of solar panels has lowered the workload for installation, maintenance, inspection, and cleaning teams. As a result, worker fatigue and the risk of occupational incidents have decreased, leading to enhanced safety and health conditions on-site. This benefit is particularly significant given the harsh and hot climate of the project location.

Minimized social conflicts over land allocation

- By maximizing the use of available space and avoiding the physical expansion of the project, interference with agricultural lands, pastures, and resources utilized by local communities has been minimized. This approach has led to greater social acceptance and reduced local tensions.

The solar panel upgrade initiative at the Aftab-e Shargh solar power plant is a successful example of a sustainability-driven technological intervention that has delivered multidimensional benefits including significant reductions in water consumption and CO_2 emissions, enhanced land use efficiency, and improved worker safety. This experience stands as a valuable model for other renewable energy development projects across the country.

Sangan wind power plant: A symbol of a green future

In MSC's ambitious vision to build a green future and establish a clean value chain in the steel industry, the wind has joined the mission. The Sangan wind power plant is more than just an energy project, it represents a fundamental transformation: a smart initiative to replace fossil fuels with clean energy at the heart of steelmaking operations.

Currently under construction with a 200 million USD investment by MSC, the wind farm has a nameplate capacity of 100 MW and spans an area of 27 km2 in the wind-rich region of Khaf, Khorasan Razavi Province.

The project aims to generate clean electricity from wind to directly power the company's steel production chain, marking a major step toward pollution reduction, lower consumption of non-renewable resources, and achieving carbon neutrality targets by 2050.

Harmony with nature, innovation in industry

The unique geographical position of the Sangan region characterized by consistent and steady winds, offers an exceptional platform for renewable energy generation. The Sangan wind power plant is designed not only to meet part of the company's energy demands but also to enhance the resilience of the national power grid during peak consumption periods.

This project stands as a prominent symbol of sustainable wisdom and the energy transition within heavy industry where nature, technology, and social responsibility are interwoven to forge greener, cleaner, and future-oriented steel.

Location:
Khorasan Razavi (Khaf city)

Total Capacity:
200 MW

Investment:
200 million USD

Operational area:
27 km^2

Number of turbines:
40 turbines

Equal to:
4500 football fields

Maximum power of each turbine:
5 MW

Annual CO_2 emissions reduction:
500,000 tons per year

Social performance

A workplace for growth, synergy, and human excellence

At MSC, sustainability wisdom serves as a strategic compass, guiding us to the belief that human capital is not merely the driving force behind production, but also the foundation for shaping a responsible and resilient future. We regard the workplace not just as a setting for task execution, but as an ecosystem for collective growth, knowledge exchange, mutual learning, and the cultivation of human potential.

The employees of MSC, with their deep-rooted commitment and remarkable resilience in the face of crises, have laid the solid pillars of the company's success. Accordingly, we are committed to providing an environment where every individual, regardless of gender, ethnicity, or belief, can flourish, learn, and contribute to shared excellence

Our workplace is founded upon three wisdom-driven principles: inclusive health and safety, structural equity, and shared growth. We have endeavored to align our organizational structure and its prevailing culture with the values of human and social sustainability, ensuring consistent support for employees and their families.

Through a holistic and equitable approach, we have created equal opportunities for all individuals to grow within a safe and supportive environment. While there are inherent limitations in certain industrial roles regarding the presence of women, we take pride in the meaningful contributions of our female colleagues across many organizational departments and deeply value their role in the company's achievements.

Currently, MSC employs 11,766 individuals across 3,429 organizational positions, within a framework of 261 job functions and 11 occupational levels. This structure is designed to ensure that individual growth is seamlessly integrated with the organization's sustainable development.

1.6
Female employees

98.4
Male employees

10% under 30 years old

82% 30–50 years old

8% over 50 years old

41.5
Average age of employees

Attracting human capital with a sustainable and responsible approach

At MSC, we believe that valuable production is not achieved solely through equipment and resources, but through the presence of competent, capable, and committed individuals. Therefore, the process of attracting, selecting, and hiring human capital is not only a strategic step toward the organization's excellence, but also a reflection of our responsibility to contribute to a better future for society.

We pursue this path with precision, transparency, and a strong commitment to the principles of fairness, diversity, and social equity, enabling us to select the most qualified individuals from among the applicants based on scientific, professional, and ethical criteria. Achieving MSC's long-term objectives within the framework of international sustainability indicators would not be possible without knowledgeable, healthy, and specialized human capital.

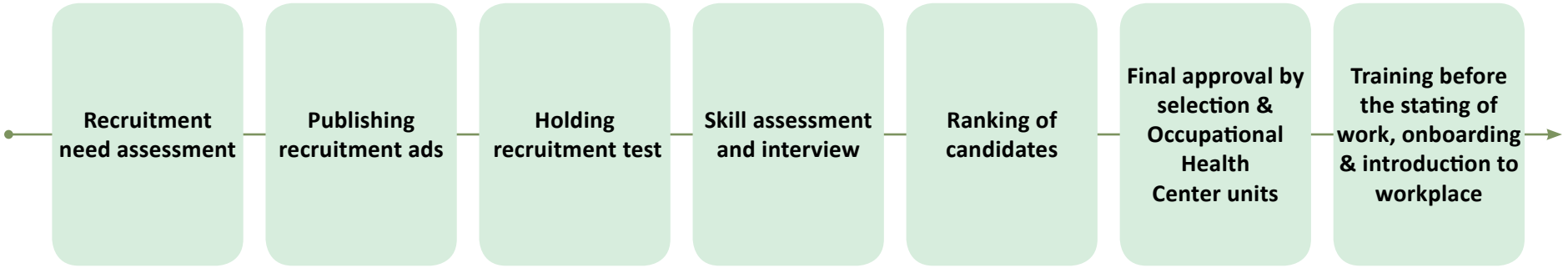
Accordingly, the company's human resource planning is based on organizational structure, retirement forecasts, vacant positions, job competency profiles, and outsourcing policies. The recruitment process begins with nationwide employment examinations. After passing the evaluation and selection stages, accepted candidates proceed to the onboarding phase through a person–job fit model, an approach that integrates personality traits with job requirements. They then enter pre-employment training, organizational socialization, and are assigned to their designated positions. To facilitate this process, a localized model for structured onboarding and provisional placement has been designed and implemented, ensuring that the integration of new personnel is well-organized, human-centered, and purposeful.

Contrary to being a static process, this cycle is part of a learning and evolving system. Recognizing the importance of continuous learning as a key to sustainability, MSC constantly monitors the effectiveness and efficiency of its recruitment and hiring practices and draws upon organizational insights for ongoing improvement. Among the key achievements of the past two years, stemming from revisions and improvements driven by organizational learning, are the following initiatives:

- Updating the occupational health assessment process based on the latest scientific models to enable more effective and intelligent recruitment
- Implementing targeted onboarding programs for new employees
- Allocating organizational positions based on individuals' personality traits and competencies
- Conducting specialized skill assessments for candidates with a high school diploma
- Organizing assessment centers to evaluate the competencies of candidates applying for bachelor-level positions
- Designing and implementing a comprehensive human resource planning system with a sustainability-oriented approach

Through these measures, MSC is pursuing the development of its human capital in a structured, responsible manner aligned with global sustainability goals

Recruitment process



Creating employment opportunities at national and local levels through a needs-based, region-oriented approach

One of the core objectives behind establishing MSC at its current location was to generate employment and strengthen economic growth within local communities. In line with this goal, the company has consistently prioritized applicants from surrounding areas during its recruitment processes, aiming to ensure equitable and balanced job opportunities for both national and local workforces.

In this context, the most recent recruitment campaign held in 2023 was conducted based on the company's actual operational needs and with the objective of filling specialized positions. Following standardized evaluation procedures, 468 individuals were hired, 210 of whom were from the communities surrounding the plant. These figures attest to MSC's ongoing commitment to inclusive, participatory regional development and to promoting equity in access to employment opportunities.

Furthermore, one of the key principles outlined in MSC's Comprehensive Code of Conduct is non-discrimination toward human capital. All new employees are introduced to these ethical and professional codes at the beginning of their employment, in order to foster a healthy, ethical, and participatory work environment across the organization.

Our commitment to respecting human rights and children's rights is clearly reflected at all levels of recruitment and procurement. No child labor is employed at the company, and we evaluate our suppliers based on strict social criteria to ensure that ethical and decent labor standards are upheld throughout our supply chain.

Through the implementation of these policies and commitments, MSC not only moves forward on the path of sustainable economic and social development in the region, but is also recognized as a responsible, justice-oriented organization committed to human values. We continuously strive to provide a healthy, safe, and professional work environment for all employees and to contribute meaningfully to building a sustainable future for both national and local communities.

Social and human development

MSC, in line with fulfilling its social responsibilities, has taken effective steps to safeguard employee health and enhance the quality of working life. One of the most significant of these measures is the transparent and rigorous implementation of laws and regulations related to arduous and hazardous occupations. In this regard, the company, in close collaboration with labor departments and other relevant authorities, identifies positions that are inherently harmful. For employees working in such roles, two effective support mechanisms are pursued:

- Early retirement, subject to obtaining the necessary legal approvals, allowing employees to leave their roles before facing irreversible physical or mental harm and transition into a relatively calm stage of life.
- Job reassignment or relocation, aimed at reducing occupational hazards and minimizing the long-term impact on employees' physical and mental health

This approach has led to several important social and human outcomes:

- A reduction in medical expenses for employees, their families, and the national healthcare system
- Prevention of social harm resulting from the physical or mental incapacity of worn-out employees and the associated economic pressures
- The replacement of retired employees with younger, more capable personnel, which has contributed to greater organizational dynamism, increased employment, and improved social conditions in the communities surrounding the plant

Through this policy, MSC not only protects its workforce against the consequences of physically demanding jobs, but also, at a broader level, advances a path toward sustainable social and human development through its human resources strategies.

Training and development: MSC, a university as vast as an industry

At MSC, human capital not only drives production but also acts as the engine of transformation and the architect of the company's future. We believe that true growth occurs when people are placed on the path of development. For us, training is not an obligation, it is a smart, long-term investment.

How did we turn training into a competitive advantage?

By designing a dynamic and integrated learning pathway, we have created a learning-oriented environment in which every individual, team, and organizational unit can grow according to their actual competencies and needs. This pathway begins with tools such as competency profiles, performance evaluations, multi-source feedback, and training surveys, and is then transformed by specialized working groups into a prioritized and detailed training program. Notably, over 75% of the training is delivered by the company's internal instructors, meaning that knowledge is transferred from within the organization to enable organic, self-sustaining growth.

The initiatives that have transformed the training landscape at MSC include:

- Individual Development Plans (IDPs) focused on succession planning and one-on-one coaching
- Revision of job training standards and direct alignment with training courses
- Launch of the "Amoozeshyar" system for smart course management
- Pilot implementation of a mentoring project with a problem-solving approach in production areas
- Automation of training planning and course definition processes
- Deployment of specialized performance coaches in key departments
- Implementation of ISO 10015: 2019 for high-quality training
- Skill development assessment workshops and a knowledge validation system
- A comprehensive framework for participation in specialized conferences and seminars
- Calculation of training return on investment (ROI) for real impact evaluation
- Innovative initiatives such as "Peer Conversation Café" to promote empathy and empowerment
- An official mentoring system for internal knowledge transfer
- Renovation and modernization of corporate training centers
- Development of multimedia training content and expansion of digital learning
- Promotion of digital reading culture across the company
- Infrastructure planning for the future of learning
- To ensure that training remains dynamic and effective, we have developed innovative structures:
- Development of training profiles for supervisory levels
- Design of a smart interaction app for instructor and learner
- Performance-based needs assessment driven by competency gaps
- Expansion of large-scale virtual training in an industrial context
- Deployment of an organizational industrial psychologist to enhance learning well-being
- Three-level evaluation of course effectiveness (individual, team, organizational)

Family: The complementary circle of development

We do not consider development to be limited to employees alone. Through the Family Development Program (FDP), we strive to enhance well-being, knowledge, and awareness within the home environment as well. This initiative reflects our broader commitment to sustainable human development.

Smart redesign of training at MSC

At MSC, employee training is not limited to holding classes and delivering content; it is a comprehensive and purposeful process that begins with thorough needs analysis and concludes with training effectiveness evaluation. This approach has made us a model of structured, homegrown training within the Iranian steel industry.

Step one: Smart needs analysis and design

Every training course begins with a systematic analysis of educational needs at the individual, team, and organizational levels. Following this, lesson plans and specialized training content are developed in collaboration with subject-matter experts to ensure that the training fully aligns with the actual needs of employees

Internal capacity building through in-house instructors

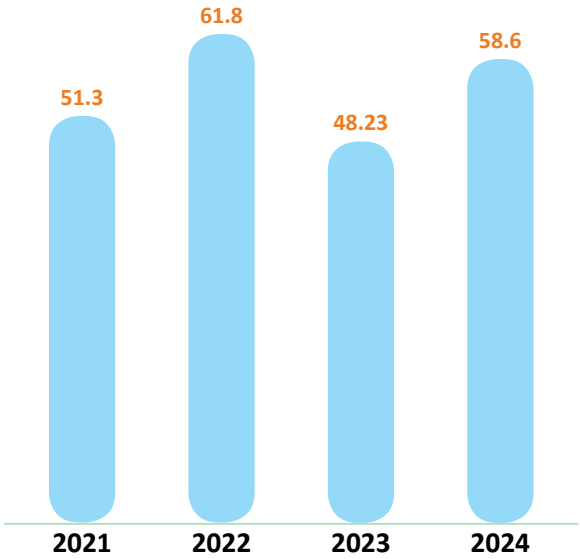
We take pride in the fact that 75% of training courses at MSC are delivered by our internal instructors, demonstrating the active flow of organizational knowledge and its role in enabling others to grow. For the remaining courses, we carefully engage reputable training institutions based on clearly defined instructor selection guidelines. Each selected instructor is provided with the necessary educational infrastructure, including physical space, equipment, and digital content, aligned with the course syllabus.

Initiatives to enhance the learning experience

To improve the quality of training and increase employee satisfaction, a range of developmental and technology-driven measures have been implemented:

- Formation of specialized training committees for collaboration and continuous improvement
- Revision of training needs assessment and planning processes to align with strategic goals
- Monitoring of learner alignment levels through a competency validation system
- Electronic distribution of course materials prior to the start of each course to enhance preparedness
- Upgrading the automated training management system to streamline processes and improve efficiency

These initiatives have transformed training from a mere “event” into a “continuous and purposeful learning process” aimed at empowering employees and driving organizational excellence.



Employee training per capita (person-hours)

15,334 Hours
Female employees training hours

707,918 Hours
Male employees training hours

Forward-looking leaders: the driving force of sustainable excellence at MSC

In MSC's ambitious journey toward sustainable development, effective leadership is not a privilege but a necessity. We believe leaders must be more than managers, they should be inspiring, transformative individuals equipped with a long-term vision. Accordingly, by systematically implementing the Leadership Development Program (LDP), we have taken a strategic step toward nurturing the next generation of leaders.

Three-layer leadership development structure

The LDP model is built on three core pillars:

1. **Individual Development Plan (IDP):** A tailored growth path is designed for each manager, targeting their skills, competencies, and areas for improvement.
2. **Collective Mindset Development:** Through strategic dialogues, workshops, and group projects, systemic and synergistic thinking among leaders is strengthened.
3. **Business Management Knowledge Development:** Specialized courses acquaint leaders with the latest management tools, analyses, and models.

Continuous evaluation; guaranteeing improvement

To truly measure the effectiveness of this pathway, we use indicators such as employee satisfaction with supervisors and the level of trust in the leadership team. These assessments provide critical feedback for the ongoing refinement and enhancement of leadership development programs.

Innovation in leadership empowerment

With a forward-thinking approach, MSC has implemented a series of innovative initiatives in its leadership development process:

- Designing a comprehensive coaching skills program in collaboration with the University of Tehran
- Systematic implementation of Individual Development Plans (IDPs) at managerial levels
- Establishing a Futures Literacy Lab to enhance macro-trend analysis capabilities
- Creating a system for assessing and developing leaders' cognitive and personality traits
- Promoting critical thinking and reasoning through the interactive method of semi-theatre

These initiatives have transformed MSC's leaders into empowered, strategic, and thoughtful actors, capable of not only guiding their teams but also leading the entire organization toward a sustainable future.

Organizational Fintech workshop for MSC Managers

Employee performance assessment at MSC

At MSC, the employee performance evaluation system is designed to enhance productivity, foster individual development, and improve organizational effectiveness. This system is based on a comprehensive assessment of performance in two main areas:

- Performance outcomes and expectations: Measuring quantitative and qualitative achievements related to job responsibilities.
- Behavioral expectations: Assessing professional behavior patterns, organizational interactions, and adherence to the company's values and culture.

Employee performance assessments are conducted semi-annually in two stages. First, employees perform a self-assessment, followed by a final evaluation by their direct supervisor. The results are communicated in the form of a performance report through the company's information system and a dedicated employee portal.

Application of assessment results

The results of performance assessments play a key role in HR decision-making and are utilized in the following areas:

- Determining or extending employment contracts
- Compensation and reward systems
- Promotions and career advancement
- Training and career development planning
- Selecting qualified individuals for new roles

Performance assessment system improvement and development measures

To enhance the effectiveness of the performance evaluation system, the following initiatives have been implemented in recent years:

- Revision of behavioral expectations related to performance
- Enhancement of the automated performance management system
- Design and implementation of a performance evaluation model for managers and leaders
- Ongoing measurement of system effectiveness through periodic employee surveys

The performance assessment system at MSC operates with an integrated approach, aligned with other human resource processes such as promotion, training, and compensation. This system plays a key role in the development of the organization's human capital. It encompasses all employees at various organizational levels and systematically evaluates their performance in key areas of work outcomes and organizational behavior.

Employee performance assessment

indicator	unit	2021	2022	2023	2024
Employees whose performance has been assessed	%	99	100	99	97
Average employee performance assessment score	%	85	87	88	87

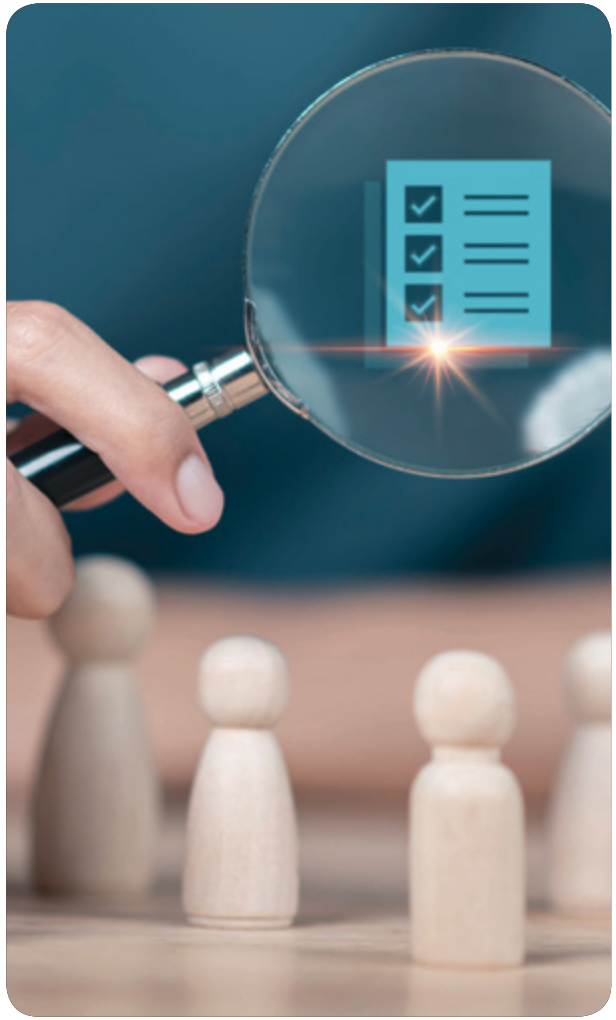
Employee survey

Building a sustainable future requires a deep understanding of the perspectives and concerns of all stakeholders; among them, the voices of employees must be carefully heard. At MSC, we believe that human capital is not only the main driver of organizational transformation but also a valuable source for learning and development.

Therefore, since 2005, we have established a comprehensive system to measure employee satisfaction and engagement, which over time has evolved by leveraging global experiences and international models such as the Hay Group and SERVQUAL.

This system, beyond being an annual questionnaire, has become a strategic tool whose data is used to design overarching human resource objectives, formulate improvement plans, and enhance internal service quality. Mechanization of processes, launching the “Employee Experience” measurement project, and employing qualitative methods such as in-depth interviews have enabled us to gain a clearer and more precise picture of employees’ expectations and feelings, and to design responsive, human-centered, and transformative solutions.

Types of surveys in the field of human capital and organization	
Subject of survey	Implementation time
Employee job satisfaction and engagement	Since 2014 until now
Satisfaction with the quality of human capitals services (QHS) – Perspective of employees	Since 2014 until now
Satisfaction with the quality of human capitals services (QHS) – Perspective of unit officials	Since 2015 until now
Investigation of organizational culture	Since 2009 until now
Effectiveness of organizational communications and communication channels	Since 2015 until now
Identifying values, attitudes, and expectations of MSC employees with an emphasis on generational differences	2021
Meaningful work	2023
Quality of life (Work and Home Campaign)	2021
Health assessment 2	2023
Health assessment 3	2023
Health assessment 4	2023
Safety attitude	Since 2022
Safety culture	Since 2022
Best workplace	Since 2022
Satisfaction with counseling centers	Since 2021



Enhancing job engagement and satisfaction: Investing in the heart of the organization

At MSC, we believe that job engagement is not merely a psychological metric, but a driving force that elevates productivity, creativity, and employee loyalty to a new level. Through a series of targeted initiatives, we strive to create an environment where every individual has the opportunity to flourish, grow, and advance.
Professional development opportunities, access to modern training programs, improved work tools, a healthy workspace design, and support for work-life balance are just some of the mechanisms we employ to foster engagement among our employees. This investment in our human capital leads to organizational growth and sustainable performance.

Quality of HR services: Beyond welfare, closer to experience

In our pursuit of improving the quality of work life, we have gone beyond merely providing welfare. We view the employee experience as a "journey", one in which every stop should bring a sense of satisfaction, value, and motivation.
From cultural and recreational services to financial and athletic facilities, from optimizing transportation to the digitization of administrative processes, all services are carefully designed based on the real needs and expectations of our employees. Rather than taking a one-sided approach, we continuously evolve these services by actively listening to employee feedback.

Grand family morning exercise gathering

Compensation and benefits: designing a fair and motivating package

The compensation system at MSC is built upon professional principles and transformative human resources policies. In this framework, job factors, organizational positions, and individual characteristics are carefully considered in the design of salaries and benefits. However, we have gone beyond basic pay; by developing a dynamic set of financial and non-financial incentives, we aim to simultaneously strengthen both intrinsic motivation and external commitment among our employees

At MSC, compensation and benefits are paid to employees based on the job classification system and aligned with the policies of the Human Resources Transformation Committee. These payments are influenced by the job (such as job group wage), position (such as job difficulty, responsibility allowance), and the incumbent (such as seniority wage).

Furthermore, to increase employee motivation, multiple financial and non-financial approaches have been established in the form of regulations and guidelines, including production bonus, individual production performance bonus, special products bonus, efficiency bonus, suggestion system, transformation projects, transformation awards (top projects, top experiences, top suggestions, productivity awards), research projects, coordination, audit and evaluation, knowledge management, annual general assembly bonus, semi-annual bonus, end of year bonus and special profitability bonus.

In addition, various other benefits and facilities such as loans, welfare benefits, occasion-based payments, welfare amenities, sports facilities, medical insurance, support fund for special diseases, employer's civil liability insurance, life and accident insurance, leaves (annual, sick, maternity, bereavement for first-degree relatives, marriage, unpaid leave), written commendations, and more are provided to improve the quality of life for employees and their families.

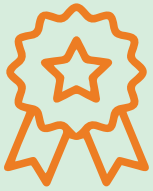
The above-mentioned items, together with salaries and benefits, constitute the employee compensation package. These approaches are continuously evaluated based on organizational conditions and external developments, with necessary improvements identified and implemented. Examples of newly defined improvements in this area include Creating a special products bonus aligned with the strategy of producing special and higher value-added products, Purchasing company shares equivalent to employees' years of service to increase organizational commitment and enhance the monetary value of shares, Allocating part of the bonus in the form of shares to secure employees' future, Incentive plans for marriage and childbirth in line with national macro policies, Incentive plans for employee and family travel including trips to the holy city of Mashhad, travel allowances, granting installment credits, and facilitation of travel for Arbaeen pilgrimage to the holy city of Karbala and Moving towards strengthening non-cash benefits to support families.

This compensation package not only enhances employee satisfaction and quality of life but is also regarded as a strategic tool for retaining and developing human capital. Continuous evaluations and improvements aligned with current conditions keep this system dynamic and responsive.

Overall compensation system structure at MSC

Non-Monetary

- Productivity medals
- Transformation rewards
- Leave
- Letter of encouragement
- Recognition of individuals on various topics (Safety)



Monetary

- Salaries and wages
- Bonuses
- Loans and insurances
- Welfare benefits
- Inventors and innovators rewards

463 Persons
Employees who received parental leave

459 Persons
Employees who returned to work after taking parental leave

6 Persons
Female employees who received parental leave

457 Persons
Male employees who received parental leave

Strengthening organizational culture: building the invisible backbone of the company

At MSC, we view organizational culture not only as a reflection of our shared identity and values, but also as a hidden yet powerful foundation for realizing strategies and sustaining organizational development. Therefore, since 2006, we have taken systematic steps to understand, assess, and enhance this culture.

Assessments conducted using reputable models such as Harrison and Denison led to the identification of dominant cultural tendencies within the company. These studies provided a detailed map of the current organizational culture, an essential basis upon which corrective and reinforcing actions were implemented to gradually shape and institutionalize the desired culture.

One of the most significant steps on this path was the establishment of the Cultural Council, a body composed of the CEO, several vice presidents, and key senior managers. This council, with a participatory approach, is responsible for steering efforts to strengthen the organizational culture and plays a central role in guiding, policy-making, and overseeing cultural programs.

On the other hand, our understanding of organizational culture is not confined to abstract concepts. We embody this culture through the behaviors, attitudes, and daily experiences of newly hired employees. To this end, since 2021, a training course titled “Introduction to Organizational Culture” has been held for new staff. As part of this course, a booklet called “The First 90 Days: A Guide and Daily Journal for New Employees” is provided to help them become familiar with the company’s values and cultural expectations and to support their structured socialization into the organization.

Recognizing the key role of supervisors in transmitting and reinforcing the organizational culture, we also developed a dedicated guidebook for them: “The First 60 Days: A Guide for Newly Hired Employees.” This guide aims to empower supervisors in coaching, performance guidance, and culture-building. It aligns with our human-centered management model based on support, accompaniment, and ongoing feedback.

All these initiatives reflect our core belief: Organizational culture must be built, through awareness, participation, precise tools, and a commitment to continuous learning.

Fostering a culture of collaboration: A shared path toward collective productivity

At MSC, we firmly believe that a culture of collaboration and teamwork is the invisible infrastructure of organizational success. For this reason, we have designed and implemented a diverse set of targeted initiatives to lay the groundwork for embedding this culture.

These efforts begin with the delivery of specialized training courses, programs that help employees acquire and apply key skills in teamwork, effective communication, and collaborative problem-solving. In parallel, intelligent incentive systems and performance scorecards, both individual and team-based, acknowledge and reinforce collective effort and shared achievement.

The annual productivity conference has become an organizational tradition, providing a platform to showcase collaborative achievements and honor the efforts of dedicated employees. This conference offers a space for team successes to be recognized and serves as a fresh source of motivation for continued collaboration.

Additionally, constructive competitions, such as suggestion campaigns, the documentation of experiences, and team-based innovation initiatives, are designed not only to enhance participation but also to plant the seeds of innovation within teams.

To foster this culture, inspiring content is also disseminated: from internal publications and books to special editions that recount stories of collaborative success. These narratives, reflecting a dynamic, cooperation-based culture, help shape the collective mindset of the organization.

The impact of all these efforts is measured using precise tools. Indicators such as satisfaction with collaboration, participation rates in transformational systems, and suggestions per capita serve as guiding lights for the continuous improvement of this journey.

Among the most impactful improvements in recent years has been the implementation of a reward system for special projects and the introduction of non-monetary prizes for top suggestions. These policies are designed to strengthen intrinsic motivation and to honor both team efforts and individual creativity. They contribute significantly to the further promotion of a culture of synergy and collaboration. In MSC's vision, teams are the driving engines of change, and a culture of participation is the lifeblood of sustainable innovation.

Employees as sustainability ambassadors of MSC

At MSC, each individual is seen not merely as an operational force, but as a “Sustainability Ambassador”, a representative who embodies and conveys the company’s culture, achievements, and sustainable values both within and beyond organizational boundaries.

To support this vision, the company has established infrastructures and platforms to facilitate the transformation of employees into active and impactful ambassadors. Structural initiatives include the publication of books and authored articles by employees, presentation of papers at national and international conferences and seminars, training and supporting organizational excellence assessors, and participation in awards such as the National Excellence Award and the IMIDRO Productivity Award.

Organizing Organizational Excellence Tours and Enabling Visits from Other Organizations to MSC’s Successful Practices provides employees with the opportunity to serve as role models and sources of inspiration for other companies. This process not only leads to individual learning and growth, but also contributes to expanding sustainability horizons across the industry.

As part of the “Organizational Brand Management” project, employees’ role as ambassadors of the company’s external image has been defined where their behavior, interactions, and social participation reflect the very identity of the organization.

Moreover, employees act as representatives of MSC’s social sustainability by participating in community events and activities. To support this role, the company has created favorable conditions, provided relevant and effective information, and adopted diverse approaches to enable broad employee participation in social responsibility initiatives.

Participation in humanitarian efforts such as supporting victims of natural disasters, aiding those in need, assisting people with disabilities, sponsoring orphaned children, and helping prisoners with unintentional offenses, reflects the depth of social maturity, empathy, and deeply rooted sense of responsibility in MSC’s organizational culture.

In our vision, sustainability is not merely an organizational goal but a shared human responsibility, one that each employee lives out with a committed heart and meaningful presence.

Company’s anniversary celebration, 2024

4670 Persons
Participants in humanitarian activities

Ambassadors of excellence: Architects of Mobarakeh Steel Group's future

In line with MSC's long-term vision and its pursuit of balanced, sustainable growth across group companies, a structured and purposeful initiative titled "Ambassadors of Excellence" has been designed and implemented. This program, which integrates individual empowerment with organizational transformation, places special emphasis on enhancing employees' professional competencies in areas related to international models of organizational excellence.

The Ambassadors of Excellence program has been developed in three phases, of which two have been fully implemented and the third is currently underway. So far, 15 specialized gatherings have been held among employees from various companies within the group, creating a platform for interactive learning and the exchange of experiences across member companies.

One of the program's most distinctive features is its integration of theoretical knowledge with MSC's real-world experiences. Participants are not only introduced to global frameworks, models, and tools, such as the EFQM Excellence Model, but also exposed to localized challenges, practical solutions, and operational lessons learned throughout MSC's own excellence path. This blended approach resolves ambiguities, fosters inter-organizational synergy, and deepens employees' conceptual understanding of excellence.

The Ambassadors of Excellence group, well-versed in Reference models, skilled in facilitating knowledge transfer, and equipped with modern management tools, plays a pivotal role in embedding a culture of excellence, enhancing processes, and driving continuous performance improvement across the entire group. These ambassadors serve as vital connectors between theory and field application, accelerating organizational learning and fostering a shared language of excellence among MSC's subsidiaries.

Scan this code to see a video introducing this approach

Achievements of the program

- Development of the Excellence Roadmap and facilitation of its implementation
- Establishment of a dynamic network of organizational excellence specialists
- Enhancement of employee awareness and knowledge (10,920 person-hours of excellence concept training and 3,520 person-hours of experience sharing from MSC)

The following table presents the most recent results from the 22nd round of the Organizational Excellence Award, demonstrating significant progress in realizing the Excellence Roadmap:

Achievements of Mobarakeh Steel Group companies in the 22nd round of the Organizational Excellence Award	
Company Name	Recognition Level
Hormozgan Steel Co.	Crystal Trophy
Chaharmahal & Bakhtiari Sheet Metal Co.	Crystal Trophy
International Systems Engineering and Automation Co. (IRISA)	Crystal Trophy
Foolad Sang Co.	Crystal Trophy
Tuka Foolad Investment Co.	2-Star Certificate
Atiyeh Foolad Naghsh-e Jahan Co.	2-Star Certificate
Taraz Steel Co.	2-Star Certificate
Tuka Rail Co.	2-Star Certificate
Tavanavar Asia Steel Industries Co.	1-Star Certificate
Steel Clean Power & Energy Industries Co. (SANAP)	Commitment to Excellence
Amin Teb Sepano Co.	Commitment to Excellence
Mobarakeh Steel Technology & Innovation Development Fund Co. (MSTID)	Commitment to Excellence
Sangan Mining Industries Co.	4-Star Certificate
Sefid Dasht Steel Co.	3-Star Certificate
Foolad-e Metil Co.	3-Star Certificate

Mobarakeh Steel Group's organizational excellence roadmap

Work-life harmony: A foundation for human well-being and organizational sustainability

At MSC, achieving a balance between work and personal life is regarded as a fundamental principle for enhancing employee well-being and attaining socially sustainable development. We firmly believe that striking a balance between professional responsibilities and personal life plays a vital role in improving the physical and mental health of employees, which in turn leads to increased productivity, enhanced organizational performance, and improved employee retention.

With a strong focus on fostering a balanced approach in the workplace, we aim to strengthen our organizational culture, preserve and develop human capital, and ensure the sustainability of a capable workforce. In line with this vision, MSC has designed and implemented a wide range of programs and initiatives to support work-life balance. These efforts extend not only to employees and employees of our contractors, but also to their families, ensuring that everyone benefits from a supportive and well-balanced environment

The grand family morning exercise gathering

The 3rd “+Energy” family games and entertainment festival

The third festival of the “+Energy” Family Games and Entertainment was held with the enthusiastic participation of over 7,000 employees and their families, an event that beautifully portrayed the spirit of togetherness, joy, and the emotional connection between industry and family. The festival featured a wide variety of games and activities, ranging from nostalgic traditional and local games to modern digital and group entertainment. Coinciding with the auspicious birthday of Imam Mahdi (PBUH), a celebratory ceremony was also held during the event.

A side exhibition accompanying the festival provided a platform to support local producers in the field of games and entertainment. By inviting companies offering creative and high-quality products, the event aimed to create an inspiring space for shared experiences and promote awareness of domestic capabilities.

At MSC, we view this event not merely as a cultural initiative but as part of our social responsibility toward the happiness, mental well-being, and quality of life of our extended employee family. Moments like these are invaluable assets that contribute to the human sustainability of the organization.

The 3rd “+Energy” family games and entertainment festival

“Toward the Summits” celebration: A display of solidarity and kindness by the MSC family on Eid al-ghadir

In July 2024, Naghsh-e Jahan Stadium in Isfahan hosted the largest centralized Eid al-Ghadir celebration in the country, titled “Toward the Summits.” The event brought together around 50,000 people, including current and retired employees of MSC, contractors, and members of the Mobarakeh Steel Group, along with their families. This grand gathering served as an opportunity to strengthen unity and express appreciation for the efforts of the greater Mobarakeh Steel family.

In his speech at the event, the CEO of MSC emphasized: “The phrase ‘Mobarakeh Steel family’ is often repeated, and the main reason is that every single member of this family plays a role in the company’s achievements and corporate events.” Events like this not only reinforce organizational culture but also provide a platform for recognizing both individual and collective accomplishments. The celebration uplifted morale, boosted motivation, and reminded employees that their dedication is valued and appreciated.

The “Toward the Summits” celebration stood as a symbol of solidarity, kindness, and social responsibility among the Mobarakeh Steel family. With the enthusiastic participation of its members, the event reflected a strong sense of unity and cohesion.

“Toward the Summits” celebration in Naghsh-e Jahan Stadium

10,000 steps to happiness: Exercise, health, and togetherness

On a vibrant and energetic day beneath the June sun and among the lush trees of Shahid Beheshti Camp in Abrisham City, more than 10,400 employees of MSC and their beloved families came together to take part in the Grand Morning Exercise Gathering, an event held under the slogan “Exercise, Health, Productivity”, aimed at strengthening the body, soul, and human connections.

At MSC, we believe that health and vitality are invaluable assets, assets that, when aligned with productivity, can drive the heartbeat of the organization stronger than ever. This gathering was not merely a sporting event; it was a celebration of life. An effort to embed a culture of fitness, family joy, and social bonds among those who are shaping the future of this land. Organizing such gatherings is part of our journey toward creating a human-centered, dynamic, and high-energy work environment within the heart of the industry, a path that begins with movement and leads to well-being and collective growth.

“10,000 Steps to Happiness” gathering

“Hubble” talent discovery festival

In line with strengthening human capital and enhancing the sense of belonging within the greater Mobarakeh Steel family, the “Hubble” Talent Discovery Festival has been designed and implemented. Going beyond the workplace, this festival creates an inspiring and supportive platform where employees, their spouses, and children can showcase their skills and talents.

“Hubble” is not merely a cultural event; it is an effective tool for uncovering hidden potential, creating equal opportunities, and fostering stronger connections between the organization and the families of its employees. The thematic diversity of the festival, spanning from art and creativity to technology and practical skills, reflects the company’s appreciation for the variety of talents within its human resources. Through professional evaluation of submissions and inviting selected participants to cultural and internal programs, MSC seeks to provide fertile ground for the emergence and growth of these talents. This initiative reflects the organization’s commitment to sustainable human capital development and the promotion of a culture of meritocracy and inclusive participation.

“Hubble” talent discovery festival

Golden summer for the children of MSC

The 2024 summer enrichment program was held with the enthusiastic participation of over 1,500 children of MSC employees at the Ferdows Sports Complex. Designed with the support of top provincial coaches, the program aimed to foster the physical, mental, and social development of the next generation of the Mobarakeh Steel family.

At the end of the program, 1,506 young athletes were awarded gold medals and sports certificates, symbols of appreciation for their effort and motivation to grow. In collaboration with Foolad Mobarakeh Sepahan and Sepahan Novin sport clubs, a mechanism has been established to identify athletic talents among employees' children, creating even greater opportunities for nurturing their sports potential. Currently, 3,500 of these future leaders are active in sports academies and proudly represent MSC in national competitions.

Summer enrichment program for employees' children

Girls' day celebration: A manifestation of love within the MSC family

At MSC, we firmly believe that human capital is the beating heart of the organization — and family is its most deeply rooted source of support. With a human-centered and profound perspective on the role of family in employee well-being, we strive to create an environment where joy, vitality, and emotional bonds coexist meaningfully with industrial productivity.

In this spirit, the Girls' Day Celebration was held with great enthusiasm and wide participation from the MSC family. Centered on strengthening family values and promoting a spiritual view of the status of daughters, the event went beyond a typical occasion, becoming a heartfelt reminder of the compassion, empathy, and emotional connections that keep the spirit of family alive at the heart of industry.

With the strategic outlook of MSC's senior leadership on the importance of family, culturally rich and joyful events such as national and religious celebrations have found a special place in our organizational programs. The strong presence of families in these events demonstrates that professional growth and personal fulfillment are not separate paths, they are mutually reinforcing and deeply intertwined.

Beyond their cultural significance, such celebrations are also an opportunity to reflect the Islamic view of daughters as a source of divine mercy. At MSC, we endeavor to bring this enlightened perspective into the organizational space, moving collectively, through meaningful celebrations, toward a more human-centered, vibrant, and family-oriented workplace.

Girls' day celebration

To live, to build: Sports at the heart of MSC

At MSC, we believe that a healthy, dynamic, and vibrant human capital is the foundation for achieving balanced and sustainable development. As such, promoting physical and mental well-being is not merely a welfare initiative, but a core element of our overarching sustainability strategy.

We see sports as a powerful means to enhance well-being, foster resilience, promote harmony between work and life, strengthen organizational cohesion, boost productivity, and prevent occupational burnout. Our sports programs are designed in a structured, comprehensive, and family-oriented manner to ensure that all employees and their families can benefit. This thoughtful approach has not only helped cultivate a culture of health and wellness within the organization but also significantly contributed to our commitment to social responsibility and the development of sustainable human capital.

To further this vision, MSC has established employee sports teams across various disciplines, enabling more professional and purposeful participation in sports. These teams, composed of passionate and talented employees, represent MSC in various competitions, especially at the national level. They have proudly achieved commendable results in disciplines such as swimming, volleyball, futsal, taekwondo, wrestling, and others, across both men's and women's categories. These accomplishments are not only a source of pride for the company and its people but have also played a significant role in fostering team spirit, individual motivation, and a stronger sense of organizational identity.

MSC named Iran's top company in labor sports

At MSC, sports are not considered a secondary activity but a strategic pillar, the fourth pillar of sustainable human resource development. In its journey to promote employee well-being and enhance organizational productivity, the company has adopted a scientific and forward-looking approach: expanding athletic infrastructure, implementing structured sports programs, and embedding a culture of participation and vitality into its organizational fabric through smart management.

As a result of this purposeful journey, MSC has proudly earned the prestigious title of "Top Company in Labor Sports" in Iran. This achievement stands as a symbol of the company's deep commitment to the physical and mental well-being of its employees and serves as an inspiring benchmark for the broader industrial sector.

Beyond the title itself, this success has elevated employee morale, strengthened organizational identity, and sharpened the company's vision for long-term sustainability.

MSC men's swimming team wins championship in IMIDRO competitions

MSC women's team won the Isfahan Province Women's Labor Athletics Competition in 2024.

MSC men's team wins the Championship in the Isfahan Province Workers' Taekwondo Competition in 2024

MSC men's team wins the National Workers' Judo Competition in 2024

The championship of MSC women's swimming teams (Teams A and B) in the IMIDRO competitions in 2024

A safe and healthy workplace:The cornerstone of organizational sustainability

At MSC, we believe that a safe and healthy work environment is the cornerstone for achieving sustainable growth, job satisfaction, and organizational excellence. Therefore, the health and well-being of employees is regarded not merely as a moral responsibility, but as a strategic priority within our planning frameworks. By adopting a preventive and integrated approach to safety, we are purposefully implementing initiatives such as the design of ergonomic workspaces, the execution of comprehensive health and medical programs, and the promotion of a safety culture, in order to create an environment in which employees can work with confidence and high motivation. A safe workplace not only reduces the risks of accidents and injuries, but also strengthens trust, motivation, and employee loyalty, factors directly linked to increased productivity and human capital retention. Furthermore, our attention to mental health, enhancing work-life balance, and providing access to health-focused services helps to build a positive environment in which individuals feel valued and capable of thriving.

To realize this vision, MSC has developed three five-year safety enhancement plans, based on a holistic approach to safety management. These programs have been designed with the active participation of central safety experts, local safety advisors, and specialists in production and maintenance, and are aimed at providing a systematic analysis of current conditions, root cause identification, and the definition of improvement projects, all with the goal of building a safe, sustainable, and enabling environment for the greater MSC family.

Safety management system at MSC

At MSC, we place the human being at the heart of our organizational worldview, where every step toward excellence is defined by the beating hearts of our employees. Our people are not merely implementers; they are the architects of a safe, healthy, and sustainable future.

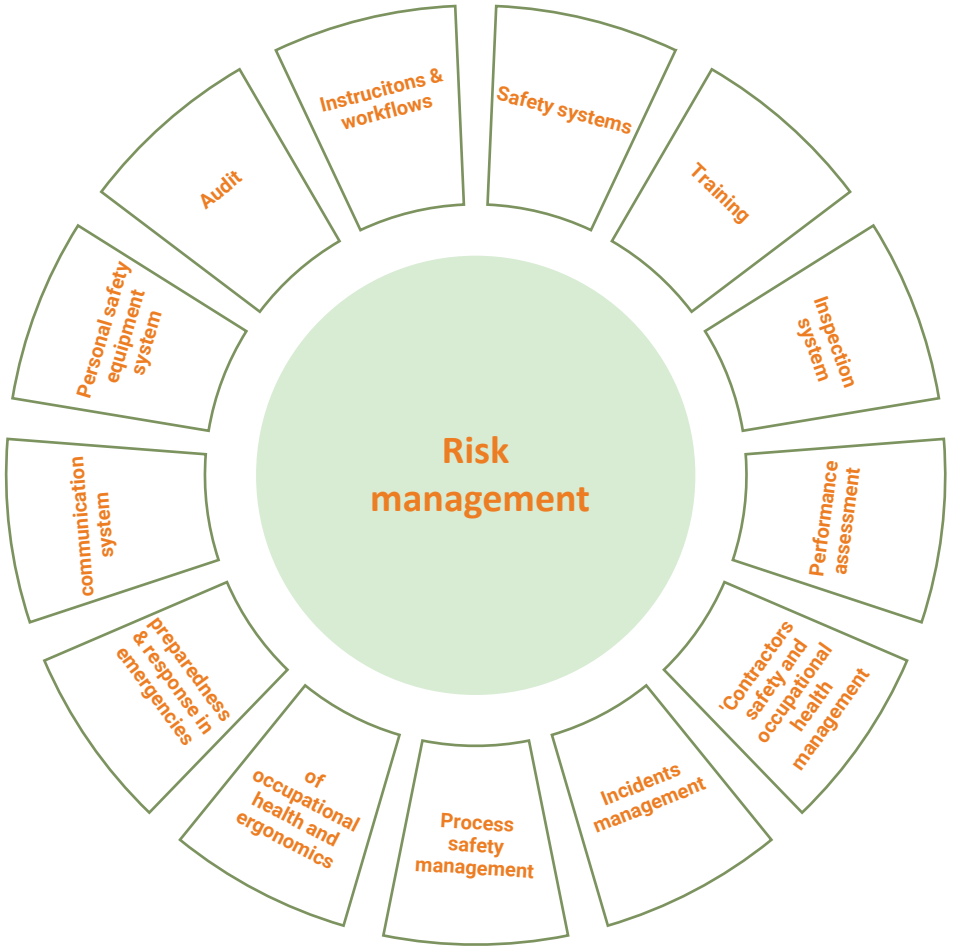
Guided by the discourse of the “Excellence Path”, we are committed to safeguarding the physical and mental well-being of our employees, because we firmly believe that their welfare is the foundation of lasting efficiency and the source of organizational innovation.

Our purpose is clear: achieving the core value of “safety and quality”

To this end, MSC has established its risk management-based occupational health and safety system, an integrated system that goes beyond legal compliance and adheres to international standards such as ISO 45001 and ISO 45005 to ensure the health and well-being of its employees.

From strict compliance with occupational health and safety regulations, to implementing safe work systems during the pandemic; from continuous monitoring of workplace risks, to preventive training and actions, every effort aligns with a shared goal: sustainable, incident-free production; a path toward “Zero Accident.”

We understand that process safety is not just a barrier against hazards, it is the foundation of resilience, asset protection, and business sustainability. That is why, with vigilance, knowledge, and commitment, we are building a future where safety is not a choice, but a culture.



MSC's occupational safety management system

A roadmap to a zero-incident future: Implementing Process Safety Management (PSM) at MSC

In an industry as complex and large-scale as MSC, Process Safety Management (PSM) is not merely a regulatory requirement, it is a strategic imperative for preventing process-related incidents and mitigating their potential consequences.

Moreover, in light of increasing demands related to crisis management and passive defense in facilities with process operations, MSC has taken decisive steps toward establishing a robust PSM system.

From roadmap development to launching a pilot study project

As part of this strategic initiative, a comprehensive roadmap for implementing Process Safety Management (PSM) was developed, and the "Process Safety Management Study & Training Phase" project was officially launched. In this phase:

- Opportunities for improvement in the field of process safety were identified
- 15 units with critical process operations were prioritized
- For five selected units, advanced hazard identification and risk assessment studies were conducted using specialized methodologies

Selected units for specialized hazard identification and risk assessment studies, along with applied methodologies

1. Electric Arc Furnaces (EAF)
- HAZID Study
- HAZOP Study
- Risk Assessment using the Bow-Tie Method

2. RH-TOP Unit
- Process Hazard Identification via HAZOP
- Risk Assessment using LOPA
- Determination of the Required Safety Integrity Level (SIL)

3. Utilities Distribution Unit
- HAZID and HAZOP Studies
- Consequence Analysis

4. Box Annealing Unit
- HAZOP Study
- LOPA for Determining the Safety Integrity Level (SIL)

5. Galvanizing and Color Coating Unit
- HAZOP Study
- LOPA for Determining the Safety Integrity Level (SIL)

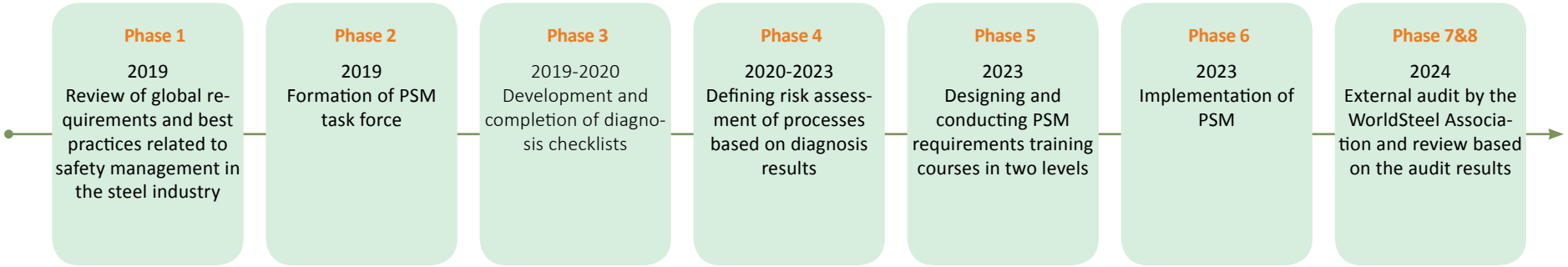
Training: The foundation for system implementation

Alongside technical activities, training has been emphasized as a key enabler for institutionalizing Process Safety Management (PSM). In recent years, the following initiatives have been undertaken in this regard:

- Three foundational training courses were held for more than 400 employees, including specialists, supervisors, department heads, and managers of the company.
- Among them, 100 selected participants were identified for advanced training programs, aiming to prepare them for the practical implementation of the PSM system within the organization.

Through this project, MSC has taken a major step toward safeguarding human capital, enhancing operational resilience, and achieving safe and sustainable production, a vision in which "process safety" becomes a deeply rooted organizational culture.

MSC›s Roadmap for Implementing PSM



Moving toward zero harm at MSC: Institutionalizing safety, from strategy to metrics

At MSC, achieving the "Zero Harm" vision is not merely a slogan, it is the outcome of a step-by-step implementation of a systematic, data-driven, and participatory approach to occupational health and safety.

By utilizing a variety of assessment tools, we continuously monitor the effectiveness of safety measures, ensuring alignment with our long-term goals.

Continuous Safety Performance Evaluation

The effectiveness of safety strategies is measured through the following mechanisms:

- Internal and third-party audits
- Targeted safety inspections
- VIP site visits (both domestic and international)
- Ongoing monitoring of key performance indicators (KPIs)

Improvement of indicators through long-term planning

The improvement of the indicators for Frequency Rate (FR1), Severity Rate (SR), and Fatality Frequency Rate (FFR) has been the result of:

- Learning from past incidents
- Successful implementation of two comprehensive five-year safety enhancement programs (2012 to 2021)

Key actions on the path to safety enhancement

Over the years, extensive actions have been taken in the pursuit of achieving Zero Harm, including:

- Holding regular safety improvement meetings with senior managers
- Ongoing field inspections
- Targeted training and safety culture promotion across the organization
- Mechanization of safety systems and incident recording
- Performance evaluation of units, employees, and contractors
- Holding three-minute safety sessions at the beginning of each shift
- Producing visual content such as infographics and motion graphics on environmental hazards

Employee participation in occupational health

With the development of a workflow to encourage participation in periodic medical examinations, a positive and sustainable trend has emerged in employee participation indicators. Complementary actions in this regard include:

- Conducting off-site medical examinations for managers, supervisors, and foremen
- Holding health education courses concurrent with examination days

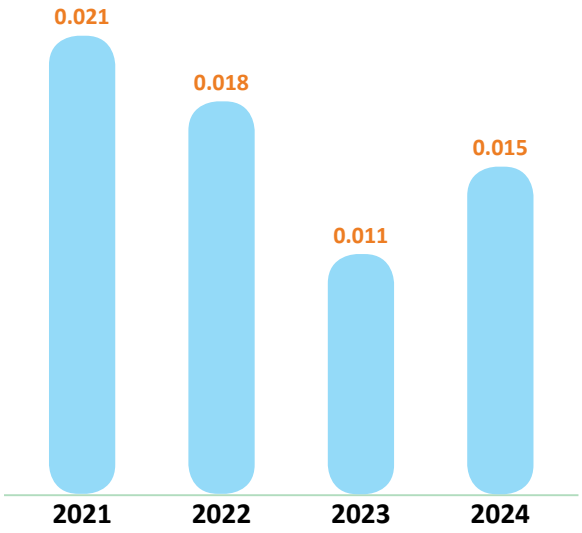
MSC's global standing in industrial safety

According to reports from the World Steel Association, MSC has achieved occupational safety indicators below the global average, including:

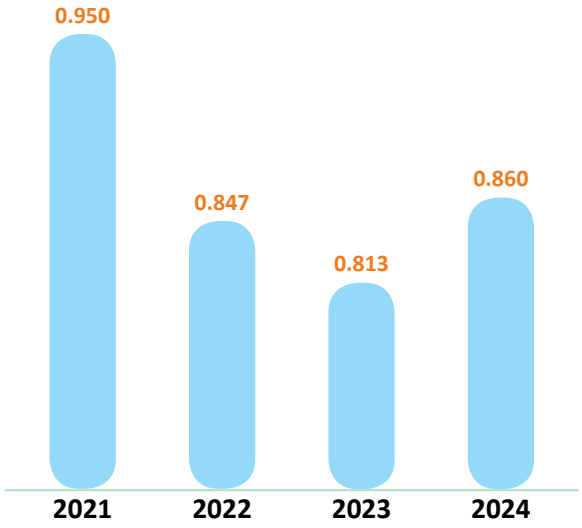
- FR (Frequency Rate or Lost Time Injury Frequency Rate - LTIFR)
- SR (Severity Rate)
- FFR (Fatality Frequency Rate)

These results have established MSC's position as a global benchmark in steel industry safety, positioning it as a model for benchmarking.

Safety performance					
Indicator	unit	Until 2021	Until 2022	Until 2023	Until 2024
Days without fatal accidents	day	2242	1876	1511	1146
Fatality Frequency Rate (FFR)	Number	0	0	0	0
Indicator	unit	2021	2022	2023	2024
Number of near misses (recorded in the Green Card system)	Number	53919	55456	17663	13963



Severity Rate (SR) of Incidents



Frequency Rate (FR) of Incidents

Comprehensive employee health program

In line with its commitment to social responsibility and dedication to building a brighter future for all stakeholders, MSC has designed and implemented a comprehensive employee health program with a systematic and forward-looking approach.

This program has been developed through strategic analyses, a structured review of influencing components, and with the active collaboration of specialized departments such as HSE, General Services (including sports and nutrition), Training and Human Capital Development, and other relevant sectors.

The framework of this program is built upon four foundational pillars:

1. Occupational health
2. Public health
3. Work environment health
4. Mental health

Based on this framework, specialized actions have been defined and communicated to all organizational units. One of the key achievements of this program has been the design and implementation of a mechanized system for scheduling and appointment booking of employees' annual medical examinations. This system, taking into account legal requirements and work-life balance considerations, organizes the examination schedule at the beginning of each year. All employees undergo regular occupational health checkups and tests, and through the analysis of health risk factors, an index titled "Disease Risk Factors" is calculated and continuously monitored.

This program is not only continuously evaluated through surveys and performance indicators, but is also accompanied by the design and implementation of effective interventions, including:

- Implementation of a participatory ergonomics program to reduce musculoskeletal disorders
- Development of guidelines to combat tobacco use
- Ergonomic assessment of office equipment prior to procurement
- Launch of structured educational sessions to promote public health
- Establishment of a specialized ergonomics laboratory
- Execution of research projects on shift work systems
- Implementation of protective programs for hearing and respiratory health in the workplace
- Pilot implementation of hazardous chemical labeling system (GHS)
- Utilization of specialized methods for identification and assessment of health risks
- Design of an electronic specialist referral system for occupational health examinations

In its next innovative steps, the comprehensive health system of MSC has been designed, focusing on

three key pillars:

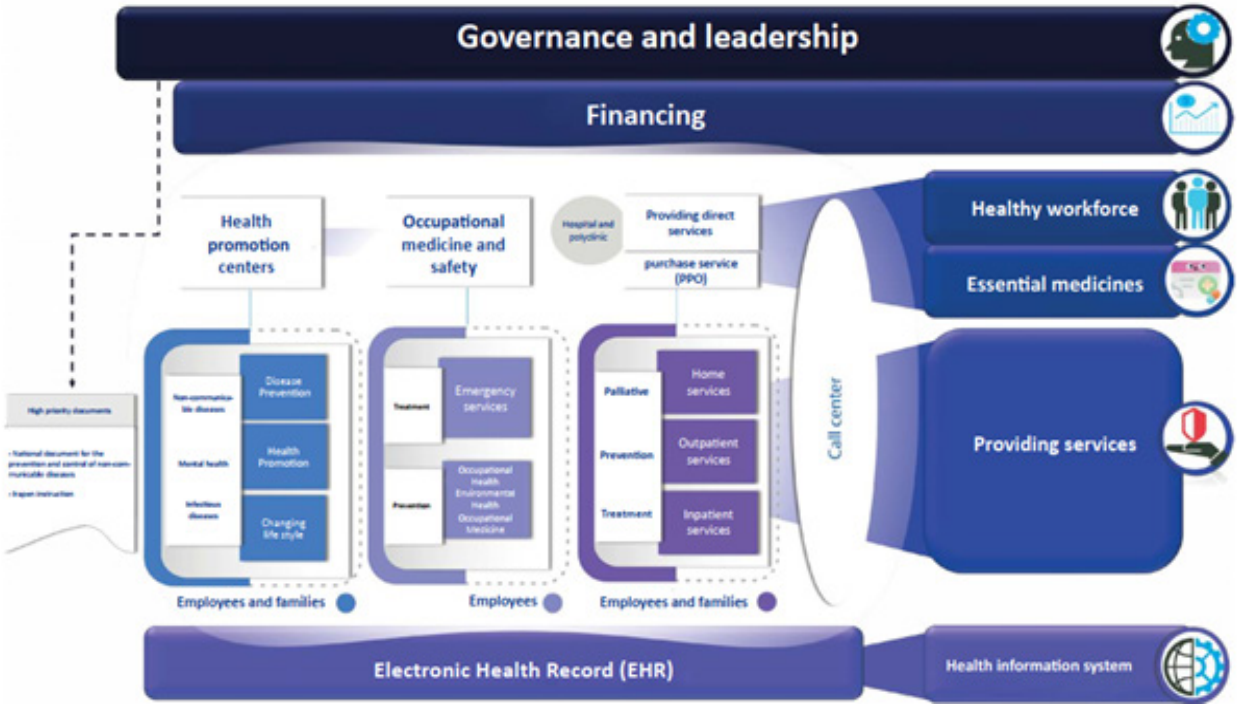
1. Occupational health and industrial medicine services
2. Health promotion
3. Medical services

This system is founded on a holistic approach to health, prioritization of unmet needs, integration of services and care, and the smart utilization of national health infrastructure.

Key strategic foundations of this system include:

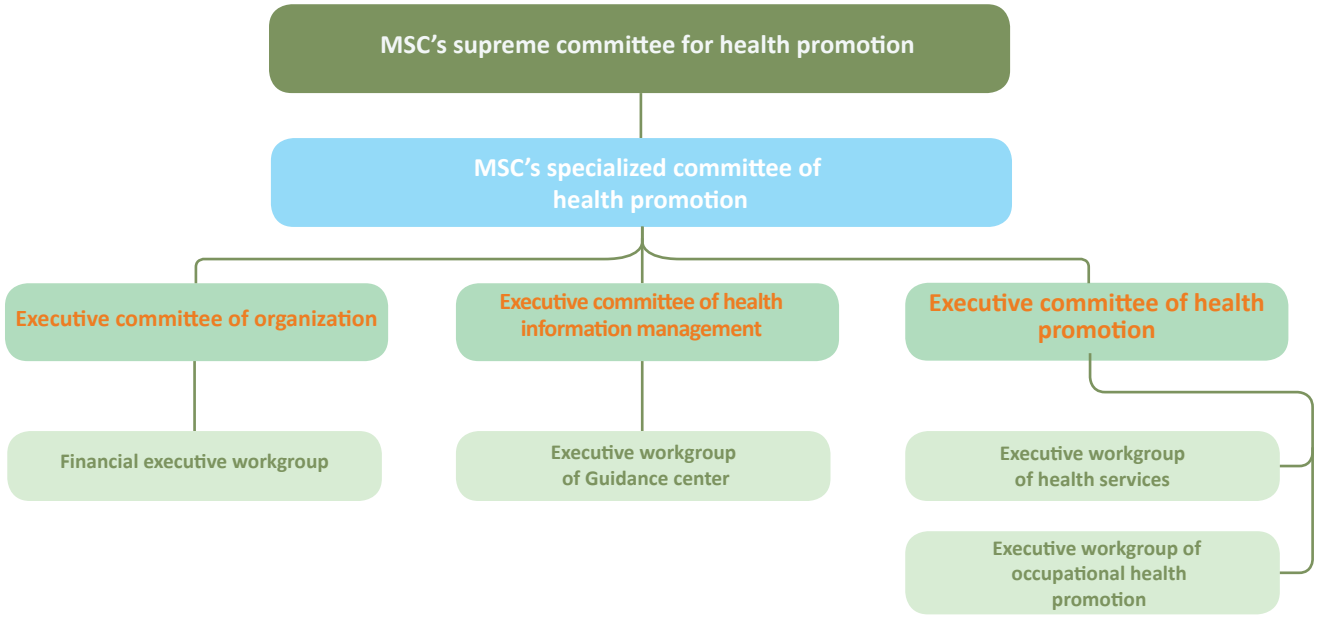
- Creation of an Electronic Health Record (EHR) for each employee
- Establishment of a Health Coordination Center to serve as the central hub for aligning various service domains

Additionally, a revision of the company's health index calculation method is underway to improve the precision of evaluating the outcomes of health-driven initiatives.



MSC's comprehensive employee health program

At the governance level, the responsibility for health policymaking in the company has been assigned to the Supreme Committee for Health Promotion, which is formed at the level of the CEO and the Council of Vice Presidents. Supporting this, three executive committees under the titles of "Committee of Organization", "Committee of Health Promotion", and "Committee of Health Information Management" operate as the technical arms of this structure. Final policies and objectives are also communicated as regional health guidelines to the executive committees based in the administrative and production areas. These committees, with the presence of area managers, department heads, and employee participation, are responsible for implementing the programs. One of the latest ongoing initiatives is the prediction of health status and the clustering of the target population for health-oriented interventions, which is being carried out in cooperation with universities and expert groups. This comprehensive program is a concrete manifestation of MSC's health-oriented, knowledge-based, and participatory approach to promoting employee health, a firm step toward organizational excellence and ensuring future sustainability.



Occupational health & safety approaches aimed at promoting the health & safety of employees	
Improvement of workplace conditions	● Identifying, measuring, assessing and controlling harmful factors in the workplace ● Performing occupational health and safety inspections ● Defining and implementing corrective projects to improve workplace conditions
Enhancement of personnel general health	● Planning and implementation of pre-employment and periodical medical examinations of employees ● Pursuing the job suitability of employees ● Training and culturalization of employees according to the self-caring principles
Promotion of ergonomics conditions	● Identifying and assessing the risk factors of the ergonomics of the workplace ● Collaborative ergonomics intervention program with the aim of eliminating or reducing skeletal and muscular disorders ● Ergonomics assessment of office supplies before purchase ● Evaluation of the ergonomics of transportation services

MSC on the path to sustainable community development

As one of the pioneers in the steel industry in the region, MSC, with a deep understanding of responsibilities beyond industrial production, has consistently sought to play a purposeful and strategic role in achieving sustainable development. The company believes that sustainability is a multifaceted concept, intertwined with the future of the organization, the environment, society, and future generations. Accordingly, the formulation of clear and coherent strategies in the field of social responsibility has been established as the foundation of its movement toward a responsible future. MSC's commitment to sustainability is not limited to optimizing production processes and reducing environmental impacts. Rather, this commitment is manifested on a deeper level through continuous investment in human capital, intelligent support for local communities, sustainable management of natural resources, and the promotion of a culture of responsibility both within and outside the organization.

The realization of these lofty objectives necessitates the existence of a precise roadmap and comprehensive strategies that are aligned with the organization's mission, the expectations and concerns of stakeholders, and global developments in the social, environmental, and economic arenas. In this context, MSC has developed a well-defined framework through which it has articulated its social responsibility domains and strategies, and it is systematically and coherently striving to implement its indigenous CSR model. This model not only contributes to the integration of efforts across various fields of social responsibility, but also serves as a foundation for the generation of enduring value for society and future generations. Furthermore, the establishment of such an approach has enhanced the company's stature at both the national and international levels and has deepened stakeholders' confidence in its human-centered mission. The conscientious course that MSC has embarked upon can only unlock promising horizons for inclusive and balanced development through the continual formulation, revision, and effective execution of social responsibility strategies. This course is the very intersection of sustainable profitability, social commitment, and ethics-driven governance.

Social responsibility focus areas and strategies at MSC

In line with its commitment to playing an effective and responsible role in sustainable development, MSC has consistently sought to define and implement its social responsibilities in a systematic, purposeful, and environmentally responsive manner. To this end, the company has taken analytical and targeted steps toward formulating its social responsibility strategies, with a deep understanding of the needs and expectations of key stakeholders, including local communities, regulatory bodies, and supervisory organizations.

This process has been carried out through a participatory approach and multilayered analyses, encompassing a thorough examination of the challenges and priorities within the social responsibility domain, benchmarking and comparative studies of the successful practices of leading global corporations, and alignment with legal requirements as well as national and international standards. As a result of these efforts, MSC has succeeded in outlining a clear and forward-looking vision for its social responsibility agenda.

Within the framework of this responsible roadmap, six key focus areas of social responsibility have been defined as the main pillars of intervention and action. Based on these domains, nine specialized strategies have been formulated to guide the company's initiatives and programs. This structure not only ensures coherence and alignment across MSC's diverse social initiatives but also enables effective monitoring, outcome evaluation, and continuous improvement of its social approaches.

This strategic system reflects MSC's responsible outlook as a learning, accountable, and transformative organization, one that views sustainable development not as a slogan, but as a shared responsibility and a fundamental necessity in shaping a better future for both society and industry. Our social responsibility focus areas and strategies are:

1. Education, skills development, and empowerment of future generations

Objective: Enhancing the region's and the nation's human capital through specialized education, skills strengthening, and support for entrepreneurship.

Related Strategies:

- Education, skills development, and entrepreneurship enhancement for future generations
- Development of volunteer initiatives (in education and knowledge transfer)

2. Health, vitality, and quality of life enhancement

Objective: To improve the physical, mental, and social well-being of the community, promote public vitality, and support healthy lifestyles.

Related Strategies:

- Promotion of public health and vitality
- Support for professional sports alongside the cultivation and development of promising talents

3.Culture, arts, cultural heritage, and tourism

Objective: To preserve and promote Iranian-Islamic culture, support the arts, safeguard cultural heritage, and strengthen sustainable tourism.

Related Strategies:

- Support for culture, arts, cultural heritage, and tourism
- Support for artists

4.Social responsibility in crises and emergencies

Objective: To ensure the company's active and effective presence during crises, natural disasters, and emergencies, acting as a responsible and supportive institution within the community.

Related Strategies:

- Supporting the victims of natural disasters and unexpected incidents

5.Environment, energy, and resource sustainability

Objective: To reduce the environmental impact of operations, enhance energy efficiency, preserve natural resources, especially surface runoff and groundwater, and move toward sustainable development.

Related Strategies:

- Environmental protection and improvement of energy efficiency and consumption management

6.Community engagement, local care, and regional development

Objective: To enhance engagement with the community and strengthen the social and economic resilience of local and regional populations.

Related Strategies:

- Care for local and regional communities
- Developing communication and engagement with society

This focus includes fostering mutual and lasting engagement between the company and its surrounding communities to create synergy, trust, and social participation; contributing to the social development and empowerment of local populations; generating employment and strengthening regional economies (particularly in vulnerable areas); playing an active role in improving public safety, urban order, and social harmony; supporting the development of urban and rural infrastructure; contributing to the creation of educational spaces in underprivileged areas; and promoting public health and environmental hygiene.

The Story of Foolad Sang Mining Co.

Construction of an underpass and overpass at the entrance of Foolad Sang Mining Company

In line with enhancing traffic safety and improving transportation infrastructure, Foolad Sang Mining Company, a subsidiary of the Mobarakeh Steel Group, has undertaken the construction of an underpass at the company's entrance, located at the intersection with the heavily trafficked Mobarakeh–Borujen roadway. According to the schedule, this project will be operational by September 2025.

Situated at kilometer 25 of the Mobarakeh–Borujen road, this route is one of the region's key and busiest arteries, connecting two major industrial areas: Isfahan and southern Iran (Ahvaz). The high volume of traffic, especially frequent heavy vehicle passage, has made the implementation of safety measures imperative.

Key project objectives

- Enhance the safety of movement for employees and drivers
- Reduce accidents and human casualties
- Streamline traffic flow and decrease congestion points
- Enable faster response times for emergency services
- Develop regional transportation infrastructure

Environmental benefits of the project

- By reducing vehicle stops at the intersection, emissions of pollutants (CO, NOx, PM) decrease
- Smoother vehicle flow leads to reduced traffic-related noise pollution
- Eliminating frequent stops optimizes fuel consumption in vehicles
- Traffic control and accident reduction help minimize damage to adjacent agricultural lands

Social benefits of the project

- Enhanced employee safety and reduction in road-related incidents
- Lower logistics costs and improved efficiency in mineral transportation
- Improved access to emergency services such as ambulances and firefighting units
- Reinforcement of the company's commitment to Corporate Social Responsibility (CSR) and regional sustainable development
- Strengthened public trust and elevation of the company's industrial brand image

This initiative exemplifies the successful integration of infrastructure development in local communities with social and environmental responsibility. Beyond improving employee safety and supply chain efficiency, it reflects the company's firm commitment to sustainable regional progress

Creating hope through the development of sustainable community

In our view, MSC is more than just a factory; its heartbeat pulses within the heart of the community. Its breath is intertwined with the rhythm of lives that, for years, have walked this demanding yet hopeful path of development alongside us. We see ourselves as part of the community, not apart from it. This sense of coexistence with the people and participation in building a shared future forms the essence of our social responsibility.

Throughout the years, we have strived to go beyond construction and industrial mechanisms to listen to the voice of the community, to understand the true language of people's needs, and to walk with them, not for them. We believe that development without the people's participation, no matter how costly, is rootless. That is why, from the very beginning, along with the establishment of the factory, the seeds of social responsibility were also sown into the soil of the region.

We have stood beside our local communities, not for temporary charity, but for enduring empowerment. Our commitment has never been about short-term acts of benevolence, but about fostering lasting empowerment. We have worked to ensure that people are not merely recipients of services, but partners in progress. At the heart of this approach lies the Regional Development Plan across seven counties, documents grounded in face-to-face dialogue with communities, shaped with the input of local scholars, and rooted in indigenous capabilities. These documents are not abstract prescriptions; they are the embodiment of people's hopes and aspirations. Our role has simply been to facilitate their realization.

In recent years, MSC has launched an expansive and purpose-driven regional development program. So far, this initiative has reached seven counties in Isfahan Province, leading to the creation of tailored development and prosperity plans for nearly 100 villages. These plans are the product of direct field engagement with residents, local experts, and community representatives, not prepackaged models imposed from the outside. By initiating the first wave of projects, the company has sparked development and entrusted the rest of the journey to the people themselves, people who now stand not merely as beneficiaries, but as the driving force behind transformation.

The outcome of this approach transcends construction and statistics. This is a story of hope of 431 sustainable, purpose-driven jobs created over the past three years, not as temporary interventions, but as lasting opportunities. It is the story of 55 development projects initially funded by MSC, which inspired local communities to invest over 770 billion Rials of their own capital into revitalizing their villages. In every village, we prioritized one key project, provided initial funding, and left the continuation to the people themselves. This has led to true sustainability actions rooted in the will and ownership of the community.

Today, MSC's approach stands as a homegrown model of corporate social responsibility, a model founded on knowledge, participation, and a genuine commitment to people. It is a model soon to be introduced on a national scale. In this vision, the company is no longer merely a steel producer, it is a creator of a brighter future for those living in its shadow. A future where industry and society move forward hand in hand, in harmony, driving the rhythm of progress together.

MSC, through this experience, has found a meaning far beyond mere production. We stand alongside local communities, empower them, and build the future together. Every step we have taken within the heart of the community has taught us that true service flows from humility; and lasting success is possible only in the shadow of mutual empathy and trust.

If today this path is spoken of, it is not for boasting, but to record an experience that may inspire others as well. Ultimately, the mission of industry is not only to shape steel but also to foster welfare, hope, and human dignity.

MSC's new social responsibility model: from direct intervention to sustainable empowerment of local communities

MSC has embarked on a new path in social responsibility, one rooted in extensive experience and a development-oriented perspective, focusing on the empowerment of local communities and the establishment of sustainable infrastructure in target regions. Over the past two years, in collaboration with the knowledge-based accelerator "Rasta," MSC has implemented a pioneering model of social responsibility in Isfahan Province. This model shifts the focus away from one-off financial support or isolated aid, and instead emphasizes "structural transformation within the local ecosystem", a transformation made possible through institutional capacity-building, education, and the active participation of communities in the development process.

In this model, during the year 2024, 23 Advanced Rural Centers were established across various regions of the Mobarakeh and Lenjan. These centers not only serve as hubs for synergizing local capacities, but also act as the primary platforms for formulating and implementing "Development Progress Documents" tailored to each village. As part of this initiative, development roadmaps were drafted for all 23 villages. In parallel, Rasta's Development Studies Unit conducted comprehensive research across the region to ensure that future planning is grounded in precise data and a deep understanding of local realities.

This innovative development model is built upon identifying core challenges and collaboratively designing and executing solutions with the direct involvement of local experts across various sectors—including economy, health, media, infrastructure, culture, and education—all with the goal of enhancing the quality of life in each community.

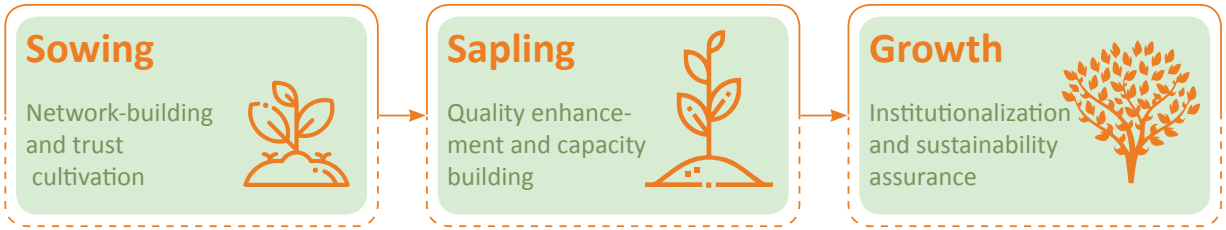
The development process in this framework unfolds in three sequential phases, named Sowing, Sapling, and Growth, each phase carrying its own distinct purpose and strategic mission.

In the Sowing phase, the primary focus is on network-building and cultivating trust among local stakeholders. During this stage, a local facilitator is selected, and key actors across cultural, economic, and social domains are identified. Simultaneously, in-depth studies are conducted to examine the current state of the city or village, forming the basis for locally tailored Development Roadmaps aligned with the community's specific characteristics.

The Sapling phase centers on capacity-building and enhancing the quality of interventions. Guided by a systematically designed issue-mapping framework, the actors in collaboration with the Rasta institute take charge of designing and implementing operational programs aimed at addressing the identified challenges in their region.

In the Growth phase, the emphasis shifts to institutional consolidation and ensuring long-term sustainability of the efforts. The key objective here is to empower the County's Final Steering Council, both in identity and legal status, so it can function as a credible, enduring intermediary between the community and higher-level decision-making and governance structures.

This model, rooted in genuine participation and structural empowerment, lays the groundwork for a self-propelled and sustainable development trajectory within local communities



Over the past two years, MSC has made it one of its primary goals to develop and implement a new, purposeful, and problem-oriented model for fulfilling its social responsibilities. In pursuit of regional advancement and drawing on both domestic and international experiences, the company has worked to operationalize this model. What we are witnessing today is the unveiling of development and prosperity profiles for 16 villages in Mobarakeh and 7 villages in Lenjan. A significant achievement, made possible through collaboration with the Rasta Development Group is that local development hubs in these target villages have been established by the local people and elites themselves. Moreover, the needs and priorities of each village have been studied and identified by these same communities and centers, with the aim that the solutions also be driven by the people.

MSC's role focuses on training, empowerment, and supporting priority initiatives identified within the regional issues framework. Throughout every project, the company has sought to accelerate and facilitate implementation through targeted and effective capacity-building programs. In this entire process, the primary responsibility lies with the people themselves; they are the ones who drive progress. MSC has contributed to the implementation of these projects based on the frameworks it has committed to in the field of social responsibility, and strives, first and foremost, to fulfill its role properly through facilitation and support.

A charter for a better tomorrow: A joint step by MSC and the people toward rural development

In the journey toward national advancement, sometimes a single signature can mark the beginning of a new chapter, one in which industry, local communities, and regional management join forces to shape a brighter future for rural areas. Through the initiative of MSC and in partnership with the development-oriented Rasta Group, the first official "rural development charter" was unveiled in the counties of Mobarakeh and Lenjan, a charter signed not only on paper, but in the hearts of the people.

In this ceremony, members of parliament representing the two counties, along with the CEO and senior executives of MSC, local governors, and other regional officials came together to endorse this document signaling their joint commitment to a sustainable, people-centered path of development.

This charter is not merely the result of an administrative decision; rather, it stems from a deep understanding of local potential, the necessity of empowering communities, and a firm belief in this principle: lasting prosperity is not possible without people's participation and industry's collaboration. This symbolic move is yet another testament to MSC's commitment to balanced development, enhanced rural quality of life, and greater social resilience within its ecological and community environment.

Introducing MSC's social responsibility through art

In a space filled with the scent of fresh paint and the rhythmic strokes of brushes echoing the heartbeat of the company, MSC, for the first time, narrated its social responsibilities through the language of art.

In this event, prominent artists from across the country gathered at MSC to portray, on blank canvases, a colorful story of the company's social, environmental, and human commitments. In this live event, original works were created in the forms of painting, illustration, and caricature, each piece telling a story of the company's efforts toward a more sustainable future: from water transfer from the Sea of Oman to the construction of a solar power plant, from rural development to supporting sports and community health.

But the true magic of this event lay not only in the creation of the artworks, but in the conversations that emerged between the employees and the artists, employees who witnessed, up close, the unfolding of meaning: meanings that may have previously remained hidden within formal reports or official documents.

This live exhibition not only infused the workplace with color and inspiration, but also built a bridge between industry and culture, between production and responsibility, between performance and values. It was an event that showed social responsibility is not merely about projects and numbers, it takes root in the minds and hearts of people. And what better language than art to express it?

Empathetic, supportive, and development-oriented initiatives

Industry in service of life; MSC's developmental steps at the heart of the community

In line with fulfilling its social responsibilities and with a vision that goes beyond industrial production, MSC took another step in supporting regional development through its participation in infrastructural and public service projects in Mobarakeh. These initiatives not only respond to the region's infrastructural needs but also reflect the deep connection between industry and society.

Among the inaugurated projects are the Shohada-ye Foolad Mobarakeh overpass, a health house and the equipment of medical centers, Talash technical high school, an educational building, and an artificial turf football field. Furthermore, the groundbreaking ceremonies for projects such as the entrance road and the sewage collection and transfer network of Hasanabad-e Tang-e Bidkan village were also held with the support of MSC.

Alongside these initiatives, the reconstruction and geometric redesign of the entrance bridge to Hasanabad village was prioritized as a vital project. This bridge, which had previously been the site of numerous accidents due to poor design, is now undergoing reconstruction with a new and properly engineered structure and width, backed by an investment of 1200 billion Rials by MSC. This project represents not just an infrastructural improvement, but a clear symbol of the company's commitment to safety, comfort, and quality of life for local residents.

The philosophy of sustainability at MSC is not limited to carrying out construction projects, it is about creating lasting conditions for better living, more effective education, more accessible healthcare, and safer roads for surrounding communities. Because we believe that industry only finds its true meaning when it beats at the heart of society.

Shohada-ye Foolad Mobarakeh overpass

Moving towards advancing the health of local communities

Renovation and upgrading of “Mohammad Rasulullah” hospital in Mobarakeh County

As part of its commitment to social responsibility and improving regional healthcare standards, the first phase of the renovation and equipment upgrade project for Mohammad Rasulullah Hospital in Mobarakeh County has officially commenced with the signing of a multilateral memorandum of understanding. This agreement was signed between MSC, the parliamentary representative of Mobarakeh, the county governor, and the president of Isfahan University of Medical Sciences. MSC has played a key role in this project, committing to the renovation of facilities, equipping the hospital and the specialized clinic, providing an MRI machine, and contributing to the creation of sustainable income through the construction of a commercial complex affiliated with the hospital. This initiative is a clear indication of the company’s commitment to developing vital infrastructure and supporting the health of the local community.

Signing of the agreement for the renovation and equipping of Mohammad Rasulullah Hospital in Mobarakeh County

A pulse for sustainability: MSC and strengthening community health infrastructure

On the path toward building a sustainable future, industrial development alone is not enough; the health and resilience of the community form the true foundation of lasting progress. With a responsible and forward-looking approach, MSC has taken another significant step in fulfilling its commitment to creating and supporting sustainable communities by enhancing the healthcare infrastructure in Mobarakeh County.

Responding to a critical need in the local healthcare system, MSC provided an echocardiography and exercise stress test equipment for the Cardiology Department of the Social Security Clinic in Mobarakeh County. These vital medical devices play a key role in the diagnosis and care of cardiac patients and contribute meaningfully to the resilience of the local health system.

This initiative is not merely a supportive gesture, but part of a comprehensive vision for social development and regional sustainability, because MSC believes that a society fortified by health, hope, and security can build stronger and more humane foundations for development alongside industry.

Inauguration of the Echocardiography Center at the Mobarakeh Social Security Clinic

An industry that stands beside life

MSC's contribution to providing 300 dowry sets

In our culture, the beginning of married life has always been intertwined with traditions of compassion and mutual support, rituals that, although shaped by time, still carry the same essence: empathy, solidarity, and building a future together. In this spirit, MSC has strived, within its capacity, to help facilitate unions built on affection, hope, and independence. Its participation in providing 300 dowry packages is not a symbolic gesture, but rather a reflection of the sense of responsibility we feel toward our community especially in times when economic pressures can make the path to marriage more difficult for some young people.

We believe that supporting the formation of young families is a vital step toward social sustainability. However, this initiative only found true meaning through the participation of compassionate organizations and benevolent partners who joined hands with empathy. MSC played but a small role in this broader chain of support. We view such efforts not as an obligation, but as an opportunity to be with the people, to listen, to understand, and to walk alongside them. Because we believe MSC is not defined solely by its factory walls, it beats at the heart of the community. We stand by local communities, we work to empower them, and we build the future together. And if today there are smiles of hope lighting up homes, we do not attribute it to ourselves, but to the grace of collective empathy and the privilege of serving under the shelter of public trust. That very privilege encourages us to keep moving forward

MSC's contribution to providing 300 dowry sets

Mehr with the Kindness of MSC

In the days when the school bell rings alongside small smiles and eyes full of dreams, MSC, in harmony with Mehr (the seventh month of the Iranian calendar, corresponding to September–October in the Gregorian calendar), extended its hand of kindness to children in need.

Coinciding with the celebration of the first-graders and the start of the school year, 2,000 stationery packages were distributed among students supported by the Imam Khomeini Relief Foundation, the State Welfare Organization of Iran, and underprivileged families in Mobarakeh County; a part of a larger initiative to distribute 7,000 educational kits across the province.

In a simple yet hope-filled ceremony, alongside the children of this land, MSC showed that its beating heart is not only for production, but also for the joy, education, and bright future of children. Here, kindness flows from the heart of industry, and Mehr takes on a warmer tone.

Donation of 2,000 stationery packages to the Imam Khomeini Relief Foundation of Mobarakeh

A Toy for my friend

In July 2024, Naghsh-e Jahan Stadium in Isfahan hosted the largest Eid al-Ghadir celebration in the country under the title “Toward the Summits” This grand gathering provided an opportunity to strengthen solidarity and express appreciation for the efforts of the Mobarakeh Steel family.

Alongside the “Toward the Summits” celebration, held in July 2024 in honor of Eid al-Ghadir, the campaign “A Toy for My Friend” was launched and warmly welcomed by Mobarakeh Steel families. In this event, attended by around 50,000 people, including current and retired MSC and its contractors' employees and their families, children donated toys for the oppressed children of Gaza. This symbolic gesture conveyed a heartfelt message of empathy and kindness from Iranian children to their peers in Gaza.

Donation of toys to the oppressed children of Gaza

Sports for all

MSC promotes social equity by equipping 110 rural sports centers

As part of its social responsibility efforts, MSC has equipped 110 rural sports houses across Isfahan Province with complete sets of athletic equipment, aiming to strengthen both social and athletic equity. This initiative, focused on preventing social harm, especially among rural youth and teenagers, seeks to improve access to sports facilities, creating a platform for talent development, boosting social vitality, and enhancing public health. Through this action, MSC reaffirms its commitment to empowering underprivileged areas, believing that rural talents, particularly in competitive sports, require opportunity and support to shine at national and international levels.

Donation of sports equipment to 110 rural sports houses

Pahlevani ritual in today's alleys: MSC, a partner to an ancient culture

At MSC, we believe in standing by the people, honoring our cultural heritage, and building the future together. With this in mind, the construction of the "Ghadir Futuvat House" has begun with the support of MSC and in collaboration with the Foundation for the Preservation and Publication of Holly Defense Values in Isfahan Province, a cultural-sports initiative aimed at promoting the values of traditional Iranian-Islamic chivalry and ethics.

This complex, currently under construction within the Cultural Center and Museum of the Iran's Islamic Revolution and Holly Defense of Isfahan Province on a 1,000 m2 plot of land, is designed to revive the ancient, chivalry-based sport known as "Pahlevani." A sport that not only strengthens the body but also cultivates the spirit of humility, bravery, and selflessness.

The Ghadir Futuvat House will go beyond being just a sports facility; it will be a place for teaching, showcasing, experiencing, and passing down this treasured cultural legacy from one generation to the next. Its design incorporates both modern standards and traditional symbols of Isfahan Province where past and future, tradition and innovation, come together in harmony.

For MSC, empowering local communities through culture is not a duty, but an honor especially where culture, ethics, and national identity are deeply intertwined.

Construction of Ghadir Futuvat House

The Story of Foolad Mobarakeh Sepahan Sports Club

Expanding sports and culture in the underserved areas of eastern and western Isfahan

In the heart of alleys where dust has replaced the grass of stadiums, and youthful enthusiasm has yet to find a place to shine, sports serve as a light that brings hope to lives. In the underserved areas of eastern and western Isfahan, Foolad Mobarakeh Sepahan Sports Club, with a human-centered perspective, has sought to ignite a spark of motivation, joy, and future-building in the hearts of the youth through organizing sports programs and talent scouting.

Within the framework of MSC's social responsibilities, Foolad Mobarakeh Sepahan Sports Club, in cooperation with Rasta Development Company, has implemented a structured program for the development of sports, social vitality, and identification of athletic talent in deprived areas of eastern and western Isfahan Province. This program has been designed and implemented with the goal of empowering local communities, promoting public sports, and supporting cultural-social sustainability.

The overarching goals of this program are: improving physical and mental health in local communities, creating equal opportunities for access to sports, discovering, nurturing, and supporting local talents, and developing human capacities for the sustainable management and leadership of sports activities in less-privileged areas.

Key executive actions

1. Establishment of specialized talent identification centers

- Creation of 9 football talent identification centers for boys in the following areas: Harand, Central Jarghouyeh, Upper Jarghouyeh, Koohpayeh, Northern Baraan, Southern Baraan, Varzaneh, Ezhiyeh, Garakan-e Jonubi, and Mobarakeh.
- Launch of 4 volleyball talent identification centers for girls in the areas of: Harand, Koohpayeh, Varzaneh, and Upper Jarghouyeh (based on local need and demand).

2. Training and empowerment of local coaches

- Specialized volleyball coaching training and localization by educating 56 female coaches to work in local centers.
- Identification and training of 520 residents from 56 targeted villages for the development of rural and traditional sports.
- Promotion of 180 of these individuals to serve as local sports managers, who play a key role in ensuring the continuity and sustainability of the program.

3. Implementation of cultural and joyful activities

- Organization of local sports events such as family walks and traditional-local games to boost social vitality.
- Conducting educational and developmental classes in sports to improve managerial and coaching skills.
- Holding local sports tournaments aimed at creating motivation, strengthening social cohesion, and building trust among residents

The programs implemented by Sepahan Sports Club in the eastern and western regions of Isfahan are a successful example of the purposeful use of sports as a tool for sustainable development and social responsibility. These initiatives have not only contributed to improving the physical and mental health of residents, but have also elevated the cultural and athletic standards of the community, attracted athletic talent among gifted youth in these areas, and laid the necessary groundwork for sustaining cultural and sports activities in the region.

Champion-making steel

As part of its commitment to social responsibility, MSC has taken a major step in supporting professional sports, a step that not only contributes to public health and social vitality, but also reflects the company's strategic vision for fostering unity and enthusiasm through sports.

By providing strong and consistent backing to the two athletic and cultural clubs, Foolad Mobarakeh Sepahan and Sepahan Novin Sports Clubs, the company has helped establish a professional and dynamic platform for nurturing talent and advancing championship-level sports in Iran.

This support extends not only to men's teams in popular disciplines such as football, volleyball, basketball, handball, and other professional sports, but also includes women's teams across various sports and age groups. This inclusive approach plays a crucial role in empowering women in sports and promoting equal opportunities, an important stride toward social and cultural justice.

Through investment in infrastructure and professional facilities, MSC plays a vital role in training the next generation of national sports champions, fostering values of perseverance, healthy competition, social cohesion, and national pride. This thoughtful approach serves as a successful model of how industry can drive cultural and athletic development, a model where champions rise from the people, and for the people.

Sports Teams Supported by the Company Include:

Sports Teams Supported by the Company

Men's Professional Teams:
Football, futsal, volleyball, basketball, handball, water polo, cycling, mountaineering, wrestling, tennis, table tennis, chess, swimming, karate, judo, taekwondo, athletics, and weightlifting.

Women's Professional Teams:
Football, volleyball, handball, table tennis, swimming, badminton, and athletics.

Honors of Foolad Mobarakeh Sepahan Football Team:

5 championships in the Persian Gulf Pro League

4 championships in the Hazfi Cup
(Iran's National Knockout Cup)

1 runner-up title in the AFC Champions League

Participation in the FIFA Club World Cup

Foolad Mobarakeh Sepahan men's football team

Foolad Mobarakeh Sepahan women's football team

Foolad Mobarakeh Sepahan women's handball team

Foolad Mobarakeh Sepahan men's handball team

Establishment of sports academies

As part of its social responsibility and with a special focus on developing grassroots sports among the younger generation, MSC has launched specialized sports academies aimed at nurturing the athletic talents of the children of its employees and contractors. These academies operate in five key disciplines: football, volleyball, swimming, water polo, and gymnastics, and have so far welcomed more than 2,000 boys and girls from various age groups.

By employing professional coaches and utilizing standard sports facilities, these academies serve as dynamic platforms for identifying, training, and developing emerging talents. Through this infrastructure, MSC has not only contributed to enhancing the health and vitality of its employees' children but has also succeeded in training athletes who have achieved honors and stood on the podium in provincial and national competitions.

The expansion of these academies reflects the company's forward-looking approach to strengthening the bond between the Foolad Mobarakeh family and the values of sport, and marks an effective step toward social sustainability through the empowerment of the next generation.

MSC's academy sport festival

Chivalry in the field of social responsibility: Reviving the ancient zurkhaneh sport Pahlevani wrestling with MSC's steadfast commitment

In an era where society is in greater need than ever of authentic moral and social role models, Zurkhaneh sport is not merely an athletic discipline, but a living symbol of Iranian chivalric culture, brotherhood, and ethical conduct. Recognizing this invaluable heritage, MSC has taken a cultural and inspiring step by officially launching Zurkhaneh sport within the Foolad Mobarakeh Sepahan Sports Club.

This initiative goes beyond mere athletic development; it reflects MSC's responsible and forward-looking approach to investing in the country's social and cultural capital. Supporting this deeply rooted sport is part of the company's broader strategy to fulfill its social responsibilities through the promotion of indigenous and identity-based sports.

In this context, MSC also played an active role in supporting the first World Zurkhaneh Championship in 2024, hosted by Isfahan. The competition featured teams from various countries, and Iran's national team claimed the championship title with 257 points in the team category, a victory made possible through the backing of Sepahan Club and the committed support of MSC.

Through this approach, MSC has not only given deeper meaning to investment in sport but has also helped revive and reaffirm the place of chivalric values in today's social landscape

Holding the first World Zurkhaneh Competition with the support of MSC in 2024

Governance performance

Responsible governance: The pillar of trust and sustainability

At MSC, responsible governance is recognized as one of the fundamental pillars of sustainability. This approach, grounded in the principles of good governance, transparency, accountability, and justice, has paved the way for the establishment of a structured, transformative system rooted in social responsibility throughout the organization.

By developing a coordinated and interdepartmental mechanism for decision-making, policy implementation, and performance monitoring, the company strives to continuously enhance its processes and embed ethical and professional principles in all aspects of its operations. The governance structure is designed in such a way that employees, managers, and shareholders act in alignment and with active participation toward the realization of the company's overarching goals.

At the apex of this structure stands the General Assembly of Shareholders, which plays a strategic role in shaping the organization's future direction by defining overarching strategies. Additionally, the company's Board of Directors, comprising five elected members with a two-year mandate, is responsible for steering and overseeing the organization's overall performance. This governance mechanism not only ensures the achievement of economic and operational objectives but also facilitates the path toward sustainable development by emphasizing social and environmental commitments.

One of the prominent features of this approach is transparency in information disclosure and continuous engagement with stakeholders. MSC fosters stakeholder trust and effective participation by regularly publishing comprehensive reports in the financial, social, and environmental domains. This engagement is realized through tools such as consultative meetings, surveys, and diverse communication channels with employees, customers, the local community, and shareholders.

Responsible governance at MSC is not merely a tool for management and oversight, but also a platform for enhancing social capital, enabling multi-level accountability, and fostering sustainable synergy across various sectors of the company and the broader society

Extraordinary General Assembly of MSC in 2024

Legal environment of the company

The key laws and regulations governing the company's operations are as follows:

A) National laws and regulations (including: the Commercial Code, the Labor Law and Social Security Law, laws on direct and indirect taxes, the Securities Market Act and regulations pertaining to companies listed on the Securities and Exchange Organization, the Commodity Exchange Law, the Law on the Development of New Financial Instruments and Institutions, and environmental laws and regulations)

B) Internal resolutions and regulations (including: the company's Articles of Association and internal bylaws, the company's financial and procurement regulations, resolutions of the General Assemblies, and resolutions of the Board of Directors)

Legal Ownership

MSC (public joint stock company), which is now one of the largest industrial companies of the Islamic Republic of Iran, was registered as a private joint stock company with registration number 7841 in Isfahan Companies and Industrial Property Registration Department on 19 March, 1991. According to the minutes of the extraordinary general meeting dated 10 May, 2004, the company was converted from a private stock to a public stock and on 26 February, 2007 its name was included as the 435th accepted company in the list of listed companies.

Board of Directors

At MSC, the Board of Directors is recognized as the highest governing body of the organization. Board members are elected every two years from among the shareholders. The election of these individuals is mandatory through the collection of votes from all shareholders and must take place during the Ordinary General Assembly. In this way, shareholders participate directly in the selection of the company's highest governing authority.

In each election, one or more members of the previous board must be dismissed from their positions, and new members must be selected through the voting process. The election of other official and legal positions must also be carried out in the same manner as that of the board members, through formal voting.

Structure of election and role of the board of directors at MSC

At MSC, the Board of Directors is regarded as the highest governing body of the organization and plays a key role in strategic guidance and oversight of the company's performance. The election of board members takes place every two years and is conducted from among the shareholders. This process is mandatory and carried out through direct voting during the Ordinary General Assembly, thereby ensuring active shareholder participation in shaping the company's governance structure.

According to the election mechanism, at least one member of the previous board must be replaced by a new member, allowing for dynamism in the managerial composition and the introduction of fresh perspectives. Furthermore, the appointment of other official and statutory positions within the company, like that of board members, is also subject to voting and approval by the General Assembly, highlighting the company's commitment to transparency and participatory governance.

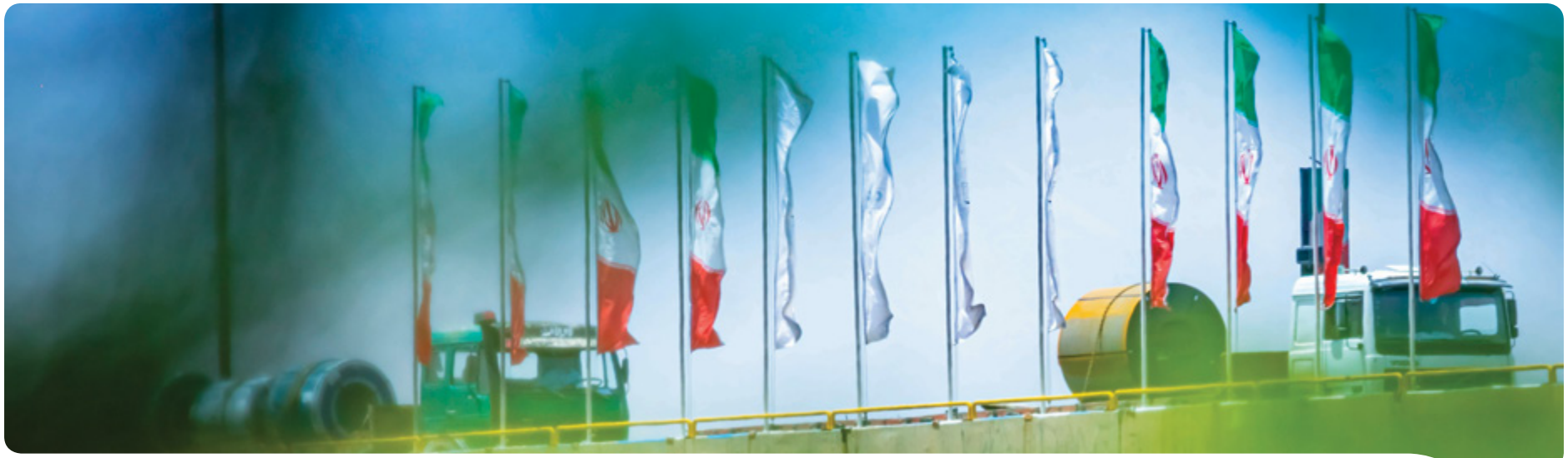
This process not only guarantees the accountability and legitimacy of the Board of Directors, but also reflects MSC's dedication to the principles of good governance and stakeholder involvement in high-level organizational decision-making

Corporate governance policies

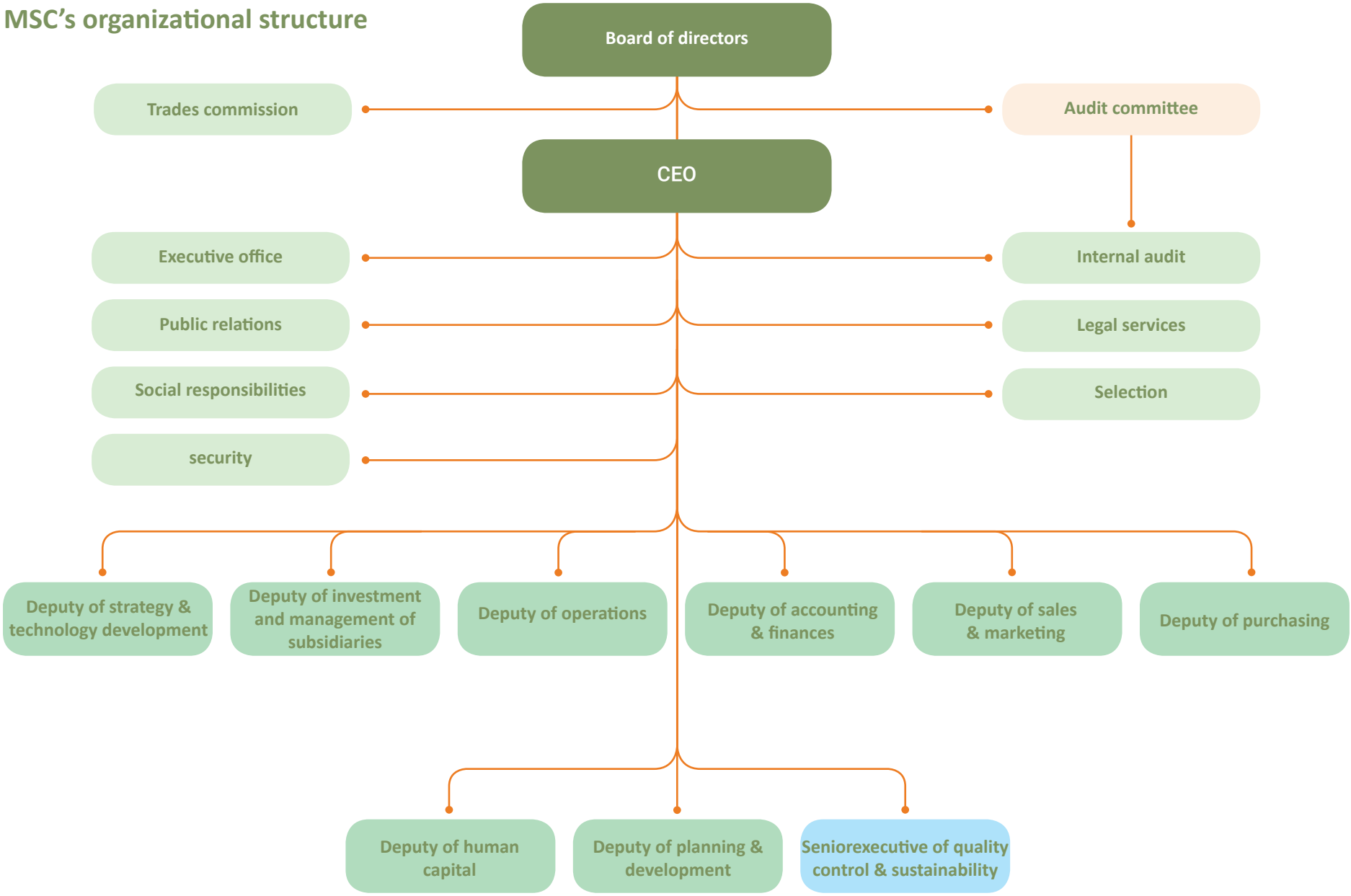
The purpose of corporate governance is to assist a company's policymakers in assessing and enhancing the legal, regulatory, and institutional framework for corporate governance, with the aim of supporting the company's effectiveness, efficiency, sustainable growth, and financial stability.

Progress toward sustainability requires the establishment of a corporate governance system, strategic and operational planning, the creation of an effective and efficient control environment, and the cultivation of an integrated risk management culture within the company, while remaining committed to ethical principles and values. In this regard, MSC has designed and implemented various approaches to ensure the effective implementation of corporate governance.

MSC's policies related to corporate governance	
Principles of corporate governance	**Company approaches**
Principles and framework of effective corporate governance	● Compliance with the requirements of Chapters 2 and 3 of the Corporate Governance Guidelines
Protecting the rights of shareholders and treating them equally	● Compliance with the provisions of 240 of the Commercial Law regarding profit sharing ● Compliance with the disciplinary instructions of the publishers accepted in the Iran's Securities and Exchange Organization
Compliance with the rights of beneficiaries	● Compliance with the provisions of Article 129 of the Commercial Law regarding transactions with related parties
Institutional investors, stock market and other financial intermediaries	● Compliance with the instructions of the Iran's Securities and Exchange Organization ● Compliance with the instructions of the Iran's Merchantile Exchange
Accountability, disclosure and transparency	● Complying with the executive instructions for disclosing information of companies registered with the Iran's Securities and Exchange Organization ● Compliance with the disciplinary instructions of the publishers accepted in the Iran's Securities and Exchange Organization ● Implementation of provisions articles 37 and 38 of chapter five of Corporate Governance Guidelines ● Disclosure of information and financial reports on the company's website
Responsibility of the board of directors	● Compliance with the requirements of chapter three of the Corporate Governance Guidelines ● Compliance with the provisions of 27 to 44 of the company's statutes



MSC’s organizational structure



Supervisory strategy at MSC

The purpose of designing the value creation system for the Mobarakeh Steel Group through the 2032 horizon is to foster strategic alignment, operational synergy, and enhanced capacity for generating sustainable value across the group. This ensures that all subsidiaries and investee companies operate in alignment with the group's overarching vision and strategic objectives, contributing meaningfully to global positioning, sustainable profitability, social responsibility, and technological advancement.

Strategic goals of the Mobarakeh Steel Group's value creation system by 2032:

1. Ranking among the world's top 20 steel companies

2. Achieving annual group-level revenue exceeding 15 billion USD

3. Becoming a national benchmark for world-class corporate management

These three goals serve as the foundational pillars for the design and implementation of all major group-wide programs, including the supervisory strategy for subsidiaries, investment and growth strategies, and governance and sustainability models.

In line with strengthening corporate governance, enhancing strategic integration, and effectively monitoring subsidiary performance, MSC has developed and implemented a "group supervisory strategy." This approach provides a structured framework for leading, guiding, and synergizing group companies, ensuring that each affiliated unit advances in alignment with the Mobarakeh Steel Group's 2032 value creation system

The corporate supervisory model has been developed using internationally recognized frameworks, including the BCG matrix and strategic approaches to corporate governance. This model defines the position of each company in terms of resource allocation, market growth, and its role within the group's overarching strategy

Key objectives of the supervisory strategy

- Strengthening the alignment of group companies' missions and objectives with the main strategy of Mobarakeh Steel Group
- Monitoring the performance, effectiveness, and efficiency of subsidiaries through a systematic and evidence-based approach
- Enhancing transparency and accountability in decision-making processes at the group level
- Guiding investments and resource allocation in a purposeful manner to achieve sustainable value creation

Based on the value chain and the nature of each company's mission, the group's companies are categorized into seven clusters:

- Holding companies
- Steel production companies
- Energy and water supply companies
- Steel industry supply chain support companies
- Technological support companies
- Financial, economic, and capital market companies
- Social responsibility companies

This clustering enables specialized and targeted governance of the companies, taking into account their roles in ensuring supply chain sustainability, advancing the green economy, and fulfilling social responsibility.

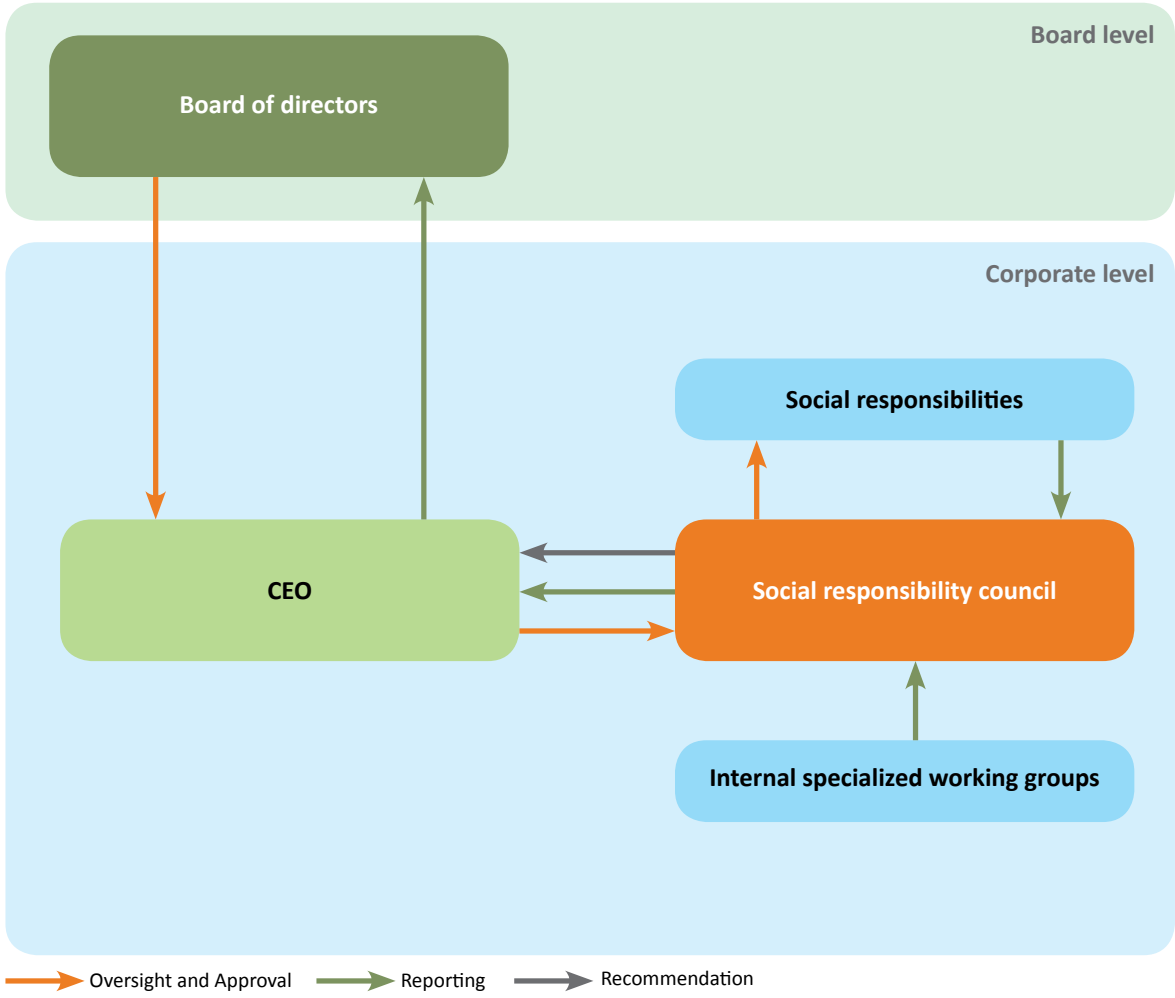
Social responsibility council

With the expanding scope of corporate social responsibilities and the increasing complexity of stakeholder needs and expectations, the necessity of having participatory and decision-making structures to effectively guide this domain has become more evident than ever. As a leading organization in the field of sustainable development, MSC firmly believes that successful implementation of social responsibility strategies requires collective wisdom, diversity of perspectives, and alignment of decisions with on-the-ground realities.

In this context, the Social Responsibility Council has been established as one of the key governance bodies in this area. Its purpose is to conduct specialized analysis of proposals and requests, fairly prioritize resources, and ensure that actions are aligned with the company's overarching social responsibility strategies.

Composed of a balanced mix of representatives from key organizational sectors, subject matter experts, and relevant institutions, the council provides a transparent, participatory, and accountable platform for decision-making regarding MSC's social programs. The establishment of this council is a strategic step toward strengthening organizational cohesion, enhancing stakeholder trust, and ensuring effective resource utilization in the realm of social responsibility. The council's organizational structure and its communication channels with internal entities are outlined as follows.

Structure of the social responsibility council and its communication channels



Mission of the social responsibility council

The Social Responsibility Council of MSC has been established with the mission of providing intellectual, analytical, and strategic support to the decision-making processes in the domain of social responsibility. The council acts as a vital link between the corporate's main strategies, stakeholders' expectations, and operational initiatives, striving to optimize the decision-making system through the synergy of diverse expertise and perspectives.

The council's mission includes:

- Expert evaluation and prioritization of social responsibility projects and requests, based on transparent and equitable criteria, and grounded in a stakeholder engagement model;
- Formulation of the proposed annual budget for social responsibility in alignment with MSC's social responsibility domains and strategies;
- ecommending the purposeful allocation of budgetary resources, focusing on social impact, alignment with strategic priorities, and responsiveness to the community's most pressing needs;
- Defining and communicating social responsibility policies to companies within the Mobarakeh Steel Group;
- Monitoring, oversight, and evaluation of the effectiveness of programs and projects, with the aim of continuous improvement in the company's performance in the social responsibility domain;
- Strengthening transparency, accountability, and documentation of decisions to foster trust among internal and external stakeholders;
- Proposing plans and initiatives aligned with the organization's social responsibility strategies.

Though consultative in nature, this council plays a significant role in the governance of corporate social responsibility, serving as a foundation for intelligent, evidence-based, and strategy-aligned decision-making in support of MSC's sustainable development mission.

Isfahan, Khaju Bridge over the Zayandeh-Roud River

The story of Tuka Foolad

A green investment roadmap: laying the tracks for a responsible future

In its journey toward sustainable and value-driven development, Tuka Foolad Investment Company, as the specialized investment arm of the Mobarakeh Steel Group, has placed the formulation of an investment roadmap based on the principles of Environmental, Social, and Governance (ESG) responsibility at the core of its agenda.

This roadmap, designed to guide future investments through to the horizon of 2032, focuses on identifying opportunities that not only offer long-term financial returns but also exhibit the strongest alignment with the sustainability goals of the Mobarakeh Steel Group.

Key objectives of the project

- Enhancing the effectiveness of the investment portfolio through ESG criteria
- Identifying responsible investment opportunities across MSC's value chain
- Steering investments with a focus on green and sustainable growth
- Developing a coherent framework for project evaluation based on environmental and social viability
- Supporting high-potential projects in resource circularity, waste reduction, and green employment

Environmental benefits

- Increasing the recycling of industrial waste by directing capital toward companies with clean technologies
- Enhancing water recirculation in industrial processes through investments in closed-loop water systems
- Promoting investments in low-carbon industries or those employing innovative approaches to pollutant reduction

Social and governance benefits

- Increasing direct and indirect employment through investments in infrastructure and development projects with high job creation potential
- Expanding targeted social contributions aligned with regional development goals
- Enhancing public and shareholder satisfaction through transparency and accountability in investment decision-making processes
- Establishing a decision-making structure based on sustainable governance in the selection of new investment projects

Tuka Foolad's initiative to develop a responsible investment roadmap represents a key pillar in Mobarakeh Steel Group's journey toward building a green value chain. By strengthening the role of ESG criteria in project evaluation, this roadmap marks a significant step toward institutionalizing the concept of green investment within the country's industrial holding companies.

The story of Metil Steel Holding

Data-driven governance at Metil Steel Holding: A new architecture for investment decision-making

In an effort to enhance transparency, efficiency, and accountability in investment decisions, Metil Steel Holding has designed and implemented a mechanized system for preparing feasibility studies and capital increase proposals. This system enables the company's subsidiaries to independently develop development project proposals, without relying on external consultants, using internal data and within a short timeframe, all in a standardized format ready for review by the investment committee.

This initiative represents an innovative model of data-driven governance and significantly streamlines decision-making processes within the Mobarakeh Steel Group's value chain.

Key objectives of the project

- Mechanization and standardization of the feasibility study preparation process
- Reducing dependence on external consultants and accelerating decision-making processes
- Improving the accuracy of financial, economic, and market analyses through internal algorithms
- Integrating investment information for better decision-making at the holding level
- Enhancing the quality of corporate governance in development and investment

Environmental benefits

- Reduced energy consumption in 2024 compared to 2023 by eliminating in-person visits and traditional data exchanges
- Improved waste management through centralized, digitalized project documentation and elimination of redundant paper-based and manual processes

Social and governance benefits

- Increased satisfaction among group companies and shareholders through transparent and accurate decision-making processes
- Enhanced control and systematic evaluation of development projects before approval
- Improved Return on Assets (ROA) and investment efficiency by more rigorous screening of proposed projects
- Strengthened accountability and integration within the holding's decision-making structure
- Reduced unnecessary costs and optimized resource allocation across the company and its subsidiaries

Metil Steel Holding's initiative in governance marks a convergence of digitalization, efficiency, and organizational responsibility, serving as a practical model for other group companies to elevate governance maturity, optimize investment strategies, and enhance sustainable resource management.

MSC's transformation structure; the driving engine of continuous improvement

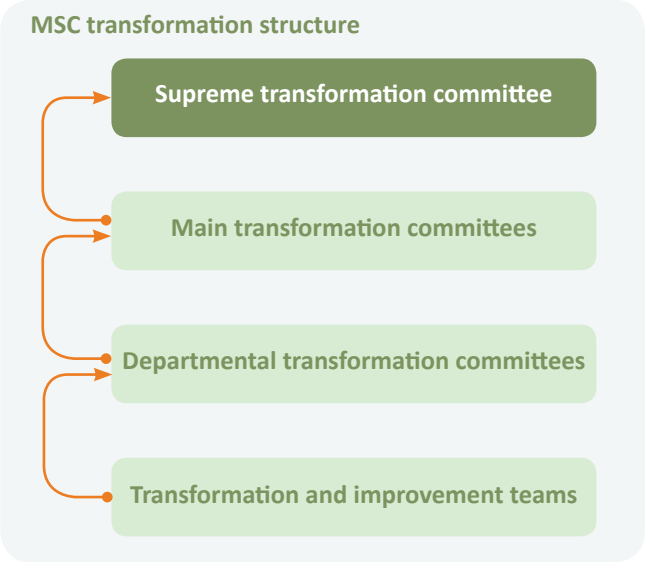
In an era of rapid change, organizational sustainability depends on the ability to adapt and continuously improve. A transformation structure based on organizational processes, with the formation of the Supreme Transformation Committee as the highest body playing a key role in guiding and overseeing improvement processes, along with Main and Departmental Transformation Committees, as well as transformation and improvement teams focusing on transformative and participatory topics, provides an effective platform for achieving sustainability.

This structure, by strengthening department collaboration and integrating transformation efforts, steers the organization toward achieving its goals, strategies, and sustainable growth. The main transformation committees, focusing on macro-level transformation topics, align organizational strategies with sustainability objectives. These committees, through the participation of key stakeholders, identify challenges and opportunities and improve productivity and efficiency by monitoring cross-unit processes.

Departmental transformation committees, with an emphasis on employee participation at the department level, advance transformation initiatives aligned with local needs. This two-way approach both maintains flexibility and strengthens organizational coherence. The emphasis on participation within these committees promotes a culture of collaboration and innovation, and by fostering a sense of ownership among employees, increases commitment to transformation goals.

This structure, through participatory feedback and data-driven decision-making, creates a cycle of continuous improvement that ensures sustainability across economic, social, and environmental dimensions.

Ultimately, the transformation structure, centered on participation and change, by integrating efforts at various levels, turns the organization into an agile, innovative, and sustainable institution that can withstand environmental changes and maintain its competitive advantage.



MSC's main transformation committees			
Iron making	Central workshop	Accounting and finances	Sales and marketing
Steel making	Central maintenance	Communications and social	Technology
Hot rolling	Transportation and support	responsibilities	Investment and management of subsidiaries
Cold rolling	Technical inspection, automation and instrumentation	Plan and development	Quality control and sustainability
Energy and fluids	Maintenance technical office	Human capital	CEO area
CEO area	Purchasing	Purchasing	Energy and fluids

Strategic management at MSC; from vision to action

At MSC, strategic management is not considered an annual task but a living, participatory, and data-driven process. It is implemented based on the Norton and Kaplan model in five key steps:

1. Deep understanding for precise decision-making (Strategy analysis and formulation)

Everything begins with a precise understanding of stakeholders and a re-examination of the company's reason for existence. Utilizing tools such as megatrend analysis, the PESTLE model for macro-environmental analysis, Porter's Five Forces for industry analysis, and internal assessments based on indicators and resources, the company's vision and strategic goals are updated. In this process, MSC benchmarks itself globally against major players such as ArcelorMittal and POSCO.

2. Mapping the future (Strategy translation)

Strategies descend from the peak of vision to the level of operations. Using the BSC-SWOT method, business and functional strategy maps are designed, and key performance indicators (KPIs) and strategic initiatives are defined as part of work packages.

3. Organizational harmony (Strategic alignment)

Through a precise and structured process, the company's 20 main transformation committees align their strategy maps with the overarching corporate strategy. This alignment, conducted from the lowest to the highest organizational levels, involves the active participation of managers, experts, and facilitators, and leads to the development of operational objectives. Project charters are also prepared, and actions are monitored weekly by the CEO, the Technology Vice President, and relevant managers.

4. Full-force execution (Strategy implementation)

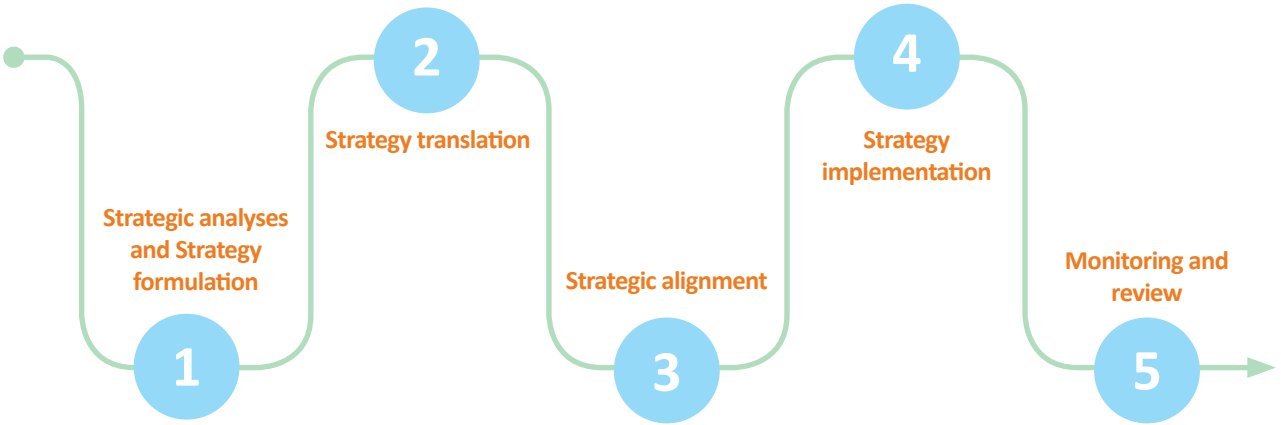
The formulated strategies are implemented through the company's processes and organizational structures. At this stage, various tools are employed to ensure effective execution, including Strategic Enterprise Management (SEM), the Business and Enterprise Management (BEM), Business Process Management (BPM), and Action Management System (ACM).

5. Evaluation for improvement (Monitoring and review)

No strategy is complete without feedback. On a monthly and quarterly basis, over 100 evaluators assess the achievement of objectives and progress of actions. The collected data is used to refine the course of action. This final step is, in fact, the beginning of a new cycle for continuous review and improvement.

At MSC, strategy is not merely a document; it is a living spirit embedded at all levels of the organization, guiding the company on the path toward sustainable growth through participation, data-driven decision-making, and continuous learning.

Process of MSC's strategic management

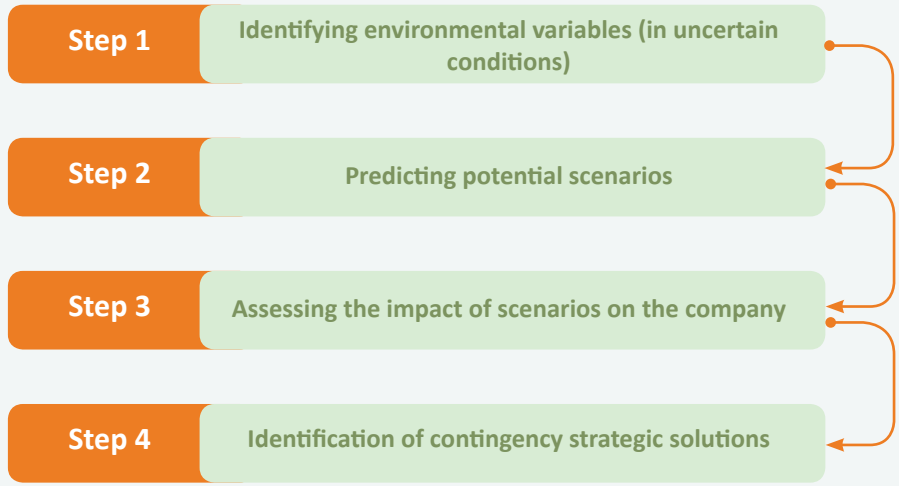


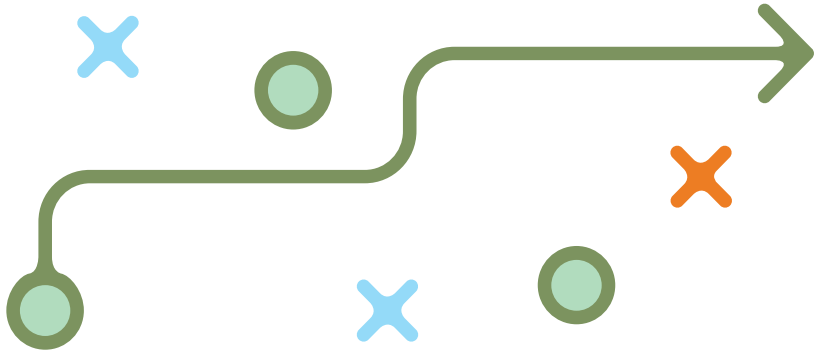
Scenario planning at MSC

Within the framework of external environment analysis, MSC has also identified and analyzed potential scenarios related to key environmental variables. This process is carried out based on a structured approach, in which environmental drivers and key variables under conditions of uncertainty are derived using tools such as PESTLE analysis and Porter's Five Forces.

For each of these variables, three plausible scenarios are developed in the form of optimistic, probable, and pessimistic states. Subsequently, the impact of each scenario on the company's future performance and competitive position is systematically examined and evaluated. Finally, appropriate strategic responses are designed and formulated to address these potential developments.

Scenario planning process at MSC





Smart strategic management

MSC's strategic observatory and foresight unit

Adopting a smart and agile strategic approach with a forward-looking perspective toward both near- and long-term developments, MSC has launched a Strategic Observatory and Foresight Unit in the form of a digital platform named "Didvan" application. The mission of this observatory is to raise awareness and enhance managerial intelligence to enable timely decision-making aligned with the company's overarching strategies and directions. This approach complements MSC's classic strategic management system by serving as a proactive and anticipatory counterpart.

Didvan, under the slogan "The Ever-Watchful Eye of Managers," functions as a strategic monitoring system and a tool for exploring and leveraging possible futures. In ancient Persian, the term Didvan referred to a person stationed at a high vantage point, such as atop a mountain or ship, who reported everything seen from afar. This metaphor reflects the role of Didvan as a smart strategic surveillance system that, through interactive foresight tools, strives to offer a 360-degree view of potential future paths and to facilitate accurate and timely decision-making.

This platform is developed and improved annually based on the needs of stakeholders. Currently, Didvan consists of 11 main sections as follows:

Horizon scanning

This section is organized thematically into six categories (business, environmental, social, economic, political, and technological) and provides the latest qualitative analyses from distant time-space contexts and macro environments within the framework of environmental scanning. The primary objective of this radar is to cultivate a proactive "thinking-learning while acting" model at MSC.

World of steel

This section delivers the latest news related to the steel industry from both proximate and international time-space contexts. These updates mainly focus on the current activities and future plans of the world's largest steel producers, aiming to monitor the behavior of global competitors.

Statistics and data

This section features key statistical indicators collected from reputable sources. These indicators are categorized into areas such as currency and gold markets, cryptocurrencies, base metals, commodities, the steel industry, and capital markets. The statistics presented here include indices that should be taken into account by managers during decision-making processes. Examples of such indicators include exchange rates, base metal prices, the Tehran Stock Exchange index, steel company indices, and more.

SOHA: Online Collective Intelligence Platform

Collective wisdom has always held a noble place in human thought. While it is said that “everyone knows something, though all people are yet to be born,” we are also reminded that “two minds are better than one,” and indeed, “together, the world can be conquered.” In the field of foresight, many methodologies are fundamentally grounded in collective intelligence. Among them, the Expert Panel is perhaps the most well-known method that falls within this category.

However, in the 1950s, the RAND Corporation identified several shortcomings in this method. Flashier or more confidently delivered responses often garnered more attention, even when not necessarily accurate. At times, individuals might withhold their opinions due to reasons such as shyness, fear of being in the minority, and other social pressures.

These issues led RAND to introduce two key conditions to the Expert Panel format, giving rise to a new methodology: the Delphi Method. Anonymity of respondents and structured feedback are the two fundamental principles that distinguish this method from traditional expert panels. By implementing Delphi online, costs are reduced and experts can participate in the collective intelligence process from anywhere in the world.

The Online Collective Intelligence System, or SOHA, is a platform specifically designed for this purpose. The Real-Time Delphi Method retains the advantages of driving toward collective consensus through a survey, while optimizing the process by significantly reducing time and cost. It is referred to as “real-time” because participants can view feedback instantly during the survey and are able to revise their responses up until the final moment. This method involves no iterative rounds; rather, it is conducted in a single stage. What is emphasized in this approach is encouraging participants to revisit the survey multiple times in order to observe new responses and evolving insights.

This feature was implemented within the Didvan application to leverage the collective input of experts, scholars, university professors, and both internal and external industry specialists on the company’s specialized topics. The platform was launched in 2024, and to date, ten think tanks addressing a range of topics and challenges have been formed within this system.

SOHA system

Studio

This section features videos and podcasts on topics such as futures education, trend analysis, industry insights, and other relevant content aimed at enhancing managerial decision-making. The objective is to highlight globally important topics through engaging video formats, ensuring more effective audio-visual communication of the content to the audience.

Infographics

In this section, users can explore the progression of key topics, such as the hydrogen trade trend through 2030. Each infographic addresses a specific subject on a single page, prompting users to reflect and think critically. These visuals present both the historical trajectory and the projected future of the trend, offering a comprehensive view in a concise format.

Trend Radar

The trend radar is one of the most powerful tools in foresight. A trend is a traceable pattern of continuous change in a phenomenon for example, population aging, currency depreciation, or migration. In strategic foresight, trends are our primary tools for modeling possible futures. They are relatively well-defined elements that offer a clearer view of the future and can be used to inform forecasts. These elements are understandable and make the concept of foresight more accessible to audiences.

The Trend Radar designed in Didvan is a fully interactive radar that visualizes the status of each trend based on standard indicators on a radar chart. These radars typically incorporate multiple time horizons to assess the maturity of a trend or determine the appropriate timing and manner of engagement. These time horizons may be defined by intervals such as “1–2 years,” “3–5 years,” and “more than 5 years.” In addition, suggested actions can be labeled with tags such as Being alert, Evaluate, Experiment, and Urgent Act.

Trend radar

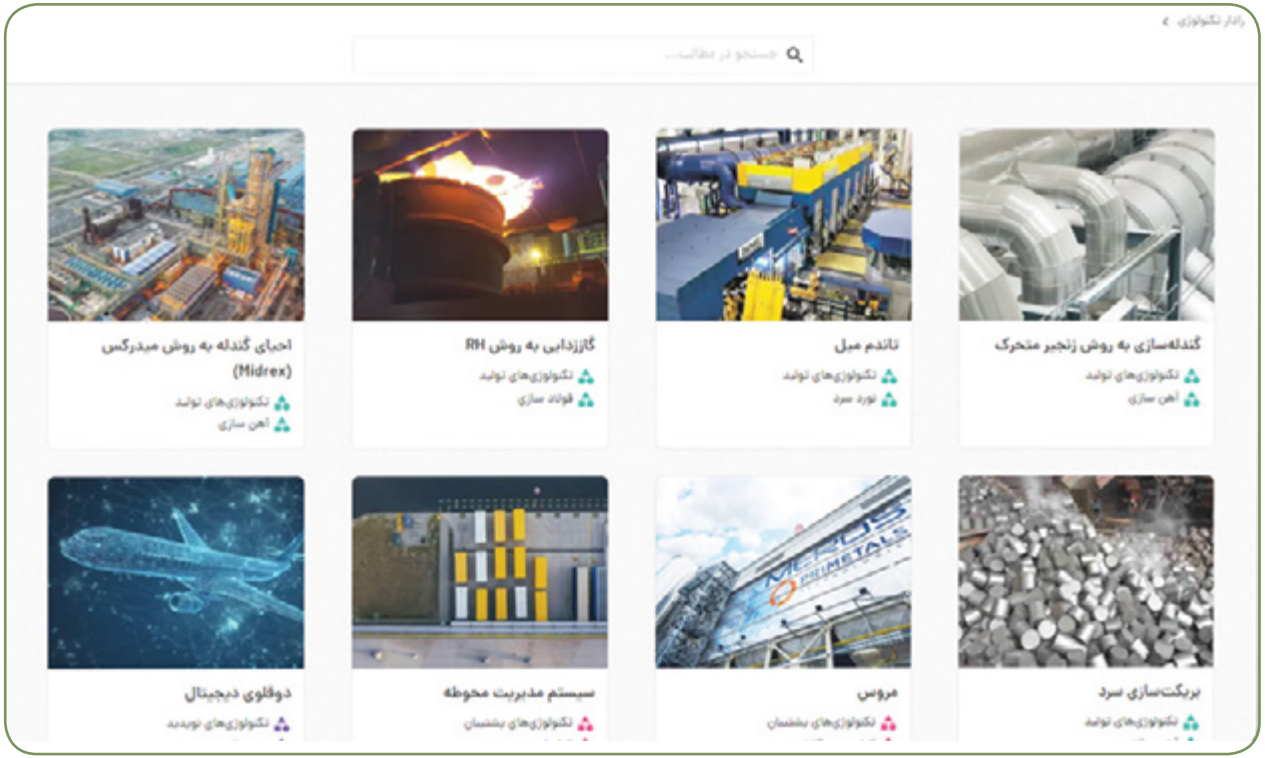
Technology Radar

Technology is the most critical driver in shaping the future. However, it must be remembered that technology is inherently volatile. Technological revolutions occur so rapidly that many businesses do not even have the opportunity to respond. Therefore, we require a tool capable of monitoring technologies at a comparable speed, creating a kind of technology intelligence for us.

In its simplest form, intelligence means the ability to adapt to changing conditions. Thus, technology intelligence refers to understanding technological changes and planning to adapt to them. To develop this initial understanding, the Technology Radar has been established at MSC, an ongoing, dynamic radar that continuously scans technologies and evaluates them based on standard indicators. This radar displays the following for each technology:

- Description of the technology under review
- Life cycle
- Technology supplier
- Benefits and capabilities generated by its application
- Drawbacks and limitations
- Investment costs
- Alternative technologies and means of accessing them

At the initial stage, the specifications of the technology are fully detailed. For example, for the technology “Slab Cutting with Oxygen Torch”, the following information is available:



Technology Radar

- General Category: Production Technologies
- Subcategory: Casting
- Technology Readiness Level (TRL): 9
- Recommended Action: Urgent Act
- Technology Attractiveness: Very High
- Capability: High
- Complexity: Low
- Cost: Medium
- Life Cycle: Maturity

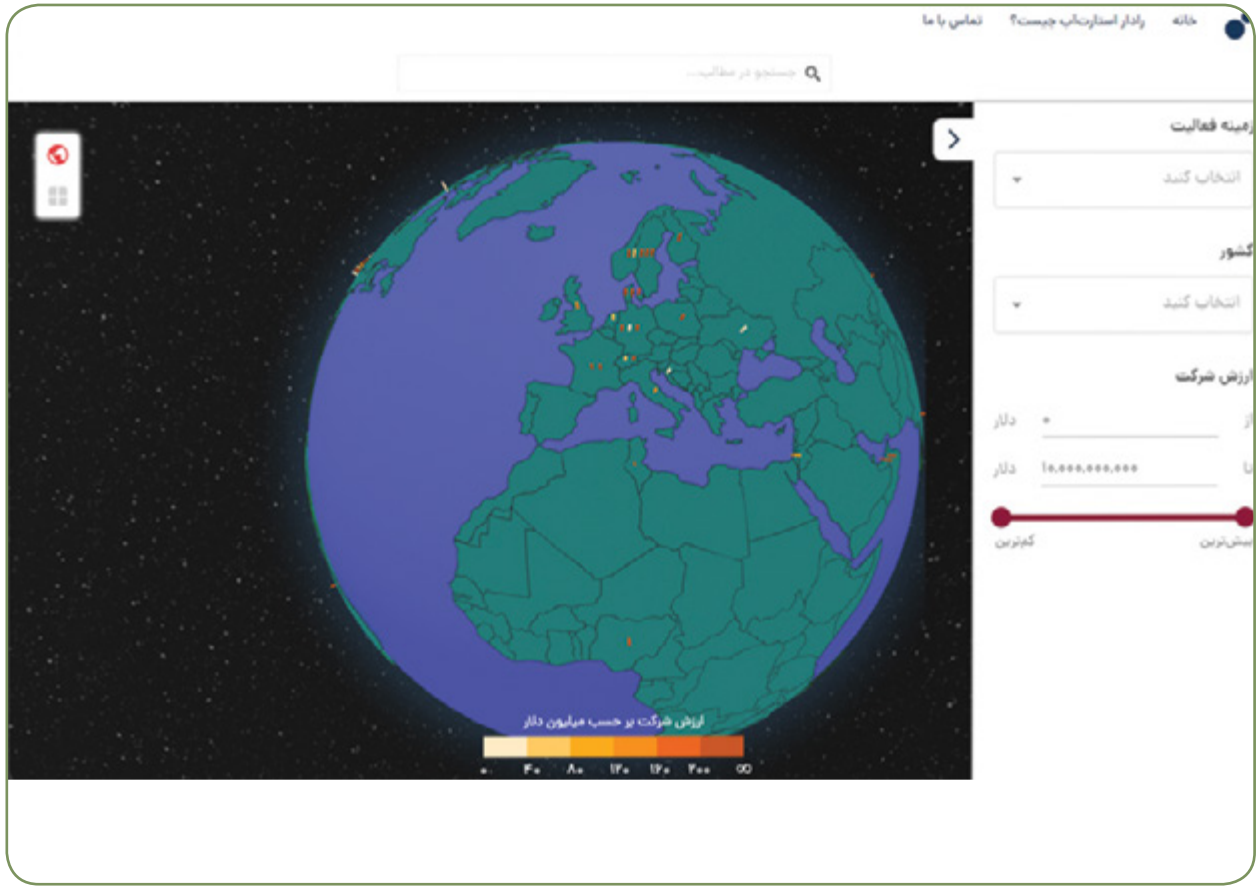
Startup radar platform

Owners of large corporations, venture capitalists, incubators and accelerators, particularly corporate accelerators, and entrepreneurs seeking to establish startups, are keen to regularly receive reports on the global startup landscape. These reports provide valuable insights into investments, failed startups, unicorns, and emerging ideas.

The recent boom in the startup ecosystem has led major industry players to monitor not only trends and technologies but also startups themselves. Companies striving for continuous innovation must stay informed about developments in the startup world, as monitoring startups and exploring potential future partnerships can play a vital role in creating innovative products, services, and business models.

Startups, due to their closer connection to customers and higher willingness to take risks with disruptive technologies, can help slower-moving companies accelerate innovation and build an effective innovation portfolio. However, searching for, evaluating, and comparing startups presents a real challenge for organizations that face limited resources and time constraints.

To address this, the Startup Radar within the Didvan application has been developed as a dedicated software solution available to Mobarakeh Steel Group's management. This radar enables the target user base of the application, especially senior executives, to access up-to-date information on startups and incorporate it into strategic decision-making.



Startup Radar Platform

Risk Radar Platform

To evolve into resilient even antifragile organizations, companies must engage in deeper risk analysis. Strategic risk analysis is a method for identifying and assessing factors that could potentially lead a project or organization to failure. This analysis includes estimating the likelihood of occurrence, the potential impact, and suggesting mitigation strategies to reduce the effects of risks.

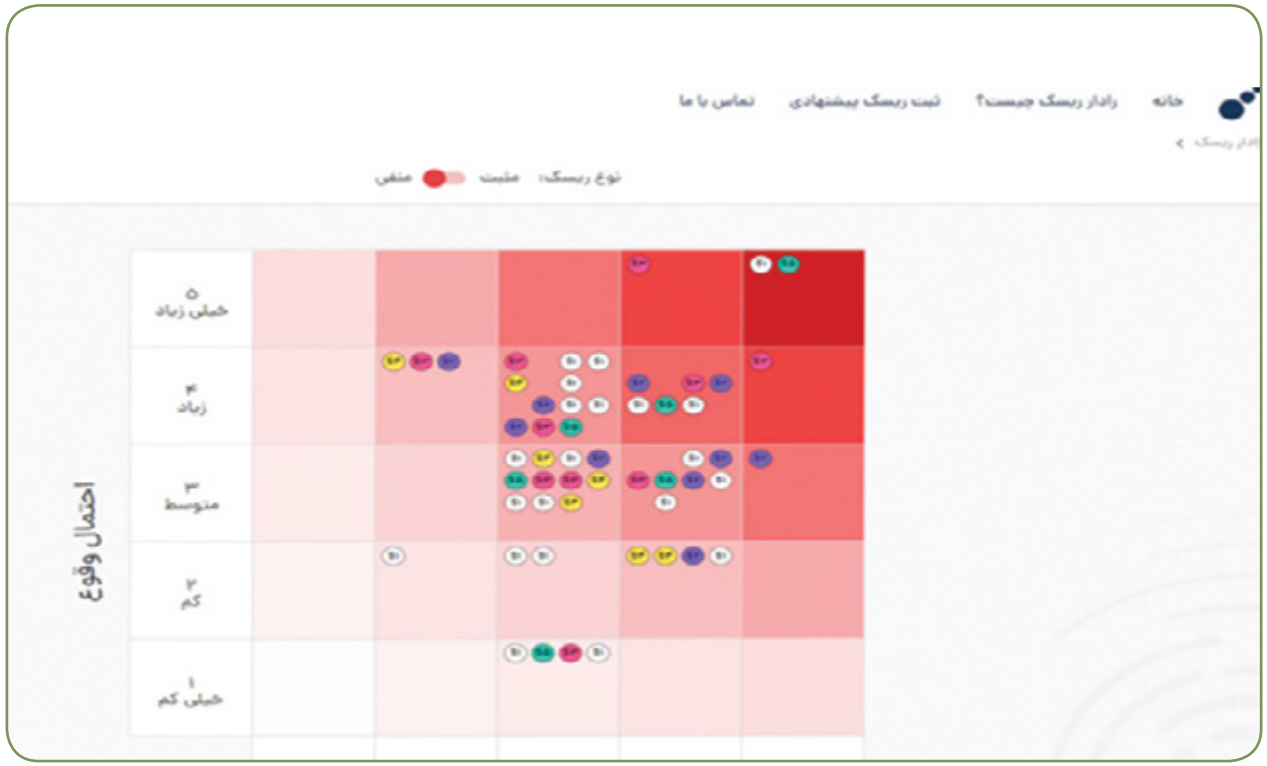
The Risk Radar Platform provides a powerful tool for prioritizing risks and formulating response strategies through a visual representation of potential risks. This platform presents a graphical matrix of risks based on their probability of occurrence and severity of impact.

Using the Risk Radar, organizations can identify, analyze, and monitor risks in real time. At present, within the Mobarakeh Steel Group, risks associated with business roadmap objectives are identified based on the company's five overarching strategies. These risks are assessed through expert panels and historical data methodologies, and recorded in the radar.

Within this radar, each user can view the following:

- probability of risk occurrence
- Severity of impact
- Related process
- Consequences and effects of the risk
- Risk index
- Root causes
- Risk owner
- Preventive actions
- Contingency actions

Additionally, positive risks (opportunities) are also identified and displayed using the same methodology.

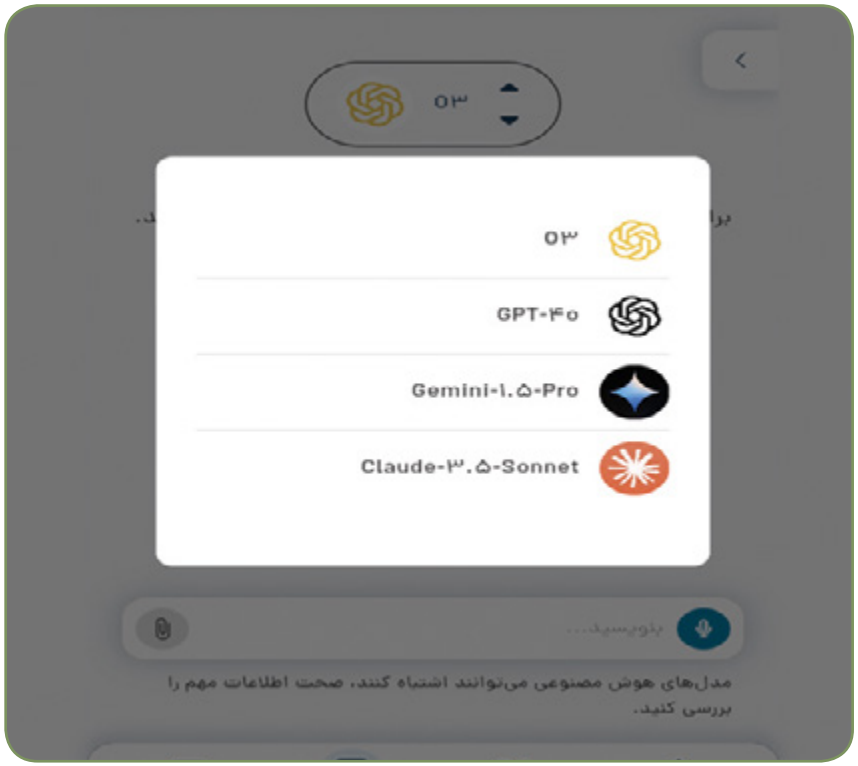


Risk radar platform

Hooshan

The “Hooshan” section was launched in 2024 with the aim of expanding the application and aligning it with cutting-edge technologies. This section is equipped with AI assistants such as ChatGPT O3, Gemini-1, and others. All users can leverage these tools to address organizational issues, including ambiguities, challenges, opportunities, and threats within their area of work.

These AI systems can play a significant role in solving both micro and macro-level projects within the organization. Additionally, users have the ability to create and customize new assistants tailored to their specific needs. A user guide for Hooshan tools is also available in the form of an instructional document, accessible to all users.



Hooshan system

Risk management and business continuity

Risk management is one of the fundamental pillars of long-term sustainability and organizational growth. This process, aimed at identifying, assessing, and controlling both positive and negative risks, lays the foundation for building trust among investors and stakeholders. Moreover, effective risk management can lead to the creation of competitive advantages and enhance the organization's value generation in today's complex and high-risk business environment.

In this context, MSC, as one of the leading players in Iran's steel industry, has incorporated risk management as an integral part of its strategic governance system. Leveraging international standards such as ISO 31000 and adopting innovative approaches, the company has systematically identified and assessed risks at various levels, and has developed and implemented appropriate preventive and reactive measures.

This proactive approach has not only strengthened the company's resilience against environmental fluctuations but also paved the way for achieving strategic goals and delivering long-term value to stakeholders.

Risk committee

In accordance with the Corporate Governance Guidelines for issuers registered with the Securities and Exchange Organization of Iran (SEO), the Risk Committee of MSC was established in 2023. The committee holds regular monthly meetings to oversee the performance of the company's risk management system. Furthermore, Risk Committees have been established in all publicly listed subsidiaries of the Mobarakeh Steel Group in compliance with the applicable regulations, and their meetings are being held accordingly.

In addition to the listed companies, Risk Committees have also been formed in major manufacturer subsidiaries such as Chaharmahal & Bakhtiari Sheet Metal Co., Sefid Dasht Steel Co., Sangan Mining Industries Co., and Tavanavar Asia Steel Industries, as well as in certain non- manufacturer subsidiaries including IRISA Co. and Mehr-e Jey Mobarakeh Steel Engineering Co.

Duties of the risk committee

Monitor and ensure alignment of risk management performance with the company's policies and objectives.

Ensure the existence of appropriate methods, processes, and systems for monitoring and evaluating risks within the company and across the Mobarakeh Steel Group.

Review the effectiveness of the company's risk management system and evaluate the performance of risk management.

Approve strategies, governance structures, charters, approaches, policies, and risk management-related procedures.

- Review the company's Risk Appetite Statement (proposed by the Risk Management Office) for approval and submission to the Board of Directors.
- Examine the company's risk status based on the level of risk tolerance and the approved risk appetite of the Board, and provide consultation to the CEO or Internal Audit Unit if necessary.
- Review the results of the company's risk management maturity assessment and identify existing deficiencies for presentation to the Board of Directors along with strategic recommendations.
- Exercise overall oversight of the implementation of policies and execution of the risk management system within the company and its subsidiaries, as well as its improvement and development.
- Approve the resources required for risk management at various levels of the company.
- Approve key indicators for continuous monitoring of the risk management system.
- Supervise ongoing activities related to the evaluation, analysis, and review of critical risks of the company and its subsidiaries, both in normal and crisis conditions.
- Promote a risk management culture and create conditions for its enhancement within the company and its subsidiaries.
- Share information on key, specific, and emerging risks with the Board of Directors and the CEO.

Enterprise risk management system

The Enterprise Risk Management (ERM) system at MSC has been developed based on learnings from ISO 31000, the COSO Risk Management Framework, and the Corporate Governance Guidelines of the Securities and Exchange Organization of Iran. Within this system, organizational risks are identified and managed across six categories: Strategic, Financial, Compliance, Project, Operational, and Information Security. The definitions of these six domains are summarized as follows:

- **Strategic:** Strategic risks directly interfere with the organization's ability to achieve its strategic objectives, which are aligned with the company's mission and vision.
- **Financial:** Financial risks affect the efficient and effective management of the organization's financial resources and the accuracy of financial reporting.
- **Operational:** Operational risks impact the efficiency and effectiveness of the organization's operational goals and processes.

Enterprise risk management system

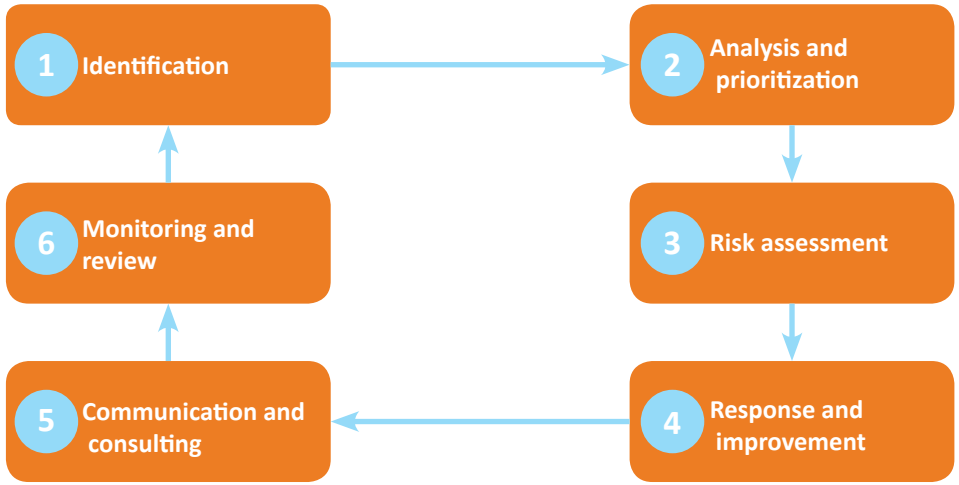
- **Compliance:** Compliance risks relate to adherence to applicable laws, regulations, and internal policies.
- **Cybersecurity:** Cyber risks are associated with the company's objectives in maintaining information and cybersecurity.
- **Project and plan:** Project risks encompass all uncertainties, conditions, and events that could have either a positive or negative impact on the outcomes of a specific project or initiative

In each of the defined risk categories, six core steps of risk management are implemented in accordance with the company's Enterprise Risk Management (ERM) framework. The outcomes are presented based on this approach, and the necessary decisions are made accordingly.

In each domain, all risks are identified and corresponding mitigation strategies are determined in accordance with relevant workflows. If a risk exceeds the predefined risk appetite set by the main Transformation Committees, it must be reviewed by the Company Risk Committee to define appropriate response strategies. To ensure effective risk and opportunity management, preventive actions and, if necessary, contingent actions, are identified and implemented. For critical and significant risks and opportunities, related Key Risk Indicators (KRIs) are monitored regularly. In this regard, BI dashboards have been designed and implemented to track the company's key risk indicators, enabling real-time risk monitoring for the organization's top management.

Risk categories at MSC

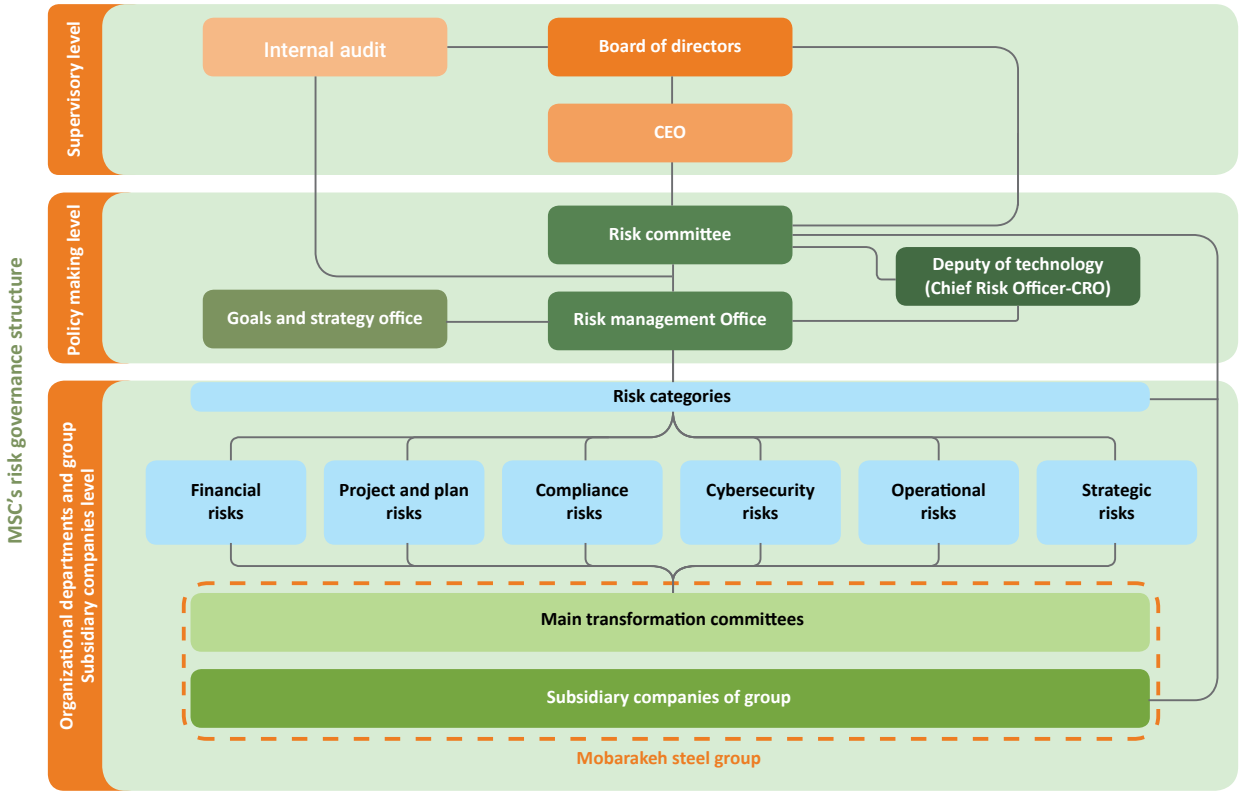
MSC's risk management model



Risk governance structure

The risk governance structure at MSC establishes the necessary governance mechanism for the effective implementation of the enterprise risk management (ERM) system and its deployment across all levels of the company, including departments, units, and transformation committees. This structure is defined as three shields, or three lines of defense.

The first line consists of organizational units and group companies that are responsible for managing risks based on the defined levels of risk appetite. The second line represents the policymaking level, which focuses on designing frameworks and ensuring that operations are aligned with them. This level also provides guidance and leadership to the first line in the field of risk management. Finally, the third line refers to the oversight level, which supervises the performance of the first and second lines to provide assurance and ensure alignment with governance principles.



Identification and Analysis of Strategic Risks at MSC

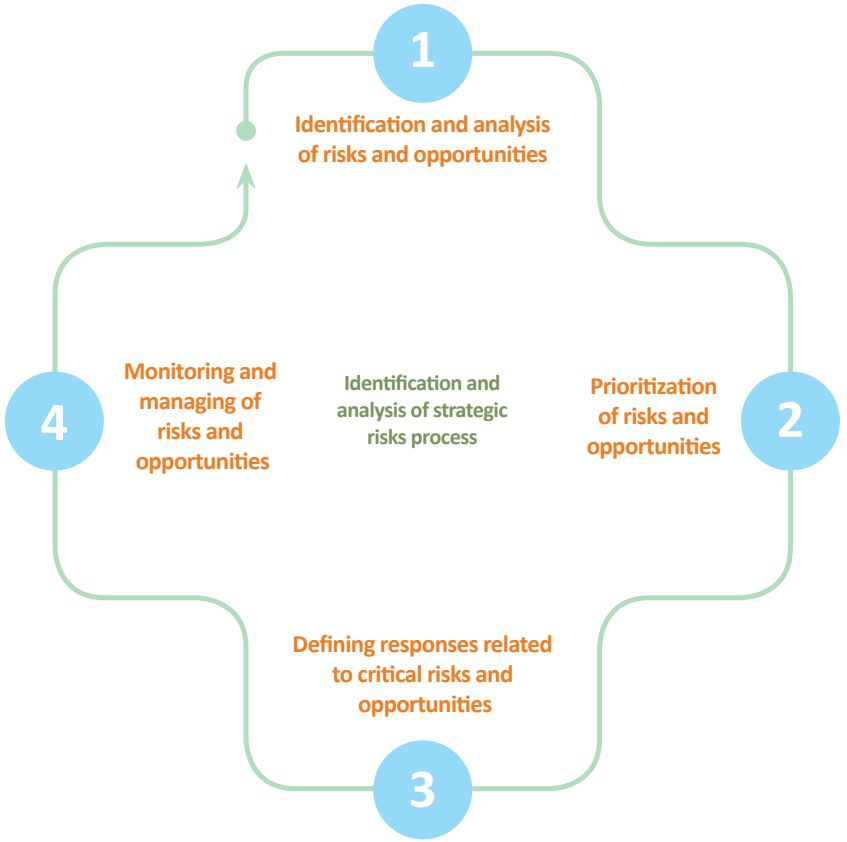
In order to assess and manage its strategic risks, MSC employs an integrated framework based on the international ISO 31000 standard and the approach proposed by Robert Kaplan and Anette Mikes. This process was initiated in 2012, inspired by the experiences of Volkswagen Brazil.

In this approach, risks associated with each of the company's strategic objectives are identified, assessed, and prioritized by the Strategic Planning Task Force. Subsequently, the necessary preventive or reactive actions are designed and implemented to reduce or control critical risks (risk mitigation).

Given that organizations, regardless of size or type of activity, are constantly exposed to various internal and external factors, encountering uncertainty in achieving their objectives is inevitable. This uncertainty, which can influence how and when objectives are met, is defined as "risk." A risk is any factor or condition that may threaten or limit the organization's or a project's ability to achieve its goals, create value, or attain expected outcomes.

Under this approach, and in alignment with the company's six overarching strategies, all enterprise-level risks and opportunities are identified through active participation of managers, department heads, and technical experts. For each case, a risk worksheet is completed, corresponding to the strategic objectives under each major strategy.

Identified strategic risks and corresponding strategies	
Risk	Corresponding strategies
Limitations in the supply and quality of the Group's strategic items	● Maximized and economically efficient utilization of production capacities, with a focus on specialized products
Constraints in the provision and support of software licenses and hardware equipment	● Advancement of innovation and technology, with an emphasis on digital transformation
Increase in the frequency and complexity of cyber-attacks	● Advancement of innovation and technology, with an emphasis on digital transformation
Imbalanced utilization of production lines during certain seasons	● Maximized and economically efficient utilization of production capacities, with a focus on specialized products
Decline in customer demand for steel products	● Expansion of export markets and enhancement of the company's global positioning
Natural gas restrictions imposed by the National Iranian Gas Company during winter	● Maximized and economically efficient utilization of production capacities, with a focus on specialized products
Electricity restrictions imposed by Isfahan Regional Electricity Company	● Maximized and economically efficient utilization of production capacities, with a focus on specialized products
Increase in the total number of company personnel	● Development of human capital and enhancement of employee engagement (S5)



Information security risk management

The ISO/IEC 27001 standard provides an internationally recognized framework for Information Security Management Systems (ISMS), enabling organizations to safeguard the confidentiality, integrity, and availability of their information while effectively managing security risks. In alignment with the implementation of ISO/IEC 27001 requirements, and drawing upon ISO/IEC 27005 and ISA/IEC 62443 standards, MSC has designed and executed a comprehensive risk management process within the domain of information security. Key initiatives undertaken to establish the Information Security Management System, across four domains, organizational security, personnel security, environmental security, and technical security, include the following:

- Awareness-building and targeted training programs: One of the most critical factors in both establishing and sustaining information security is the provision of effective and purposeful education and awareness. These efforts aim to familiarize employees, contractors, and stakeholders with their rights, duties, responsibilities, and accountability within the organization's information security policies. A significant portion of the successful and optimized implementation of these policies depends on the proper execution of the organization's training and awareness-building programs
- Formulation and communication of information security policies
- Design and implementation of technical systems such as monitoring and logging management, access management, backup management, incident management, disaster recovery management, etc.
- Design and implementation of personnel security systems in onboarding, during employment, and off-boarding processes for employees, contractors, and other stakeholders
- Establishment of environmental and physical security controls to secure offices and operational sites

MSC must ensure that in all areas covered by this standard, information security risks are identified, assessed, analyzed, and prioritized. To this end, using a documented methodology, the company annually, or as needed, identifies and manages information security risks arising from external and internal threats and vulnerabilities of information assets.

The implementation of this standard at MSC demonstrates management's attention to information security risks and the company's commitment to protecting sensitive information and complying with security laws and regulations. This standard helps MSC not only maintain information security but also continuously improve information security management processes and build trust with customers and stakeholders.

Business continuity management

ISO 22301 is an international standard for business continuity management that helps organizations ensure their ability to respond to disruptive events and recover quickly from them. Since 2023, MSC has undertaken studies on this standard and initiated its implementation and establishment, thereby enhancing its resilience in the face of various challenges. In this regard, we have considered the following for implementing the standard:

Ensuring continuity of operations: In line with implementing ISO 22301, MSC will be able to apply effective solutions to maintain the continuity of critical operations during crises and disruptions. This initiative prevents operational and production stoppages and enables a swift return to normal conditions. For a company of MSC's scale and impact, operational continuity is of great importance, and this standard plays a key role in that regard.

Enhancing stakeholder trust: By implementing ISO 22301 and demonstrating the ability to manage crises and maintain business continuity, MSC increases the trust of stakeholders including customers, suppliers, and investors. This trust significantly contributes to the company's sustainability commitments and strengthens long-term relationships with stakeholders. In this way, MSC can reinforce its credibility in both domestic and international markets.

Improving flexibility and responsiveness: Through the use of ISO 22301, MSC will gain greater flexibility in facing changes and crises. The ability to respond quickly and effectively to disruptions is a key factor in maintaining the company's long-term resilience and growth.

Integration with other management standards: ISO 22301 can serve as a complementary framework to other management and sustainability standards. Integrating this standard with others such as ISO 9001, ISO 45001, and ISO 31000 can lead to overall improvement in management systems and enhance MSC's sustainability. In general, ISO 22301 provides a structured framework for business continuity management and risk reduction, helping MSC ensure its capability to face disruptions and crises and achieve its sustainability goals. By improving flexibility, enhancing stakeholder trust, and establishing effective links with other management standards, MSC can strengthen its sustainability performance and succeed more effectively in today's competitive market

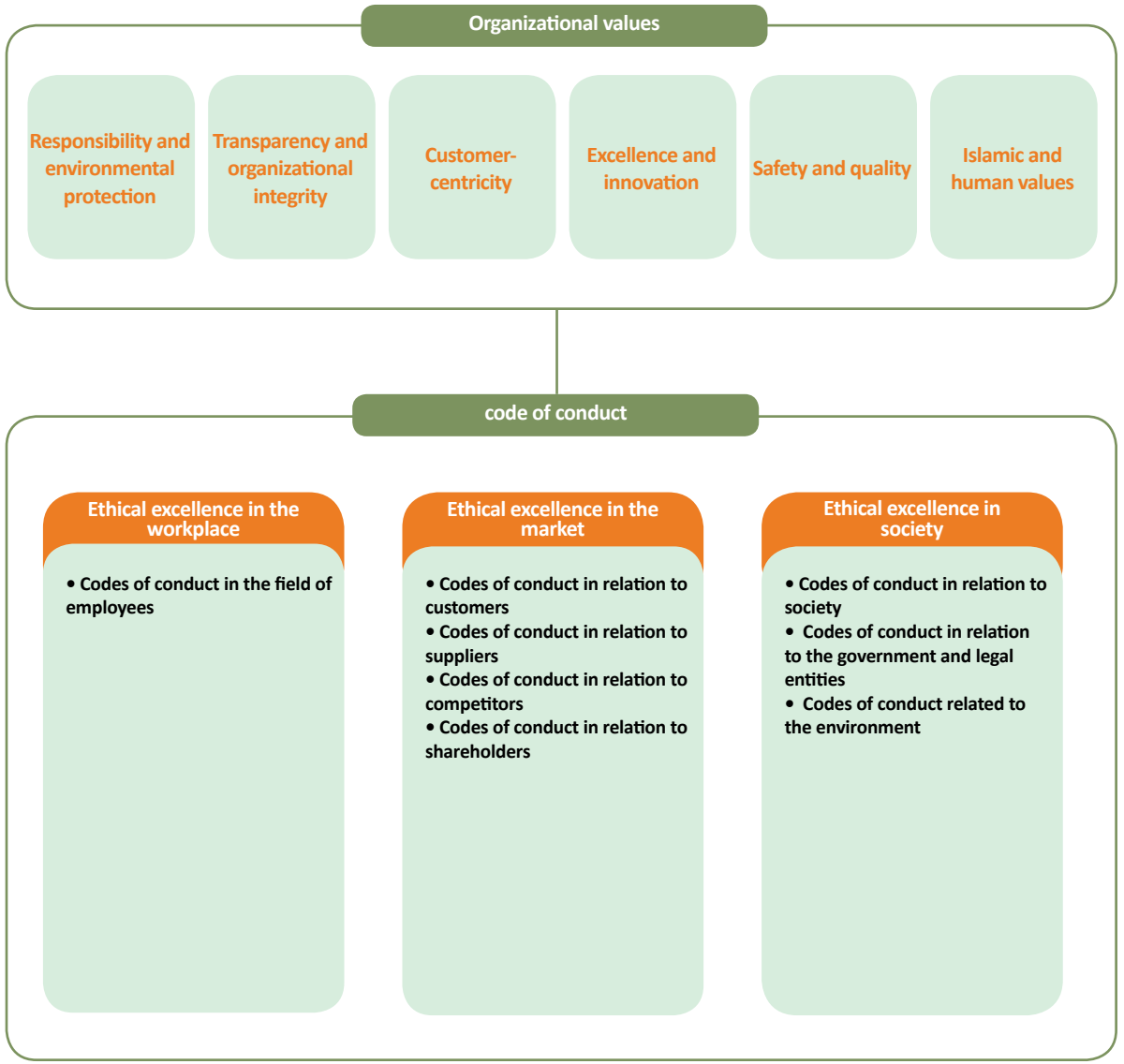
Ethics: The foundation of MSC's culture

At MSC, business ethics are not merely a set of behavioral rules, they are our organizational identity. We believe that every decision and every action must reflect human values and a sense of responsibility. Therefore, ethics are not peripheral but central to our strategies for sustainable success.

We believe that true success only holds meaning when built on trust, fairness, and transparency. For this reason, MSC has developed a comprehensive document titled the "Code of Conduct", an ethical charter that serves as our guiding light in interactions with employees, customers, suppliers, society, competitors, and the environment. This code is not merely a formal document, but the embodiment of our collective belief, born from the collaboration and shared insight of employees and stakeholders. Within this charter, 340 behavioral codes have been meticulously and systematically designed. These codes support us in navigating ethical situations, enabling us to make informed, responsible decisions worthy of the MSC name.

Our Code of Conduct is divided into three key pillars:

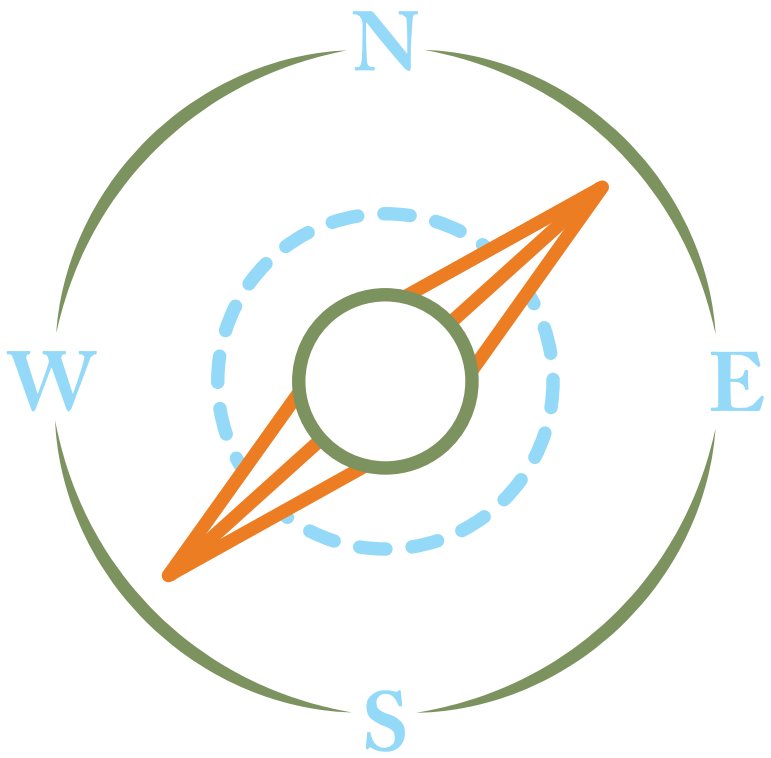
- **Ethical excellence in the workplace:** to foster a safe, humane, and fair environment;
- **Ethical excellence in society:** to fulfill our responsible role in sustainable development;
- **Ethical excellence in the market:** to uphold fair competition and honor our commitments.



For us, this document is not merely a reference, it is a benchmark for measuring integrity, authenticity, and behavioral excellence. From the very first day of employment, this charter is embedded in the onboarding training program for new staff, ensuring that the spirit of ethical values is instilled in the organization from the outset. At MSC, we regard ethics as a long-term asset, an asset that builds trust, shapes culture, and guides us toward a responsible, powerful, and humane vision.

Our code of conduct reflects:

- **The embodiment of the company's values in our daily behaviors and actions**
- **Our principles, beliefs, and ethical values**
- **An aspect of our organizational culture**
- **The most significant expectations and ethical concerns we have for our colleagues and all individuals who work with us**
- **Our interactions with colleagues, customers, suppliers, shareholders, the community, regulatory bodies, the environment, and even competitors**
- **The most important practical recommendations for complying with laws, regulations, and company guidelines**



Sustainable steel: The embodiment of green wisdom for a lasting future

In an era where the Earth thirsts for foresight and development without sustainability is destined to fail, MSC has defined its path not merely as a producer, but as a wise actor within the country's industrial ecosystem. We believe that green wisdom, a profound understanding of the interconnection between humanity, technology, and nature, must be woven into the very fabric of economic and industrial decision-making. This intelligent perspective is rooted in the wisdom of sustainability: an approach that, by blending foresight, responsibility, and innovation, teaches us how to think today so that tomorrow may endure.

As one of the foundational pillars of the national economy and the largest steel producer in the Middle East, MSC has consistently moved beyond mere production. On the path to creating sustainable steel, we consider the adoption of clean technologies, the development of environmentally friendly products, and the reduction of carbon footprint as inseparable elements of our industrial responsibility. This responsibility is not only toward nature, but also toward our customers, employees, and future generations

In our view, sustainable production only holds meaning when it creates a chain of green value for customers and society. With a deep understanding of market needs and the loyalty of more than 6,500 direct and indirect customers across the country, MSC is not only a supplier of raw materials for strategic industries such as automotive, oil, construction, and home appliances, but also a source of inspiration for transformation in production and consumption practices nationwide. The future we envision is one in which industry finds meaning alongside nature, innovation serves humanity, and economic growth is achieved through ethics and sustainability. This is the path illuminated by green wisdom and the wisdom of sustainability, a path where steel is not merely a commodity for consumption, but an asset for building a better future.

Industry sectors of customers and the export markets of MSC

Customer segmentation (By industry sector)	Steel finishing industries	Slab rolling, re-rolling, coating industries (galvanized, colored, and tin-plated), and production of steel profiles				
	Downstream Industries	Fluid pipelines	Pipes and Profiles	Vessels and storage tanks	Metal structures	Machineries
		Transportation	Metal industries	Home appliances	Packaging industries	Commercial companies
	Retail centers	Service centers				
Export markets	Middle East and Africa	Persian Gulf countries	Iraq	Other countries in the Middle East		
	Central and East Asia	Afghanistan	India	East Asian countries	Central Asian countries	
	Europe and America	European countries				

Tinplate sheets: A guarantee for safe food

During the conference on the role of the canning industry in ensuring national food security, attended by industry stakeholders and representatives of leading companies, a special trophy and certificate of appreciation were awarded to MSC by the Iranian Canned Food Industries Syndicate. This recognition reflects MSC's support for downstream industries and its strategic role in the food supply chain.

This event highlights MSC's impact in strengthening industrial infrastructure related to food security and its effective support for domestic production beyond the steel sector.

Undoubtedly, the processing industries, especially their most prominent branch, the canning industry, play an irreplaceable role in food security. This is achieved both by reducing waste and loss of agricultural, livestock, and fisheries resources, and by aligning with key components of food security. The industry contributes not only to sustainable employment and foreign exchange generation, but also plays a vital role during crises, wars, and natural disasters.

Most canned products are packaged in metal containers, linking the canning industry directly to the can and lid manufacturing sectors. Tinplate sheets are the primary raw material for this industry, and MSC plays a foundational role in the food industry's supply chain by producing these sheets.

Today, with self-sufficiency in the production of cans and easy-open lids, and with plans to supply other specialized sheets, MSC has taken a major step toward sustainably securing national food security and supporting downstream industries. This step promises a future that is independent, safe, and development-oriented for the country.

Safe infrastructure with life-building steel from MSC

On the path toward building a safer and more resilient tomorrow, MSC plays a role beyond that of a steel producer. We see ourselves as partners and allies in the sustainable development of our homeland. Accordingly, we have consistently strived to contribute meaningfully to the country's progress by accurately understanding the needs of upstream industries, particularly the construction sector. Today, more than one-third of our products directly serve the strength of buildings and infrastructures that form the beating heart of this land's cities. Each year, over 2.5 million tons of structural steel from MSC are delivered to national and public projects—without compromising our flexibility in responding to the specific needs of engineers and builders. Looking ahead, we recognize the growing demand for high-strength steels, materials that not only ensure durability and safety but also enhance efficiency and resource conservation. We have responded to this need. MSC is now fully prepared to produce a wide range of advanced and resilient grades for sophisticated construction applications. By 2032, with plans to reach a production capacity of 18 million tons, we have charted a precise roadmap, not only for quantitative growth but also for qualitative enrichment of our products. This roadmap is shaped by engagement with construction industry experts, modern engineering requirements, and the responsibility we feel toward the future. At MSC, steel production is not merely an industrial process, it is a commitment to building infrastructures upon which future generations will stand strong.

New Products

At MSC, the development of new products is guided by a structured approach based on the Stage-Gate model, a methodology that enables targeted management of ideas from ideation to commercialization through risk and opportunity assessment.

Within this framework, ideas for new product development are gathered from various sources, including the voice of the customer, market demand analysis, competitor analysis, macro trends, emerging technologies, and stakeholder input. These ideas are evaluated through decision-making gates. Each idea progresses through defined stages of technical, economic, and sustainability analysis, and advances along the development path upon validation and approval at each stage. The application of this approach at MSC has enhanced the effectiveness of innovation and enabled the production of market-competitive products that meet sustainability requirements while ensuring optimal resource allocation.

API 5L X60 MS Steel for Sour environments applications

In line with our ongoing commitment to innovation and sustainable development, we are proud to announce the successful development of a new steel grade: API 5L X60 MS, specifically designed for use in the challenging conditions of sour environments. This advanced material offers high resistance to hydrogen-induced cracking (HIC) and sulfide stress cracking (SSC), and complies with stringent industrial standards such as NACE MR0175 / ISO 15156 and API 5L. These properties enhance the safety and reliability of pipeline operations under demanding conditions.

The development of this steel grade has been achieved through precise control of chemical composition, the application of advanced thermomechanical processes, and rigorous laboratory testing. The results demonstrate excellent crack resistance and favorable mechanical properties for high-risk sour service environments.

Utilizing API 5L X60 MS steel increases the service life of sour gas pipelines and reduces maintenance requirements, thereby minimizing environmental risks associated with H_2S leakage and operational disruptions. Additionally, by improving material integrity, this steel enhances operational safety for pipeline personnel and surrounding communities, and enables more secure access to energy in developing regions with sour gas resources

From a governance perspective, this grade is aligned with international standards (API 5L, NACE MR0175, ISO 15156), ensuring transparency and adaptability across the global steel and energy supply chain, and positioning the company as a responsible global supplier.

In addition, the optimized production process of this grade results in reduced carbon emissions per ton of steel produced, supporting our overarching goal of minimizing environmental footprint and promoting sustainable energy infrastructure. This achievement represents a significant step in our path toward delivering innovative, sustainable, and high-performance steel solutions to our global partners in the energy industry.

Key technical specifications of API 5L X60 MS:

- Resistance to HIC: CLR < 5%, CTR < 5%, CSR < 2 (in accordance with NACE TM0284 standard, Solution A, 96 hours)
- Resistance to SSC: Fully passed NACE TM0177, method A without cracking
- Yield Strength: 415–565 MPa
- Tensile Strength: 520–760 MPa
- Carbon Equivalent (CE): Maximum 0.42% for improved weldability
- Microstructure: High purity and low inclusion content for enhanced sour service performance

Strategic grade SAE 4130: A fusion of engineering properties and high added value

SAE 4130 steel is one of the key heat-treatable strategic grades used across various industries. With a medium carbon content, this steel offers favorable weldability, making it a suitable option for joining with low-alloy and low-carbon grades. The development of high added-value specialty grades is one of MSC's core strategies; SAE 4130 has been produced in line with this approach and demonstrates excellent machinability prior to final heat treatment.

In terms of chemical composition, this grade closely resembles steels such as 34CrMo4 and Mo40, but with lower levels of carbon, manganese, and chromium. This allows it to be used in many of the same applications as those grades, while offering notable performance advantages such as increased softness and enhanced weldability.

Steel grades and products in 2024

Grade	Application	Technical and functional specifications
DR9-M	Tinplate grade in 0.15 mm thickness	This grade is recognized in existing tinplate product standards as the highest-strength grade and is typically produced in thicknesses of 0.15, 0.14, and 0.13 mm. The reduction in thickness is compensated by an increase in strength. The general application of this product is in the body, top, and bottom of three-piece cans. The purpose of producing this grade is to reduce the weight of cans while simultaneously increasing their strength, thereby saving on sheet usage and energy consumption.
42CrMo4	Automotive components	Low-alloy steels such as Mo40 or, in other words, 42CrMo4, which are also referred to as 4140 steel in the AISI standard, are chromium-nickel alloys. This grade is widely used for manufacturing industrial components such as crane wheel parts, gears, molds, and certain automotive parts that require high wear resistance. Due to its high chromium, molybdenum, and carbon content, this grade is not easily weldable and is generally used in industry in quenched-tempered or normalized-tempered conditions
SAE 4130	Defense industries	4130 is a low-carbon, heat-treatable grade alloyed with chromium and molybdenum, primarily produced in round bar form and less commonly as sheet. In terms of alloying element content, this grade ranks below 34CrMo4. Due to its lower carbon content, 4130 offers improved weldability and machinability, making it suitable for use in the oil & gas and aerospace industries.
APIX70	Hot-Rolled plate for water transmission pipes	This grade is the highest-strength grade within the API standard among the current product portfolio of MSC. Its mechanical property range includes a yield strength of 485–635 MPa and a tensile strength of 570–760 MPa. It undergoes impact, bend, and other mandatory tests specified in the API 5L standard. This product is used in pipeline applications for fluid transmission.
FB60	Automotive components (subframe triangle)	FB60 is a ferritic-bainitic steel grade developed according to the standards of Peugeot-Citroën. This steel features a bainitic phase embedded within a ferritic matrix. In addition to general mechanical property requirements such as yield strength and elongation, it must also meet criteria for isotropy and formability, specifically R-value and n-value. The primary application of this steel is in the “subframe triangle” component of the Tara vehicle, which is classified as a safety-critical part. Due to its high sensitivity, durability tests are conducted on this component
HX260YD	Hs-if automotive grade	This grade belongs to the category of high-strength interstitial-free (IF) steels, with a minimum yield strength of 260 MPa. It is utilized in the automotive industry in two variants: bake-hardenable and conventional. These steels offer a unique combination of high formability and elevated yield strength, making them particularly suitable for passenger car body applications. Currently, this product is designed and manufactured in galvanized sheet form in collaboration with Chaharmahal & Bakhtiari Automotive Sheet Company, in accordance with the requirements of EN 10346:2015.
SPFC390-G	High-strength automotive grade	This product falls under the category of high-tensile steel grades, with a minimum tensile strength of 390 MPa. It is designed and produced in galvanized coil form in collaboration with Chaharmahal & Bakhtiari Automotive Sheet Company, in accordance with the JIS G3135:2018 standard. It is primarily used in the manufacturing of passenger car bodies and is supplied to domestic automotive manufacturers.

Steel grades and products in 2024		
Grade	Application	Technical and functional specifications
SAPH440-G	High-strength automotive grade	This grade is one of the standard JIS grades used by automotive manufacturers and wheel production plants. With a thickness of 1.6 mm, it is supplied as a pickled product and is applied in the manufacturing of reinforcement components across various automotive platforms. Due to production quota limitations for thicknesses below 2 mm on hot rolling and pickling lines, full customer demand could not be met. To address this issue, experts from the MPT unit and designers from automotive companies proposed a solution: the production of this grade on MSC's galvanizing line. The product will be offered to customers under the designation SAPH440-G.
HDT450-F	High-strength automotive grade	This category of steels belongs to the first generation of advanced high-strength steels (AHSS). Due to the presence of a hard bainitic phase within a ferritic matrix, these steels offer high strength combined with good ductility. This performance advantage arises from the lower density of geometrically necessary dislocations compared to dual-phase steels with ferritic–martensitic structures. Currently, domestic automotive industry demand for this steel category has been met through imports. Production of these grades requires continuous annealing technology with high cooling rates
DD14-CBASCO	Hot-Rolled ultra-deep drawing grade for automotive sheet	Given the growing demand from the domestic automotive industry for ultra-deep drawing IF sheets, and the limited production capacity for these grades on MSC's existing lines, utilizing the capabilities of other companies within the Mobarakeh Steel Group has become essential to fully meet customer needs. The purpose of designing and producing this IF-quality grade within the family of pickled products is to supply raw coils for downstream rolling lines, ultimately enabling the production of ultra-deep drawing galvanized sheet in compliance with EN 10346:2015 at Chaharmahal & Bakhtiari Automotive Sheet Company

Quality: Our promise to tomorrow

At MSC, quality is not merely a technical requirement, it is part of our identity. We believe that stakeholder trust is born from consistent and responsible quality. The superior quality of our products not only enhances the productivity of downstream industries, but also upholds our reputation in global markets. For this reason, quality control and assurance at every stage of the production chain is a fundamental responsibility, one we fulfill with expertise, experience, and a forward-looking vision.

At MSC, product quality is not a short-term goal, but a continuous journey of improvement and commitment. All our quality control processes are carried out using state-of-the-art laboratory equipment and advanced technologies to ensure that every steel sheet is produced precisely according to technical specifications and customer requirements. Through continuous monitoring, real-time production line oversight, and field evaluations of customer satisfaction, we strive to deliver consistent, reliable, and globally compliant quality.

This attention to quality has not only reduced waste and increased efficiency, but has also earned our products a distinguished position in sensitive industries such as automotive, packaging, home appliances, and energy. In parallel, ongoing employee training and the institutionalization of a quality-driven culture at all organizational levels have transformed us into a company that not only produces quality, but lives it.

Specialized archive and database of product defect samples

MSC is the largest economic enterprise in Iran's steel industry and competes with the world's leading steelmakers. One of the most critical factors for global competitiveness and maintaining market position is preserving product quality and brand reputation. In line with this, and in step with prominent international steel producers, MSC has established a comprehensive archive and database of hot-rolled and cold-rolled product defect samples, both physical and informational.

To this end, standardized samples of product defects have been collected since the commissioning of production lines. Each sample is accompanied by detailed documentation specifying the defect type, its origin, and the corrective measures taken. These records are systematically categorized and stored in dedicated areas within the hot rolling and cold rolling zones.

This collection, which contains precise information on product defects, creates an opportunity to transform past challenges into lessons for the future. Within this database, the type, origin, and resolution methods for each defect are meticulously recorded and classified, enabling current and future MSC personnel, as well as other companies in Iran's steel industry, to take more informed and confident steps toward quality enhancement.

In a world where progress and resilience depend on continuous learning, MSC strives to contribute, however modestly, to the broader journey of national quality improvement by drawing on its accumulated knowledge and experience. The company firmly believes that the path to excellence begins with honest recognition of shortcomings and a determined effort to overcome them.

Specialized archive and database of product defect samples

Creating value for customers at MSC

At MSC, a focus on creating value for customers holds a central position as one of the core pillars of our business-level strategies. This approach, grounded in a deep understanding of customer needs, expectations, and preferences, not only facilitates the acquisition of new customers but also plays a vital role in enhancing satisfaction and loyalty among existing ones.

Accordingly, MSC, guided by its strategic organizational goals, designs a set of targeted actions and distinctive value propositions for its customers, propositions that increase the competitive appeal of its products and services and differentiate the company in the marketplace.

Active, regular, and two-way communication with customers, continuous analysis of their feedback, and agile adaptation to changing market needs are among the mechanisms MSC employs to realize its customer value proposition. In the process of designing the business-level strategy map, a specific value proposition is defined for each target customer segment. These values are reviewed and updated annually within the framework of the strategic management process. To ensure effective implementation, a set of defined strategic actions and key performance indicators (KPIs) are developed, executed, and regularly monitored to guarantee the fulfillment of the organization's promises to its customers.

Strategic goals and measures to create value for customers

Strategic goal	Strategic measure
Increasing customer satisfaction and loyalty	Managing customer experience
	Designing and implementing a system to measure satisfaction of indirect customers (service centers)
	Evaluating and enhancing customer loyalty
	Implementing a comprehensive customer communication program
	Analyzing causes of customer attrition
Accountability and providing commercial and technical information and guidance	Reviewing the technical product handbook
	Creating and delivering training packages on comprehensive trade systems and point of sale systems
	Preparing an analytical report on export potential in global markets
	Preparing an analytical report of the domestic market on the balance of the production chain of flat steel products and determining the share and position of MSC
Managing marketing and sales in domestic and export markets	Designing a system to analyze customer claims
	Designing a system to analyze technical customer visits
	Designing a system to maintain digital documentation of claims and technical visits
Effective management of customer claims	Integrating corrective action system from customer complaints with comprehensive action systems
Developing sales and marketing information systems	Enhancing and upgrading CRM user interface and structure according to the latest related knowledge and data mining results
Market and customer development	Obtaining export certifications for new markets

Strategic goals and measures to create value for customers	
Strategic goal	Strategic measure
Enhancing brand position from customer perspective	Evaluating brand position from industry experts' point of view
Marketing and sales management with focus on value optimization	Studying and identifying new export target markets
	Creating an integrated market analysis platform for steel
	Developing and implementing a marketing plan
Increasing domestic customer satisfaction	Planning face-to-face meetings with customers based on survey results
	Forming a specialized workgroup with sales, quality control, and production representatives to root cause frequent or specific customer claims and define corrective actions
	Preparing a report on issues and problems with the existing customer relationship management system and proposing improvements aligned with internal user needs
	Reducing response time to technical customer claims

MSC: Supporting customers from consultation to final product

At MSC, the customer is not merely a buyer, but one of the primary stakeholders in our ecosystem of responsibility. We believe that the true value of a product is not limited to its technical quality, it is reflected in transparency, knowledge-sharing, and continuous engagement with our customers. In line with this belief, MSC offers a range of informative services designed not only to support sales, but also to enhance technical knowledge and ensure optimal product utilization:

- Provision of precise technical consultations tailored to customers' specific applications
- Publication of technical guidebooks
- Organization of interactive sessions, specialized seminars, and technical-commercial meetings with selected customer groups

MSC remains committed to improving the customer experience by continuously evaluating these services through indicators such as satisfaction with consultations, number of training sessions held, and effectiveness of technical recommendations. In addition, for each product, dedicated experts are assigned to review customer feedback, from mechanical properties to packaging and potential defects, and dynamically update the guidebooks accordingly.

Through these approaches, we strive not only to be a supplier of steel products, but a responsive, knowledgeable, and committed partner in the journey of creating shared value with our customers.

Customer training: A bridge between knowledge and trust

At MSC, customer training is not merely a service, it is a deliberate and responsible step toward synergy with our strategic partners. We believe that knowledge is the backbone of a sustainable, respectful, and accountable relationship. Therefore, providing learning opportunities for our customers is part of our commitment to transparency, quality, and satisfaction.

To this end, experienced experts, drawing from industrial practice and up-to-date technical knowledge, support customers through training courses, specialized seminars, and tailored consultations. The content of these programs is based on the company's technical guides and documentation, and delivered through practical experience to enable better decision-making, safer utilization, and more enduring customer satisfaction.

Customer training topics include:

- Understanding MSC's product portfolio
- Familiarization with production processes, product grades, and industrial applications
- Explanation of technical standards and product quality indicators
- Identification of potential defects during customer usage
- Introduction to specialized safety practices related to product handling and consumption
- Overview of after-sales services and technical complaint handling procedures
- Response to customers' technical inquiries

Customer training and consulting					
Indicator	Unit	2021	2022	2023	2024
Number of technical recommendations to customers	Number	76	78	82	83
Number of training courses held for customers	Number	6	9	10	10

Customer voice: A compass for improvement

At MSC, we believe that the first step toward true accountability to our customers is deep and continuous listening. We view customer surveys not merely as a process, but as a mirror for reflecting on our performance and a beacon for illuminating the path to improvement. Accordingly, in line with the requirements of ISO 10004, our Customer Relationship Management (CRM) system annually hosts a structured survey process that collects and processes customer feedback through digital questionnaires. These data, following rigorous statistical analysis, are shared with departments such as production, quality control, marketing, and sales to inform corrective and preventive actions based on real market insights.

To gain a deeper understanding of dissatisfaction drivers, in-person meetings with less-satisfied customers and targeted interviews with key clients are designed and conducted. These interactions, guided by documented protocols and supported by detailed analysis, create a rich platform for meaningful dialogue and greater empathy.

Transformation in accessibility

In recent years, to facilitate responsiveness and reduce dependence on network infrastructure, dedicated survey links were sent to 2023 customers via SMS. This initiative led to a remarkable increase in participation rates, from 41% in 2019 to 78% in 2023, and further to 81% in 2024.

Learning from feedback: A continuous commitment

We do not merely record survey results, we transform them into a roadmap for growth, process refinement, and enhanced customer experience. Because at MSC, accountability to our customers is accountability to the future.

Customer Rights Charter: A commitment to building a responsible future

At MSC, accountability toward our customers is not merely a duty, it is an integral part of our commitment to the future of the country. We believe that customer satisfaction and loyalty form the foundation for realizing the vision we have drawn for the advancement of Iran's steel industry.

Accordingly, in 2023, guided by thoughtful insight and constructive dialogue with stakeholders, we developed and implemented the "Customer Rights Charter." This charter serves as a roadmap for responsible engagement, transparent responsiveness, and the enhancement of the experience our customers gain through their collaboration with MSC. Through this initiative, we have pledged to always be attentive listeners, reliable partners, and responsible supporters for our customers.

Charter of customer rights

We are committed to...

- Treat all customers, whether large or small, with fairness and equality, recognizing that every customer is valuable to us.
- Uphold integrity and honesty in our behaviours and communications, ensuring that our operations are always compliant, clear, and responsible.
- Adhere strictly to confidentiality principles in our commercial interactions, safeguarding customer information.
- Remain consistently attentive to the voice of our customers.
- Provide necessary guidance regarding technical and commercial information needed by our customers.
- Actively work towards customer satisfaction and loyalty in accordance with ISO 10004 standard, understanding that customer silence should not be taken as a sign of satisfaction.
- Utilize methods such as surveys and in-person interviews to understand and address customer needs and expectations.
- Create value for our customers through corrective actions, continuous improvement in all company processes, and the development of new and specialized products.
- Ensure sustainable provision while also offering diverse payment options for our customers.
- Accompany customers throughout their journey from order placement to post-delivery, ensuring a pleasant experience.
- In line with ISO 10002 standards, provide a suitable platform for recording customer complaints, meticulously reviewing and addressing them, and taking necessary actions for resolution.

Handling customer claims and complaints

At MSC, every concern and piece of feedback from our customers is viewed as an opportunity to improve product and service quality and enhance customer satisfaction. We believe that trust in stakeholder engagement is built through thoughtful listening and effective action based on the voice of the customer.

Accordingly, the process of handling customer claims and complaints is conducted in accordance with the international standard ISO 10002, within the framework of our integrated Customer Relationship Management (CRM) system. This platform enables the registration, tracking, and management of customer complaints. From the moment a complaint is submitted to the final resolution, we stand by our customers, transparent and committed, working step by step to resolve issues.

Process of technical handling of customer claims and complaints

- Receiving a complaint/claim (in the CRM system)
- Preliminary review and evaluation of the complaint/claim and collection of preliminary information
- Quick contact with the customer to receive additional information and determine the time to visit in person
- Technical examination of the product at the customer's place
- Determining the possible fault and providing different solutions to the customer
- Making an agreement and preparing the minutes of the meeting with the authorized representative of the client
- Referring the defect to the relevant units in order to take corrective and preventive measures and prevent recurrence
- Pursuing corrective measures (through joint meetings, expert meetings, etc.)
- Notifying customers and receiving feedback from the results of actions and transferring the received feedback to related areas

Key approaches in responsible customer complaint management

- Full implementation of the complaint management system based on ISO 10002
- 7/24 (7 days a week and 24 hours) access to the complaint registration and tracking platform
- Prioritization of complaints based on impact and social responsibility
- Integrated and transparent management of the resolution cycle
- Professional and respectful responses in both technical and commercial domains
- Root-cause analysis of complaints and definition of effective corrective actions

Data-driven analysis for intelligent responsiveness

At MSC, we utilize data-driven tools within our CRM system to prioritize customer complaints based on three criteria: severity, complexity, and impact. This three-tiered framework enables us to allocate resources to issues with the greatest influence on safety, quality, brand reputation, and community well-being. In doing so, we establish an intelligent link between customer-centric responsiveness and organizational sustainability.

Responsibility for complaint follow-up lies with the Customer Technical Assistance (CTA) unit, which conducts precise technical investigations at the point of use, performs root-cause analyses, and delivers actionable feedback to the production units. This learning cycle is one of our key pillars for continuous improvement in quality and trust.

A commitment toward a more secure future

For us, a customer complaint is not the end of the road, it is the beginning of a constructive dialogue. A dialogue in which the customer is heard, concerns are addressed responsibly, and lasting solutions are developed to prevent recurrence.

Strategic engagement with customers: strengthening bonds with business partners

At MSC, we believe that sustainable growth is built through constructive dialogue with stakeholders and responsible responsiveness to their needs. Accordingly, we view our customers not merely as buyers of products, but as key partners in the organization's development journey.

With this perspective, MSC's Sales and Marketing Department annually organizes forums and specialized consultation sessions with customers, events that provide a platform for exchanging ideas, collaborative thinking, and hearing the direct voice of customers across various industrial sectors.

What happens at these forums?

- Gathering of customer representatives from diverse industries
- Direct listening to customer needs, concerns, and expectations
- Transparent responses to technical, commercial, and operational questions
- Opportunities for offering suggestions and contributing to service improvement
- Strengthening mutual trust and deepening understanding of market dynamics

At the conclusion of these sessions, in appreciation of our customers' valuable participation and as a symbol of mutual respect, MSC presents a commemorative plaque of gratitude to attendees, a symbolic gesture reflecting the company's sincere appreciation for its strategic partners.

These ongoing interactions not only build a bridge for effective two-way communication between the organization and its customers, but also lead to better decision-making, the development of joint solutions, and increased customer loyalty and satisfaction

Think-tank meeting with the packaging industry customer group

Customer experience management: creating value at every touch point

In today's world, leading organizations focus not only on product quality but also on the quality of the customer experience. Customer experience encompasses the perceptions, emotions, and impressions formed throughout interactions with a brand, and plays a vital role in customer loyalty, satisfaction, and repeat business.

At MSC, the "Customer Experience Design" project was launched to gain deeper insight into the explicit and implicit needs of strategic customers, enhance the quality of interactions throughout the collaboration journey, and promote social responsibility across the industry's value chain. This data-driven, customer-centric initiative aims to transform the experience of working with MSC from a mere "commercial relationship" into a "sustainable value-creating partnership."

Recognizing the critical role of customer experience in business sustainability, MSC has adopted a structured approach to customer experience management since 2019. Along this path, a series of targeted actions have been defined across customer touch points, including:

- Empowering employees through skill development and delegated authority
- Enhancing transparency and communication with customers
- Conducting regular in-person visits to customer sites
- Developing a comprehensive Customer Relationship Management (CRM) system
- Implementing modern, customer-oriented management systems

Effectiveness assessment

To evaluate the effectiveness of its customer experience initiatives, Mobarakeh Steel utilizes internationally recognized indicators such as:

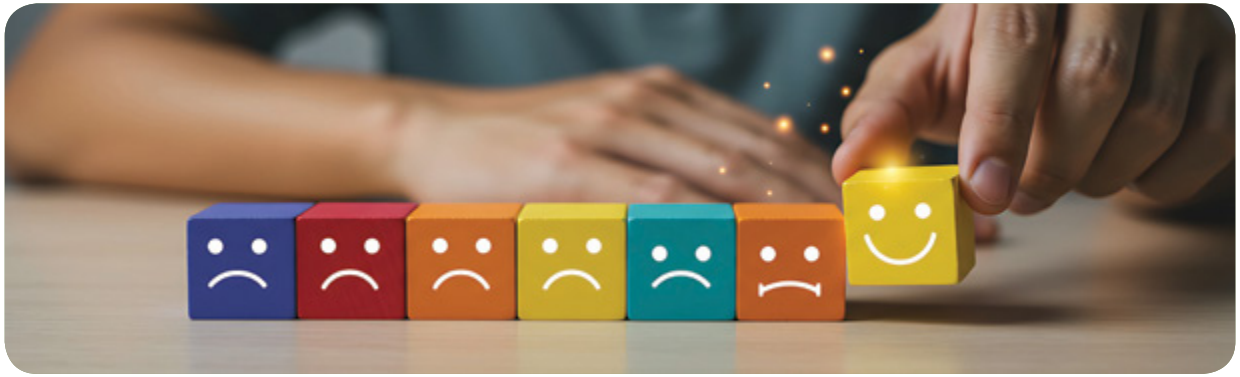
- Customer Satisfaction Score (CSAT)
- Net Promoter Score (NPS)
- Customer Effort Score (CES)

These metrics enable data-driven analysis of customer feedback and guide continuous improvement efforts.

Customer journey mapping and unique experience design

In 2024, inspired by the "Experience Economy" model by Gilmore and Pine and informed by global best practices, MSC implemented a tailored customer experience design focused on five key customer segments. These segments play a vital role in downstream steel industries, job creation, and national industrial development:

- Pipe and Profile Manufacturers – active in construction, oil & gas, and transportation sectors
- Automotive Companies – requiring high-quality sheets for vehicle bodies and components
- Packaging Industries (Tinplate) – serving food, pharmaceutical, and chemical packaging needs
- Home Appliance Manufacturers – producing bodies and internal components of appliances
- Metal and Construction Industries – especially in profiles and structural steel applications
- Finishing Industries – involved in slab rolling and re-rolling processes



The various stages of this project have been implemented as follows:

1. Identification of key personas: For each customer segment, a detailed persona was developed, providing a clear picture of their business activity, market position, purchase volume, collaboration history, and satisfaction level.

2. Customer journey mapping: The full customer experience, from initial brand awareness to product usage and after-sales service, was thoroughly examined.

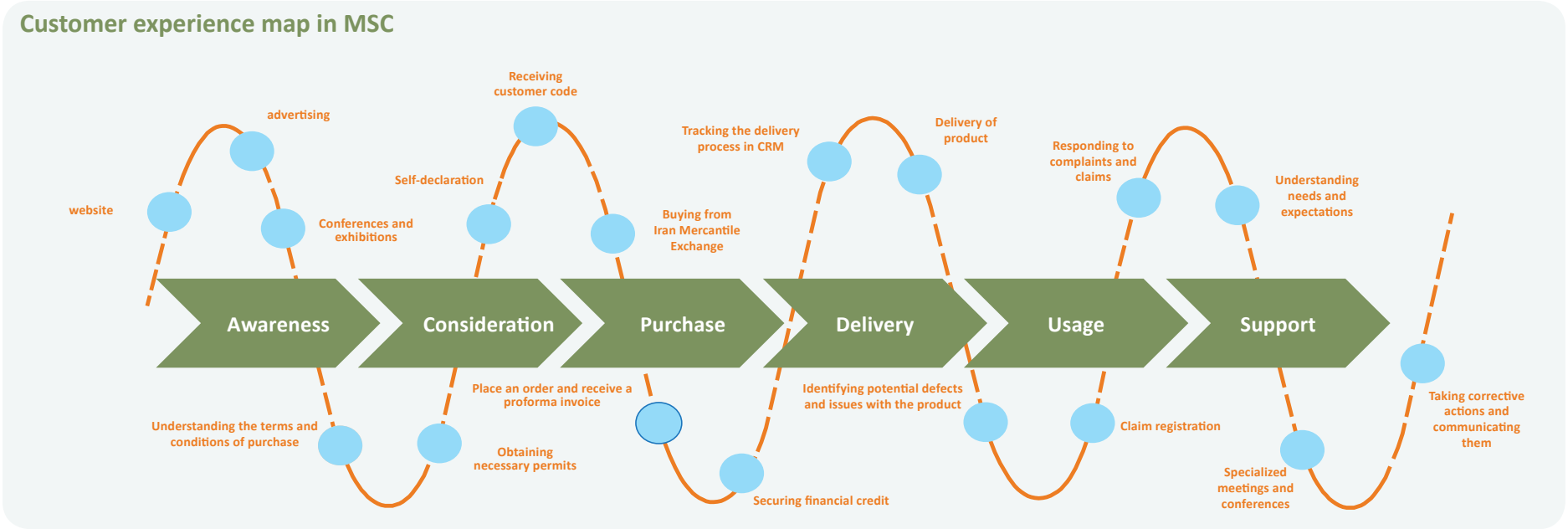
3. Touch point and Pain Point Identification: At each stage, customer touch points with the organization (sales, support, delivery, etc.) were analyzed to identify improvement opportunities.

4. Customer sentiment analysis and experience enhancement planning: Satisfaction levels, expectations, and complaints of each group were assessed, and actionable solutions were designed to enhance the experience. Initiatives with the greatest impact on reducing customer pain and increasing satisfaction were prioritized for implementation. The goal: to create a seamless, pleasant, and memorable experience for every customer.

Experience-based branding

As a continuation of this journey, MSC has launched a comprehensive brand management project, inspired by leading global steel companies. This initiative aims to scientifically and effectively manage and elevate the customer experience as the beating heart of the brand.

Customer experience map in MSC



Green supply chain: Driving sustainable transformation in the steel industry

With a vision to transform steelmaking into a clean and future-oriented industry, MSC has adopted a green supply chain approach. This strategy is designed to minimize environmental impacts across the entire supply cycle, from raw material extraction to final product delivery, and is continuously evolving.

Transition toward responsible sourcing

As part of its commitment to improving environmental performance, MSC strives to integrate responsible sourcing principles into its supply chain and supplier selection processes. Targeted investments have been made to reduce reliance on non-renewable energy sources, optimize water and electricity usage, and lower pollutant emissions.

These efforts aim to enhance resource efficiency in production, create added value for customers, and reduce the company's ecological footprint.

Integrating environmental objectives across the entire value chain

In recent years, MSC has adopted a systematic approach to embedding green supply chain concepts as a comprehensive strategy for environmental management. This approach encompasses all flows of materials, information, and capital, from sourcing to end-user, and seeks to integrate environmental requirements into high-level supply chain decision-making.

Empowering domestic suppliers and promoting regional equity

Recognizing its responsibility within the steel value chain and the vital role of domestic suppliers, MSC focuses on developing partnerships based on mutual benefit. This strategy not only enhances stakeholder satisfaction but also contributes to advancing social and economic equity at both national and local levels.

Classification of suppliers, group of goods and appropriate strategy of dealing with suppliers			
Supplier category	Relationship strategy	Level of participation	Example of goods group
Strategic	Family	Simultaneous participation	Concentrate, pellet, water, electricity, graphite electrode
Bottleneck	Friendly	Coordinated Participation	Special mechanisms, wire ropes, oxygen probes & thermocouples, grinding stones, specialized bearings, conveyor belts, etc.
Leverage	Business Partner	Partnership at cooperation level	Scrap, natural gas, rail transport, contractors for development & optimization projects, etc.
Routine	Transactional	Partnership at transaction level	Road transport, maintenance, filters, tires, pumps, limestone, chemicals, certain refractories, non-ferrous metals, etc.

Raw materials and energy supplied					
Type	Unit	2020	2021	2022	2023
(Iron Concentrate (Purchased	million tons	8.1	7.6	6.7	7.186
(Pellet (Purchased	million tons	10.4	14.8	5.2	4.059
(DRI and briquette (Purchased	million tons	1.4	6.7	3.7	3.612
(Limestone (Purchased	tons	131,155	353,583	258,500	372
(Iron scrap (Purchased	tons	0	12,055	96,807	23

The number of MSC suppliers (local and non-local)								
Indicator	Total number of suppliers				Number of active suppliers			
	2020	2021	2022	2023	2020	2021	2022	2023
Number of suppliers of Isfahan geographical area	5,023	5,150	5270	5503	1,178	1,050	1200	1210
Number of suppliers of other geographical areas	7,362	7,719	8045	8270	1,191	1,146	1475	1616
Total	12,385	12,869	13315	13773	2,369	2,196	2675	2826

Supplier empowerment: Building the foundation for a sustainable value chain

With the aim of enhancing supply chain resilience and developing domestic capacities, MSC has implemented a diverse set of strategies to empower its suppliers. These initiatives span technical, financial, knowledge-based, and strategic dimensions, and are designed to strengthen long-term collaboration with supply partners. Key pillars of this strategy include:

Open and long-term contracts

To ensure reliability and stability in the supply of strategic items such as mold powder, packaging straps, and liners, MSC enters into open and multi-year contracts with selected suppliers.

Technical Support and Knowledge Transfer

To improve the quality and effectiveness of partnerships, MSC provides technical training to contractors and facilitates knowledge exchange through specialized modules within the SRM system.

Financial support and capital facilitation

Key initiatives include barter arrangements, increased advance payments, guaranteed purchase agreements, investment participation, equity acquisition or capital injection into active companies within the value chain, and support for knowledge-based enterprises.

Consortium formation and optimal utilization of capacities

By facilitating multilateral collaborations, idle capacities of companies are identified and mobilized through the formation of consortia aimed at industrial development and localization.

Selection and introduction of quality control inspectors

This initiative is designed to enhance quality standards and increase transparency in supplier interactions.

Localization of equipment and support for domestic manufacturing

Through collaboration with other major steel producers in the country, joint localization projects have been designed and implemented to strengthen domestic production capabilities and reduce foreign dependency.

Enhancement of technical documentation and product information

Updating and refining technical documents and product-related data is one of the key support measures for the technical development of suppliers.

Development of scientific and research collaboration networks

MSC has established think tanks at selected universities, defined joint research projects, and signed research contracts to foster effective collaboration with academic institutions across the country.

Empowerment of knowledge-based enterprises through the MSTID fund

To advance innovative technologies and promote localization, the Mobarakeh Steel Group's venture capital fund (MSTID Fund) provides diverse financial and operational support to knowledge-based companies.

Selecting the most qualified business partners: Responsible supply chain evaluation

Thorough and systematic supplier evaluation is a key pillar of MSC's approach to achieving sustainable business practices. In this context, suppliers of both goods and services are assessed through multi-dimensional evaluation processes.

Evaluation of good suppliers

This assessment is based on indicators such as delivery reliability, quality of supplied items, and responsiveness to inquiries. In recent years, environmental criteria have also been integrated into the evaluation system. Specifically, the impact of purchased components and materials on water and energy consumption, two critical environmental indicators, has been added to assess suppliers' alignment with sustainability requirements.

Evaluation of Service Providers (Contractors)

For contractors, evaluation criteria vary depending on the technical domain and are weighted accordingly. These criteria include technical and professional capabilities, ability to provide required resources, adherence to timely payment of wages and benefits, and other performance metrics. Each supplier is scored within the SRM system based on these evaluations.

HSE, environmental, and social criteria

All suppliers and contractors are evaluated based on indicators such as adherence to health, safety, and environmental (HSE) standards, efficient use of energy and water resources, and social performance, particularly the preservation of employee dignity within contractual frameworks.

Registration and evaluation process

Prospective suppliers must register their information in the SRM system. Following document review, an on-site evaluation is conducted, or in special cases, a remote assessment via videoconference. Active suppliers are continuously evaluated based on supply performance, system-logged reports, and outcomes of technical and commercial committee meetings.

Distinct and continuous evaluation system for goods and services

Goods Suppliers: Performance is evaluated daily and systematically based on key indicators.

Service Contractors: Performance is assessed every 90 days using specialized criteria tailored to 14 distinct operational domains.

Transparency and accessibility across the group

To streamline the supply chain across Mobarakeh Steel Group, the list of suppliers and their performance status is made available to subsidiaries via the SRM system. This initiative enhances transparency, facilitates decision-making, and improves efficiency in selecting business partners.

Evaluation criteria for suppliers of services	
Criterion	**Description**
Organizational structure	Competency of employees, employee specialization, utilization of employee expertise, compliance with safety, health, and environmental standards, etc.
Work management	Timely procurement of equipment, product health control, market recognition, determination of customs tariffs, quality of guidance and training, etc.
Financial capacity	Regular and accurate presentation of financial statements, timely payment of personnel salaries, ability to cover contract costs.
Time management	Appropriate time of order registration, appropriate time of clearance, appropriate funds, etc.

Evaluation criteria for suppliers of goods	
Criterion	Weight
Punctuality in supply of goods (time & (quantity	35
Quality of goods supplied	30
Performance score in inquiries	18
Order volume ratio in the activity field	7
Order cancellation rate	10

The weight assigned to each performance evaluation criterion for service providers varies depending on the nature of the activity. Each operational domain is assessed using specialized indicators tailored to its specific requirements.

Monitoring safety, environmental, and energy consumption requirements in supplier performance evaluation

To enhance safety standards, protect the environment, and optimize energy consumption across the supply chain, MSC has defined a set of specialized requirements for suppliers. These requirements are systematically monitored as part of the continuous performance evaluation process. This structured oversight contributes to improved safety levels, reduced environmental risks, and alignment of goods procurement with the Group's green and sustainable strategies.

Safety and environmental requirements

For items with safety and environmental implications, relevant guidelines and requirements are communicated to suppliers via Material Safety Data Sheets (MSDS), which accompany purchase orders. Key operational requirements include:

- Proper covering of iron ore truck loads to prevent particle dispersion in the environment
- Packaging and transportation of oils in accordance with defined environmental standards

Energy consumption requirements

For items with significant energy consumption (such as electric motors), at the time of submitting a purchase request, the product's energy specifications, including energy efficiency, electricity consumption level, and energy rating, are considered as key technical parameters. This approach enables the selection of more efficient, low-consumption options and plays a vital role in achieving energy intensity reduction goals across the supply chain.

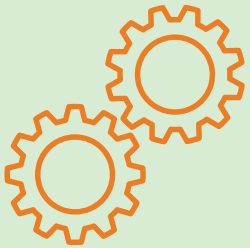
Localization of materials, components, and equipment

As a driving force in the country's steel industry, MSC has consistently placed the enhancement of national capabilities and support for domestic production at the forefront of its priorities, alongside the expansion of manufacturing capacities. Covering the entire steel value chain, from raw material extraction to final production, the company plays a decisive role in advancing industrial self-sufficiency. In this context, the localization of materials, components, and equipment is regarded not merely as an economic necessity, but as a fundamental strategy for achieving sustainable development and industrial resilience. MSC pursues this path through a systematic and collaborative approach, whereby the procurement process for goods and equipment is continuously evaluated from the perspective of localization.

MSC's localization approach is founded on empowering domestic manufacturers, commercializing key products, and establishing Iranian brands. This process is led by the Localization Unit and carried out in close collaboration with production, maintenance, support departments, and knowledge-based companies across the country.

To ensure the continuity of localized product manufacturing and expand the market for domestic producers, successful knowledge and experiences are shared through the "CarLink Platform" and the "MSC Localization Website." These platforms have been developed in cooperation with the Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO) and play a significant role in fostering the innovation ecosystem.

According to the latest statistics from 2024, over 87.71% of the procurement budget and purchase orders were sourced domestically. In terms of item count, less than 18% of purchased goods were supplied by foreign vendors.



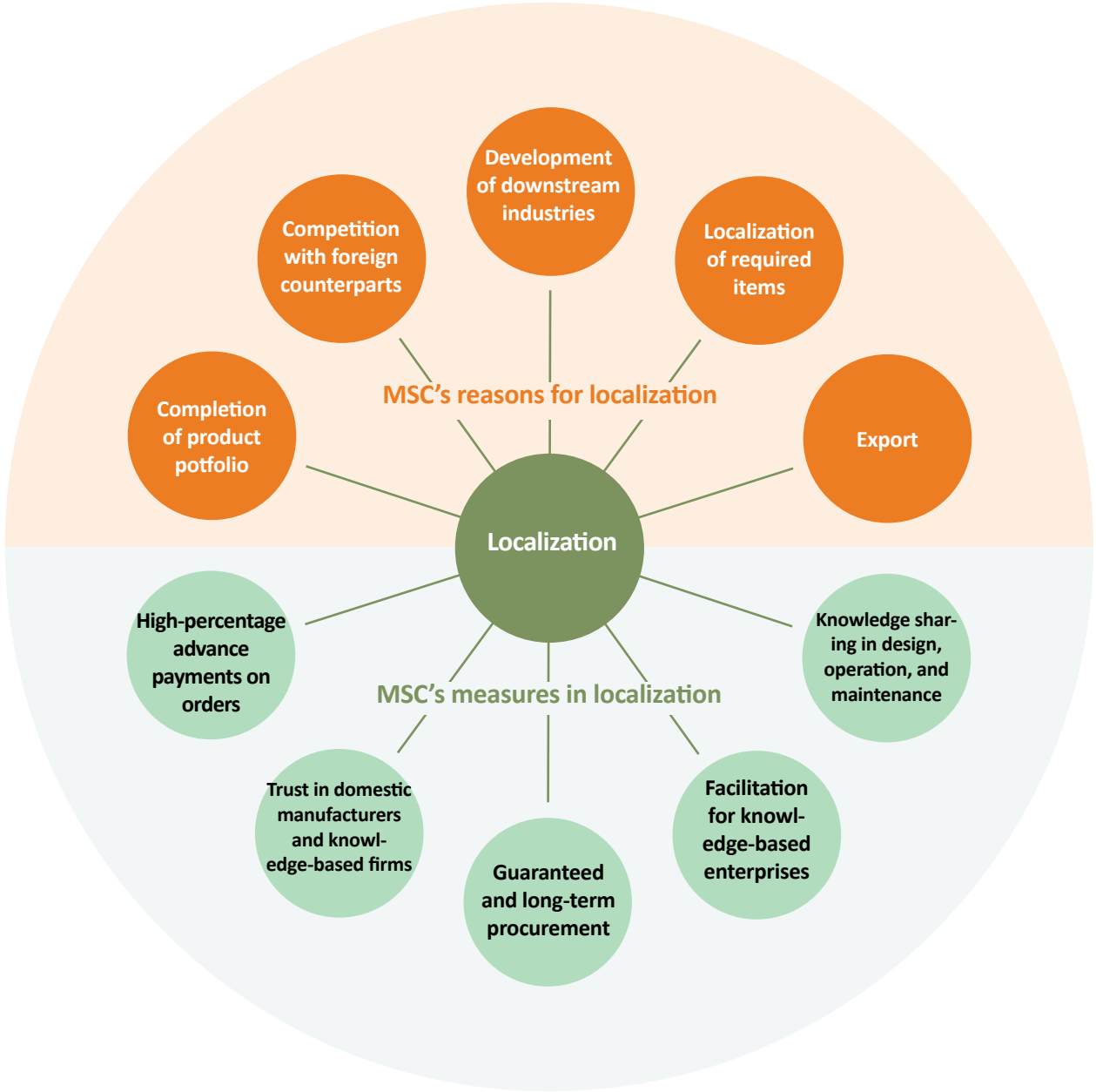
Supplying
87.71%
of the purchasing budget and purchase orders from within the country

Localization of equipment: A platform for technology acquisition and technical knowledge development

The equipment localization process at MSC is designed with the strategic goal of technology transfer and acquisition. It encompasses a comprehensive approach across three dimensions: design, manufacturing, and implementation. Each localization project is defined and executed based on the specific needs communicated by various operational units within the company.

Beyond the localized equipment itself, each project yields a comprehensive technical dossier that includes all documentation related to engineering design, technical specifications, manufacturing processes, and implementation procedures. Due to the repeatable nature of these projects, the documentation can be reused in future initiatives within MSC or its subsidiaries, ensuring minimal cost and maximum efficiency.

This approach not only enhances domestic technical capabilities but also serves as a strategic platform for accumulating organizational knowledge and reducing technological dependency across the national steel industry.



Integrated localization platform: A smart accelerator for MSC's supply chain

The Integrated Localization Platform at MSC is designed to establish an effective link between production needs and domestic capabilities. Serving as a key infrastructure in the procurement and supply process, this digital platform plays a central role in streamlining operations.

Leveraging advanced information technologies, the platform enhances transparency and facilitates seamless interactions with suppliers, significantly reducing process execution time. With rapid access to updated data, it enables precise management, intelligent tracking, and effective control of the supply chain.

By replacing paper-based procedures with digital solutions, the platform contributes to environmental sustainability and promotes eco-friendly practices. In terms of trust-building, transparent demand announcements and electronic transactions have strengthened two-way communication with suppliers, fostering healthy competition and meaningful collaboration.

As part of the Supplier Relationship Management (SRM) system, the platform provides a smart mechanism for targeted stakeholder engagement. The Integrated Localization Platform is a strategic tool for enhancing efficiency, agility, and sustainability in MSC's supply chain—ultimately improving stakeholder satisfaction

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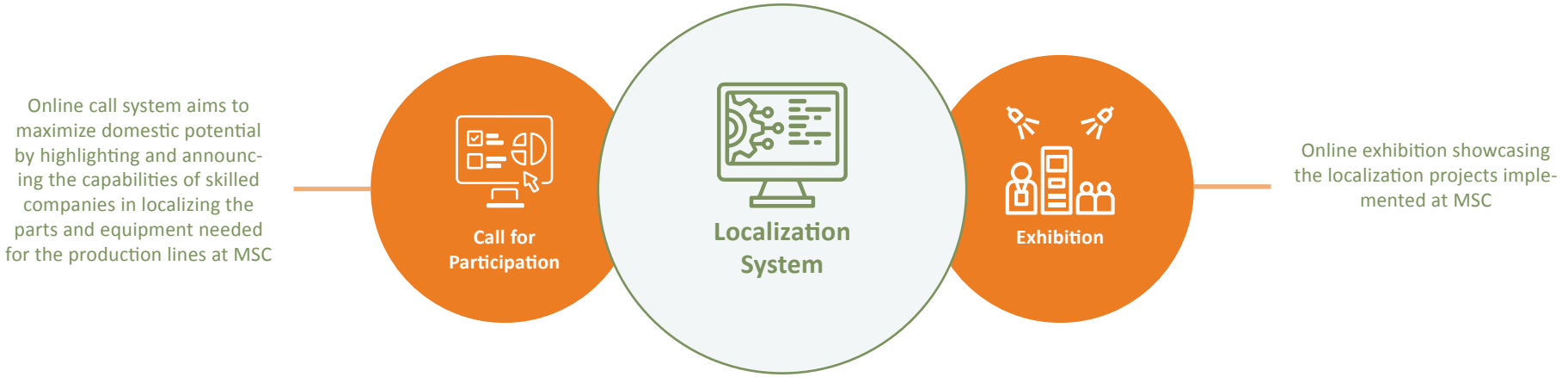


Features of the localization system

Transparency:

- Announcing MSC's localization opportunities to create equal participation conditions for all manufacturers and knowledge-based companies

Identification:

- Improved identification of manufacturers through the uploading of information on the MSC website
- Identifying capable manufacturers and domestic experts who have not yet collaborated with the company

Time efficiency:

- Capability to schedule the display of announcements
- Reducing time waste by uploading information online
- Decreasing the time required to gather information on capable manufacturers

Accessibility:

- The system's link is accessible through the company's Information System (IS-SUITE) for localization experts
- Real-time monitoring of the system's performance and capable companies at any time.
- Greater access to manufacturers due to the web-based nature of the system.

Environmental sustainability:

- Complete elimination of paper use to support environmental sustainability
- Avoidance of obsolete brochures and handbooks

Updating control:

- Instant updates and additions of information.
- Completing information and documentation online.

Targeted support of MSC for knowledge-based enterprises: a driver of localization and innovation

In pursuit of sustainable business practices and the development of domestic technologies, MSC has adopted the support of knowledge-based enterprises as a key strategic priority. This approach includes holding specialized meetings with tech-based firms and facilitating their inclusion in the company's supplier list.

Approved companies collaborate with MSC in various fields such as the design and manufacturing of materials and components, industrial equipment, technology commercialization, and product portfolio expansion. These collaborations not only lead to the acquisition of technical knowledge and the advancement of production technologies but also provide a foundation for strengthening innovation across the company's supply chain.

Last year, in line with leveraging domestic technological capabilities, a memorandum of understanding was signed with the Science and Research Town of Isfahan University of Technology. So far, 921 knowledge-based companies have registered in MSC's supply system, of which 773 have successfully obtained supplier codes, while the rest are undergoing technical evaluation. These efforts, in addition to reinforcing the domestic supply chain of the steel industry, contribute to technological growth, job creation, and the enhancement of national competitiveness on the international stage.

Localization at MSC through the Lens of Statistics

- Localization of over 11,101 parts and equipment for the first time in the country (from 2013 to the end of 2024), along with a 29% increase in the share of domestic manufacturing (from 60% in 2011 to 89% in 2024) in MSC's procurement, are key outcomes of the company's localization process. These achievements have ensured supply chain sustainability, mitigated the impact of sanctions, reduced procurement lead times, and resulted in foreign currency savings, all while maintaining product quality..

%89

- More than 93% of MSC's refractory materials are localized and supplied domestically. Plans are underway, in cooperation with universities and knowledge-based companies, to reach 100% domestic supply in this area..

%93

- Since the start of the localization initiative, over 110,000 parts have been developed and supplied for production lines through domestic manufacturing.

110,000

- Procurement orders worth 880,000 billion Rials were issued to knowledge-based companies in 2024 as part of the company's localization efforts.

88,000
Billion Rials

- 16 million Euros in foreign currency savings was achieved in 2024 as a direct result of MSC's localization initiatives.

16
Million Euros

Localization development in the Mobarakeh Steel Group: A path to knowledge synergy and industrial self-sufficiency

The expansion of localization across the Mobarakeh Steel Group is not only a strategy to reduce dependence on foreign suppliers, but also an effective tool for improving production quality, increasing employment, and advancing domestic technologies. Accordingly, a series of strategic measures have been implemented to coordinate and integrate the localization process across the group:

- Transfer of localization technical knowledge to subsidiary companies
- Establishment of a specialized network among MSC's localization experts and those of the group's companies to address daily operational needs
- Revision of the localization process with the aim of consolidating procurement needs, encouraging investment by domestic and knowledge-based manufacturers in advanced technologies, and extending the process to all purchasing units within the group

The outcome of this approach was the domestic manufacturing of 11,101 spare parts and equipment by internal and knowledge-based companies by the end of 2024, an achievement that reflects the sustainability of the localization strategy and MSC's commitment to strengthening national technological infrastructure.

Localization in the supply of consumable materials: A firm step toward self-sufficiency

The core objective of localization is to reduce dependence on foreign sources while empowering domestic manufacturers and creating sustainable employment. In this regard, MSC, by identifying domestic capabilities and supporting qualified producers, now sources part of its essential consumable materials, such as refractories, oils, lubricants, chemicals, and melting additives, from local suppliers.

This approach not only strengthens the domestic supply chain but also plays a vital role in developing the country's industrial infrastructure and enhancing the steel industry's resilience against external fluctuations

Research and innovation: The embodiment of wisdom on the path to shaping the future of the steel industry

In MSC's vision, innovation is not merely a competitive advantage, but the embodiment of strategic wisdom in shaping a sustainable and thriving future. With a deep understanding of the rapid pace of technological change and the complexity of environmental and economic challenges, the company has built its path on purposeful research and meaningful innovation, a path where intelligent need recognition, knowledge-based decision-making, and timely, effective action converge to forge a wise future for the steel industry.

The research and innovation department at MSC represents the institutionalization of knowledge and systemic insight within the organization. Acting as the scientific backbone for production, support, and management processes, and through the prudent management of innovation, it provides the foundation for addressing the future challenges of the steel sector.

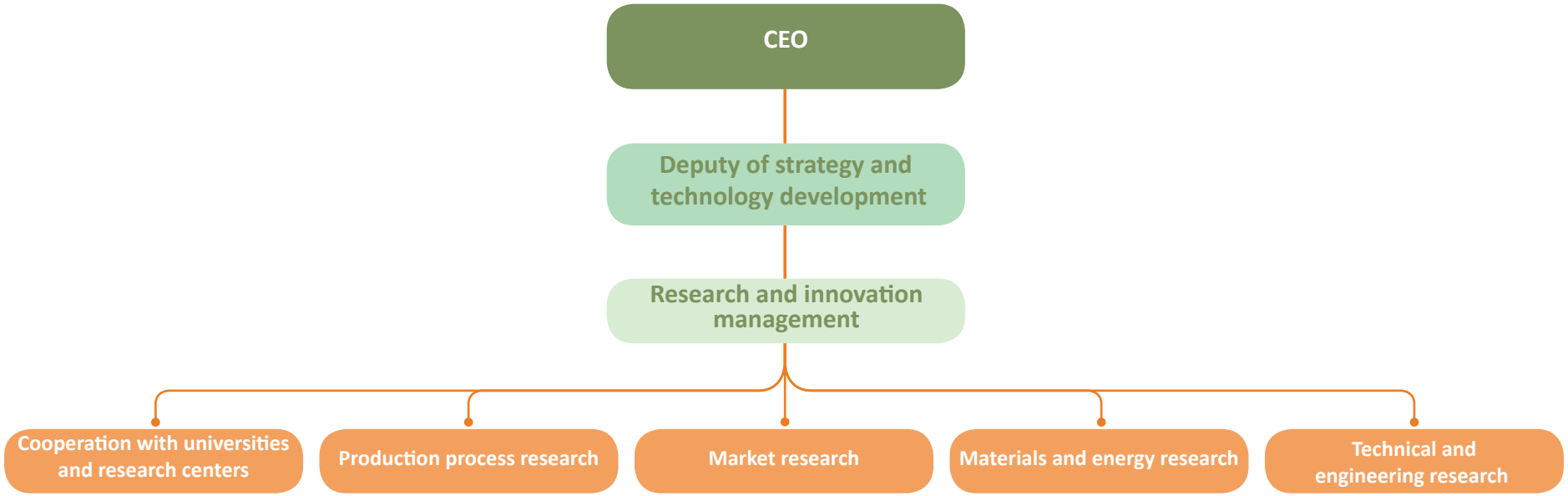
Currently, more than 150 research projects are underway at the request of the company's production, support, and administrative units under the supervision of this department. These projects reflect the alignment of operational issues with scientific approaches and, through a problem-driven and wisdom-based mindset, contribute to the continuous improvement of product quality, enhancement of process efficiency, and fulfillment of environmental requirements.

To expand the scope of learning and generate new knowledge, MSC has established an extensive network of scientific collaboration with universities, research centers, science and technology parks, and knowledge-based enterprises. These interactions not only enrich the organization's internal scientific capacity but also provide a platform for synergy between theoretical knowledge and practical experience.

The leadership of this knowledge network is managed by five specialized departments, each of which, with an analytical and forward-looking approach, guides research projects and ensures that research is directed toward solving real-world problems and creating effective and sustainable solutions.

Relying on collective intelligence and structured innovation, MSC is preparing itself for a world in which only organizations that are knowledgeable, dynamic, and committed can endure.

Research and innovation structure at MSC



The technical and engineering research

This department supports and oversees research projects aimed at increasing equipment efficiency and optimizing both core and support processes along the production lines. With the emergence of Industry 4.0 concepts, a significant portion of this department's activities has shifted toward implementing research projects focused on topics such as robotics and smart automation

Materials and energy research

This department supports and supervises research projects on topics such as the supply of raw materials and energy required for production and support processes. Given the growing constraints in accessing high-grade mineral resources facing the steel industry, a major part of the department's activities is now dedicated to managing research projects in the field of mining.

Production process research

This department focuses on the feasibility of new processes and the development of innovative products. In light of national and international environmental regulations facing downstream steel industries, such as the automotive and home appliance sectors, a major part of this department's activities is dedicated to managing research projects related to the production of advanced steel products with higher strength-to-weight ratios compared to conventional steels.

Market research

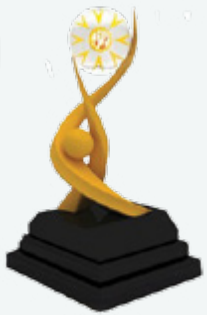
This department manages and supports corporate research projects covering areas such as sales, investment, finance, and human capital. In addition, given that the development of a circular economy has been adopted as one of the company's key strategies, the advancement and management of research projects related to circular economy concepts and reducing the use of natural resources have also been assigned to this department.

Collaboration with universities and research centers

This department serves as a support unit for other departments and is responsible for tasks such as drafting and signing research contracts, overseeing project execution, and preparing and compiling reports. In line with the company's evolving approach to innovation management and its transition toward an open innovation system, supporting the innovation ecosystem and managing open innovation processes have also been added to the department's responsibilities. Through coordinated efforts under the integrated management of the Research and Innovation Unit, more than 40 research contracts, totaling 550 billion Rials, were signed with universities and other scientific and research institutions across the country in 2024 alone. As a result, the number of ongoing research projects managed by the Research and Innovation Unit has exceeded 150.

MSC Wins the highest distinction at the 8th National Award for Iran Technology and Innovation Management

At the 8th National Award for Technology and Innovation Management in Iran, the country's top performers in the field of technology and innovation were honored. MSC Company was the only organization to receive the Silver Trophy, the highest level of this prestigious award. To date, no company has ever achieved the Golden Trophy. MSC participated in this national award under the slogan: "MSC; A Pioneer in the Steel Industry.



The Story of Dorsa

Winner of the Prestigious ASPA 2024 Award

Dideh Rayan Sanat-e Esfahan (Dorsa), one of the investee companies of MSC's Venture Capital Fund, has been honored with the 2024 award from the Asian Science Park Association (ASPA). This prestigious annual award is granted to innovative, capable, and successful companies in the fields of technology, management, and specialized expertise.

Dorsa specializes in monitoring, diagnostics, and optimization of industrial processes using advanced technologies such as image processing, machine vision, and X-ray systems. This knowledge-based company traces its roots to research activities initiated nearly two decades ago by a group of professors and graduates from Isfahan University of Technology. Today, it stands as a successful model of indigenous technological development in the steel industry and beyond.

By harnessing the talents of young Iranian elites, Dorsa has opened new frontiers in advanced technologies and has become a symbol of the synergy between academia, industry, and targeted investment within the country's innovation ecosystem.

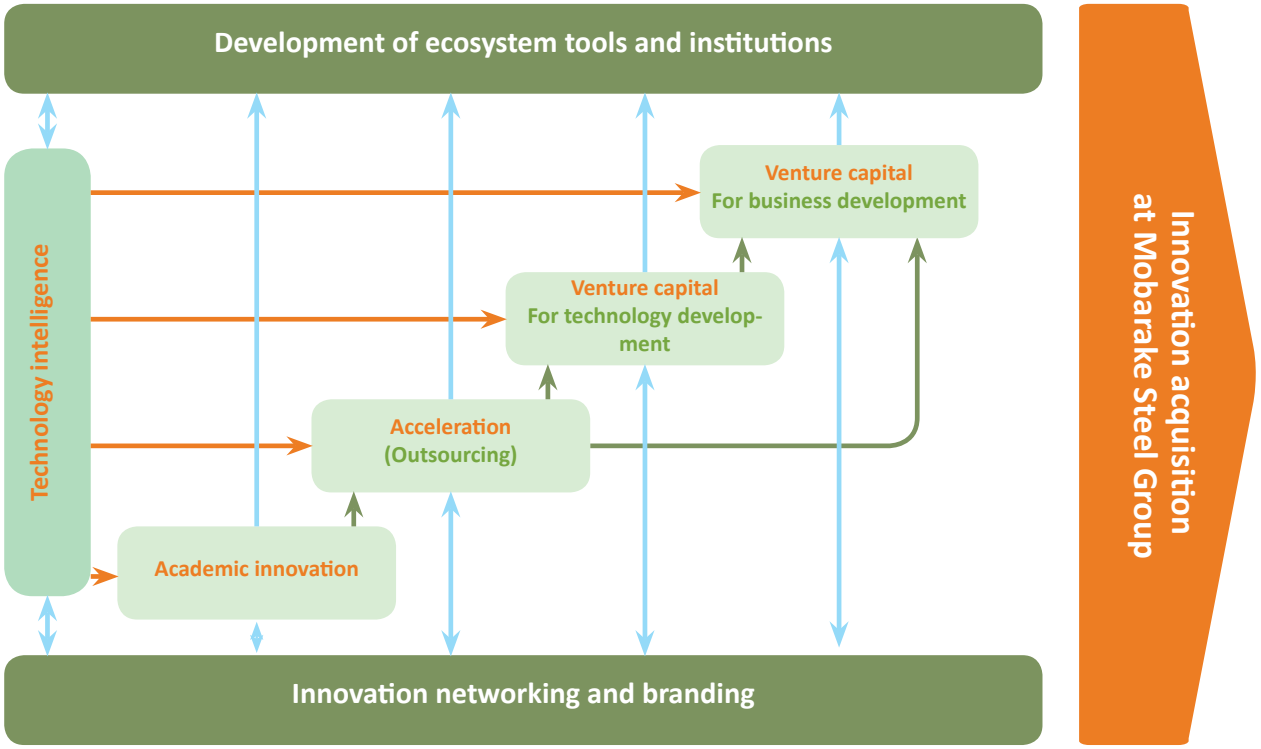
Transformation in innovation strategy: MSC's transition to an open innovation ecosystem

Since 2017, recognizing the need to revise traditional R&D approaches, MSC has embarked on a new path in innovation management. This strategic decision was made in response to evolving market demands, the vision of global competitiveness, and the necessity for broader synergy with actors across the innovation ecosystem. Comparative studies revealed that global steel giants such as POSCO and TATA Steel have moved beyond conventional R&D models, designing agile and flexible structures for open innovation. In these models, R&D centers have transformed into open, network-based spaces connected to innovation ecosystems, where tools such as accelerators, innovation hubs, technology observatories, venture capital, and technology commercialization play central roles. In line with this shift, MSC developed its Strategic R&D Roadmap to define the framework for transforming the company's innovation system. With a forward-looking perspective, this roadmap encompasses key pillars such as establishing innovation centers, strengthening technology foresight, developing technological intelligence, shaping the innovation ecosystem, acceleration, networking, and attracting venture capital.

In 2020, a practical and impactful step in this transformation was taken with the establishment of MSC's non-governmental corporate venture capital research and technology fund (MSTID Fund). This entity was tasked with driving the development of MSC's innovation ecosystem and serving as a bridge between the company and the scientific, technological, and entrepreneurial communities.

MSTID quickly advanced along its path of growth and development, facilitating investment, supporting startups, and implementing innovation infrastructure. It created a robust foundation for active engagement, knowledge-based synergy, and sustainable value creation. Today, MSC is not merely a manufacturing company, but a smart actor within the national innovation ecosystem, an enterprise that, with deep insight into technological transformations, has activated its capacities toward open innovation and future-making.

Main processes of MSTID Fund (level of investment in the innovation ecosystem at MSC)



Venture capital

Financing is one of the most critical pillars of any innovation ecosystem, and in this regard, venture capital is the primary service offered by the MSTID Fund. This approach encompasses venture investment in two key areas: business development and technology development. Venture capital in business development is a strategic solution for harnessing the innovative capacities of entrepreneurs to meet essential needs within Mobarakeh Steel Group's supply chain, diversify its business portfolio, and ensure long-term sustainability. Moreover, through venture capital instruments, the MSTID Fund supports the development of emerging technologies, from academic and laboratory stages to pilot, semi-industrial, and industrial phases, and ultimately transfers these technologies to end users, enabling enhanced performance in Mobarakeh Steel Group's steel production and supply operations.

Venture capital investment process

Performance of venture investment process

Venture capital committee

Committee duties:

- Policy-making and approval of support plans for knowledge-based companies within Mobarakeh Steel Group
- Policy-making and approval of Mobarakeh Steel Group's support initiatives for the technology ecosystem
- Policy-making and approval of venture capital investments within Mobarakeh Steel Group
- Policy-making and approval of Creating Shared Value (CSV) initiatives

Portfobook

This book serves as the profile of companies that have received investment from MSC's Venture Capital Fund. To date, 29 companies in the fields of business development and technology development have received various forms of funding from MSTID Fund. Each of these companies represents a significant step forward in advancing industry and creating new opportunities within the innovation ecosystem.

The status of venture capital investment in MSTID

Indicator	unit	2023	2024	Total from 2022
Venture capital investment in business development	Billion Rials (number)	3930 (13)	790 (3)	6136 (24)
Venture capital investment in technology development	Billion Rials (number)	2325 (7)	---	3405 (15)
Acceleration	Billion Rials (number)	241 (4)	----	241 (4)
Total	Billion Rials (number)	6496 (24)	790 (3)	9782 (43)

Academic innovation

Industry and academia: Two sides of the innovation coin

In all innovation ecosystems, universities are regarded as the source of innovation. To invigorate the ecosystem, universities must be encouraged to focus on the core challenges we aim to address. To achieve this, Mobarakeh Steel Group has redesigned its engagement model with universities across the country through a formal framework titled the "University–Industry Collaboration Maturity System." This framework defines and categorizes over 15 types of collaboration across various maturity levels. These collaborations are formalized through contracts with selected universities, forming a joint agenda for cooperation between the two entities.

Research grants

Thesis-based research projects are a cornerstone of graduate education in universities. Industries guide these projects toward their strategic needs by offering research grants to professors and students. This approach fosters industry-relevant knowledge production, cultivates specialized talent, and identifies academic experts. MSC has adopted this model and, by the end of summer 2024, aligned 808 out of 1,500 student-submitted proposals with its strategic priorities, allocating 326 billion Rials in financial support.

Grant allocation process

1	2	3	4	5	6	7
Thesis upload by the student on the MSC research grant portal	Proposal approval by the academic supervisor	Initial review by the designated intermediary	Evaluation and prioritization of proposals by the MSTID Fund's expert panel	Participation in empowerment programs (Toranj) organized by MSC	Grant disbursement to the student and academic supervisor	Engagement in technology cores, formation of a knowledge-based company, and support from MSC's Venture Capital Fund

Partner universities collaborating with MSC in ecosystem development

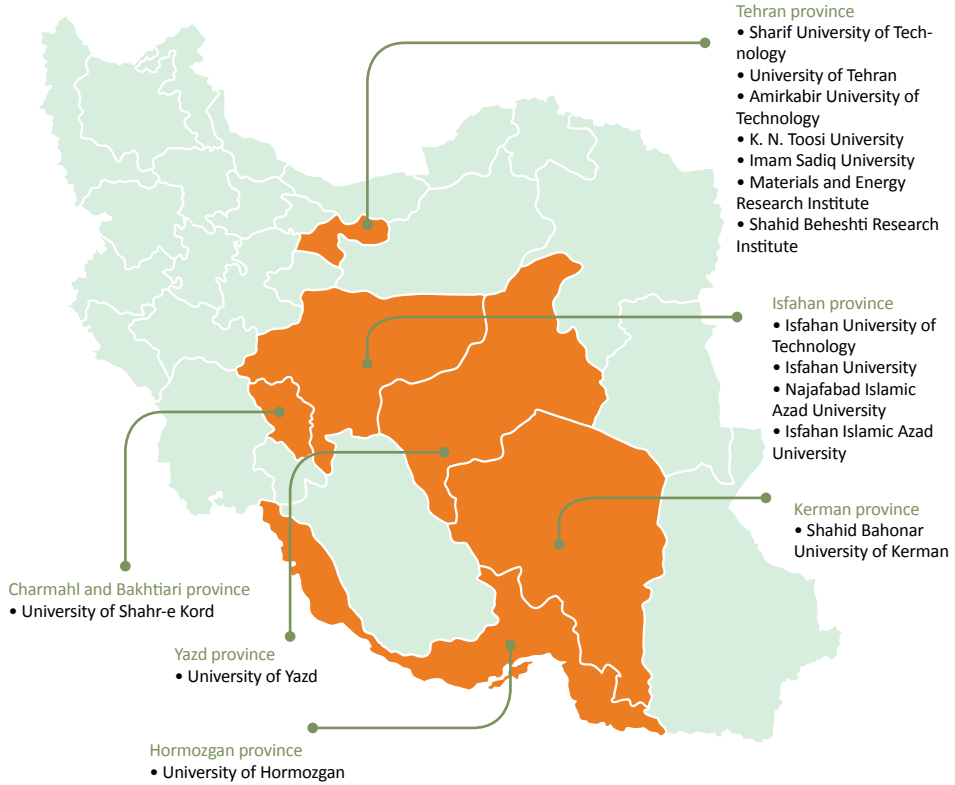
In line with establishing a strong bridge between industry and academia, the MSTID Fund has entered into collaborations and signed contracts with 20 universities across the country. These partnerships, aimed at facilitating knowledge exchange and developing advanced technologies to address real industrial needs, have been designed in various formats. Through this dialogue, the research and development process is accelerated, and the empowerment of students and researchers for effective participation in industrial projects is strengthened.

MSC innovation centers

MSC's university-based innovation centers strive to build networks within the steel industry's innovation ecosystem by empowering and encouraging students to engage in teamwork, form interdisciplinary teams, and participate in challenge- or demand-driven events related to the steel industry.

Benefits of membership in MSC innovation centers:

- Access to the centers' welfare and administrative facilities
- Direct interaction with MSC experts
- Eligibility to receive approved research grants
- Participation in evaluation and capacity-building programs



- Opportunity to form technology teams and units and be introduced to MSC's specialized accelerators
- Use of co-working spaces
- Participation in industrial tours

MSC Innovation center at Isfahan University - an area of 270 m2

MSC Innovation center at Najafabad Azad University- an area of 600 m^2

MSC Innovation center at Isfahan University of Technology - an area of 1200 m^2

MSC Innovation center at Yazd University- an area of 800 m^2

MSC Innovation center at Shahrekord University- an area of 800 m^2

Technology development

A Step beyond industry boundaries

In cases where Mobarakeh Steel Group requires access to advanced technologies to enhance its performance in steel production and supply, and such access is not feasible through conventional short-term methods such as technology purchase or transfer, or when the technology is still in its early development and readiness stages, MSTID Fund employs venture capital tools to initiate and guide the development process. Depending on the case, this process spans academic and laboratory stages through to pilot, semi-industrial, and industrial phases. Ultimately, the developed technology is delivered to end users.

MSTID's technology development investments, from contract to strategic pilots

In the path of strategic technology development, MSTID Fund not only identifies potential and secures financial resources, but also designs and leads the investment process for implementing technological pilots, with a deep understanding of the innovation value chain. This effective step begins with needs analysis and thorough technology assessment and continues through to the final deployment of pilots within real industrial settings.

In this model, after funding is provided by the Fund and a contract is signed with the selected tech team or knowledge-based company, the Innovation Factory unit of Mobarakeh Steel Group assumes responsibility for overseeing project implementation. This unit, leveraging its expertise in technology management, ensures that projects progress according to schedule, budget, and expected outcomes.

The pivotal point in this process is the deployment of technological pilots at the "Strategic Technology Development Campus of MSC", a technology-driven ecosystem that functions as a real industrial laboratory, providing a space for testing, refining, and preparing new technologies for industrial-scale implementation. At this stage, technologies that have passed the laboratory phase enter a semi-industrial environment, where their actual performance is evaluated under conditions close to real industrial operations.

This mechanism reflects a systematic approach to technology investment, an investment that goes beyond mere resource allocation and continues until results are achieved, value is created, and the technology reaches maturity.

MSC Strategic Technology Development Campus

Innovation factory

Innovation factories are key components of the innovation and technology ecosystem, supporting the creation and growth of startups and innovative businesses. In other words, these factories are vital drivers for enhancing innovation levels in countries. By facilitating startup growth, strengthening collaborations, and creating an environment for the commercialization of advanced technologies, they contribute to sustainable development. At the high-tech level, innovation factories provide a specialized and professional space that combines technological infrastructure, support services, training, and networking.

In line with establishing such infrastructure for high-tech technologies and providing workspace for selected companies, MSC Venture Capital Fund has founded an innovation factory.

Companies applying for investment from MSC Venture Capital Fund, upon initial acceptance, are divided into two categories: some join the portfolio of investee companies to continue the process, while others, if their proposed project involves a higher degree of risk, are referred to the innovation factory. At the factory, a contract is signed with the company to build a pilot version of its project to demonstrate its feasibility to the industry.

A New pulse for industrial innovation: MSC technology development complex

With the aim of enhancing technological infrastructure and supporting innovative ideas, the second phase of MSC Technology Development Complex has been launched with an investment of 500 billion Rials on a 2,711 m2 site. This project is scheduled to be completed by March 2026 and is set to become a new platform for nurturing human capital, developing strategic technologies, and fostering the innovation ecosystem in the steel industry.

Innovation factory

Technological intelligence

The innovation compass toward the future

In an era of unprecedented technological change, organizations must make informed, forward-looking, and data-driven decisions to maintain their competitive edge. Within this context, "technological intelligence" serves as a key tool, playing a vital role in enhancing technology-related decision-making, a role that Mobarakeh Steel Group pursues in a structured and future-oriented manner.

Technological intelligence at Mobarakeh Steel Group is a strategic-analytical system designed to strengthen decision-making in areas such as technology development, entry into new markets, large-scale investment, and selection of strategic partners. This system is an effort to look beyond the present and create a clear picture of the technological and industrial paths ahead .The core engine behind this intelligence is a set of foresight-driven activities:

- Analysis of global megatrends shaping the steel industry, such as digitalized production, low-carbon economy, circular economy, and smart supply chains
- Monitoring and analysis of emerging technologies, from artificial intelligence and the Internet of Things to nanotechnology and green hydrogen
- Development of technology trend analysis documents, which synthesize these observations and analyses into formal reports shared across Mobarakeh Steel Group's innovation ecosystem

These documents not only shape the innovation trajectory of MSC, but also serve as the foundation for aligning research activities, investments, technological support, and partnership development across the entire innovation ecosystem. Crucially, these documents are living and dynamic, they are continuously monitored, reviewed, and updated to remain in sync with the rapid changes of the external environment.

At MSC, technological intelligence is not merely an analytical process, it is a strategic compass for every component of the innovation ecosystem. It is a system that extracts new value-creation pathways from data, trends, and futures, providing intellectual and analytical support for bold decision-making toward transformative futures.

Industry 4.0 business development center

This project has been implemented through a partnership between the University of Tehran and MSC, with MSTID Fund serving as the executing agent. In light of the growing adoption of open innovation approaches in technology and business development, and the emerging role of large enterprises in steering and shaping innovation ecosystems as fertile grounds for the growth of new technologies and businesses, a need has gradually emerged for new institutions and functions within these ecosystems. These functions were largely absent or irrelevant in earlier, more traditional approaches.

One such emerging function, often referred to as the "Innovation Ecosystem Watchtower," provides interactive platforms and information exchange opportunities within the ecosystem. These platforms enable ecosystem architects to engage deeply and continuously with stakeholders, gaining access to the latest trends and ideas that are shaping the future of industry. They help identify and access relevant resources, ultimately allowing businesses to prepare for and adapt to potential future changes.

In line with its innovation strategy, and following the establishment of various institutions and processes such as venture capital, acceleration programs, university innovation centers, and technological intelligence, Mobarakeh Steel Group has launched the first Industry 4.0 Business Development Center. This center, established in collaboration with the University of Tehran's Science and Technology Park, is tasked with ecosystem watchtower functions in the domain of Industry 4.0.

MSC has invested 1,000 billion Rials in this center, which occupies a space of nearly 2,800 m2. The center is capable of hosting around 200 to 250 individuals in the field of Industry 4.0 and aims to leverage technological services for MSC.

The core function of this center differs from MSC's other centers located at various universities such as Isfahan University of Technology, University of Isfahan, Shahrekord University, and Khorasan University. This center is specifically focused on Industry 4.0. Moreover, while other centers primarily admit technology teams, this center also accepts relatively mature companies, providing them with the opportunity to initiate their opera-

tions. In other words, this center is more inclined toward industrial and corporate development, and it is expected to yield significant products.

Objectives of the center

- Introducing innovation ecosystem actors and students to the principles and foundations of digital transformation in the steel industry and its implementation methods
- Promoting a culture among professionals in the steel industry value chain to accelerate the adoption of emerging technologies
- Creating a platform for networking among innovation ecosystem actors, academics, accelerators, investment funds, and experts from large industries
- Establishing a space for interaction between MSC and businesses or startups active in Industry 4.0 and digital transformation
- Expanding domestic and international relations and industrial collaborations

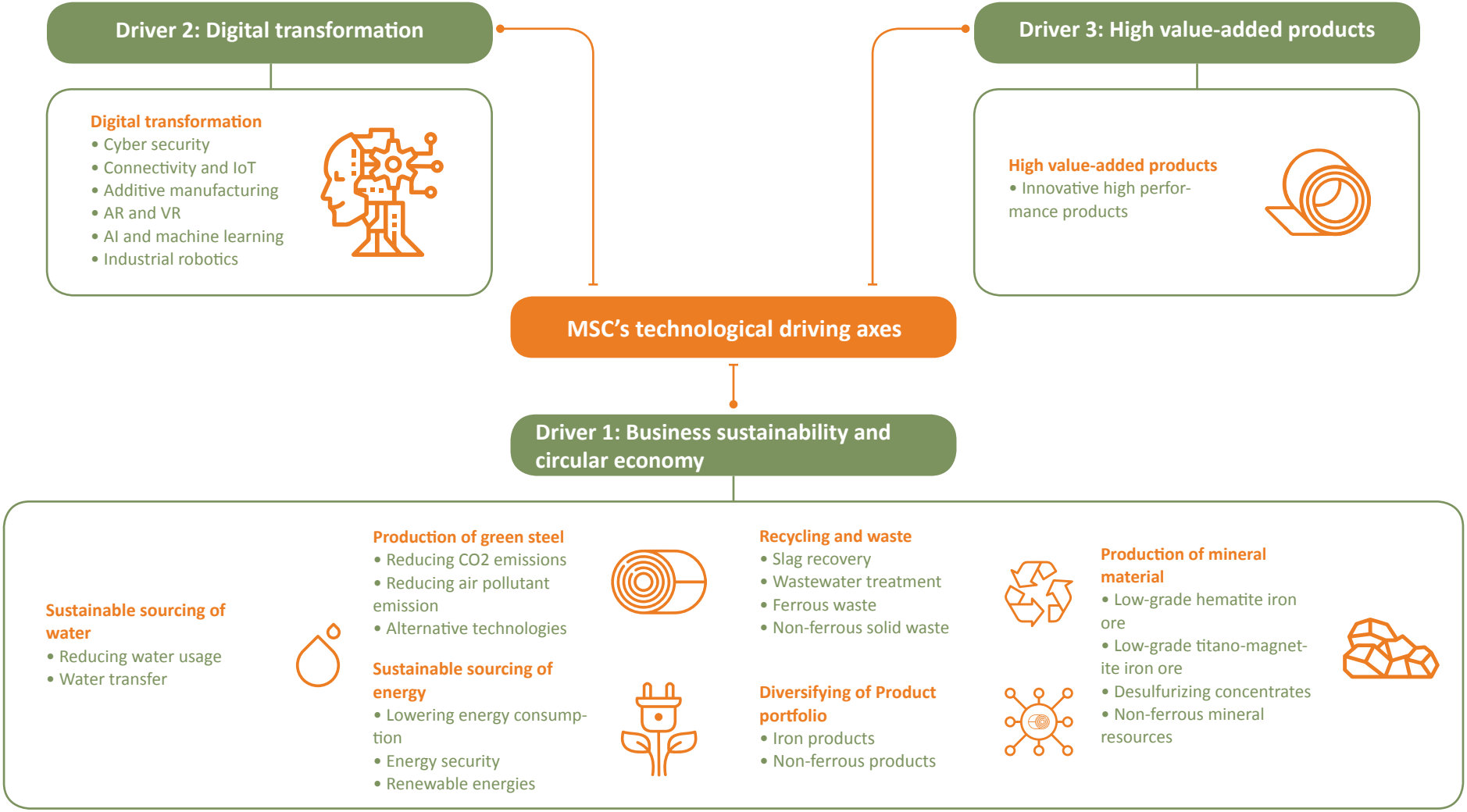
Services:

- Hosting educational, marketing, and networking events in a multifunctional auditorium with a capacity of 110 people
- Silent room
- B2B meeting space equipped to international standards
- Fully equipped co-working space
- Meeting rooms with various capacities: 4, 10, and 20 persons
- Reception and administrative services (centralized secretary service) for resident companies and non-resident members
- Hosting innovative and technology-based companies and start-up teams (dedicated rooms and offices)

Industry 4.0 business development center

Technological driving axes

MSC's Venture Capital Fund has implemented its innovation ecosystem development program and venture investment strategies under three overarching drivers: circular economy, digital transformation, and high value-added products. The thematic axes of these three drivers have gradually evolved over the years of MSC's operations and are currently pursued through the following areas.



Branding and networking in the innovation ecosystem

In the implementation of open innovation, purposeful branding and intelligent networking are two essential pillars. To attract top talent, academics, technologists, and entrepreneurs, Mobarakeh Steel Group must build a credible and innovative image, one that reflects its commitment to foresight and strengthens its capacity for interaction within innovation ecosystems.

Accordingly, the MSTID Fund, as a central actor in the group's innovation ecosystem, leverages modern communication tools and network development strategies to reinforce MSC's position as a leading industrial supporter of innovation. This effort is not merely about branding, it is a strategic response to the reality that innovation ecosystems flourish only through broad and dynamic networked relationships among their actors.

By focusing on effective branding and targeted networking, MSC's Venture Capital Fund creates a platform for attracting key players and enhancing technological collaboration, because the beating heart of innovation lies in the interactions among ecosystem participants, not in isolated structures. The events implemented for branding and networking in the innovation ecosystem are:

Fooladisho

An innovative mechanism linking capital and technology

As part of its efforts to develop the innovation ecosystem and strengthen strategic ties between industry and knowledge-based enterprises, MSTID Fund has designed and launched a specialized event titled "Fooladisho." This event serves as an operational mechanism for identifying, evaluating, and supporting talented individuals and promising knowledge-based companies, with the goal of investing in technology development and business growth.

"Fooladisho" is a flexible and purpose-driven event held in two formats:

- In the local format, events are organized in science and technology parks, accelerators, and entrepreneurial communities across various provinces, creating a platform to identify local and regional capacities.
- In the thematic format, the event focuses on solving a specific industrial challenge within Mobarakeh Steel Group's value chain, and knowledge-based companies present technological solutions tailored to these challenges.

Through this event, young innovators and technologists from across the country have the opportunity to showcase their capabilities, achievements, and innovative solutions before expert judges and investors, competing for funding from the MSTID Fund. In doing so, the path for nurturing and scaling startups and knowledge-based companies becomes smoother through targeted and intelligent support

In addition to its value in investment and technology transfer, "Fooladisho" delivers another key outcome: shaping the image of Mobarakeh Steel Group as a forward-looking, innovative industrial leader in the minds of the academic and entrepreneurial communities across the country. Moreover, this mechanism enables MSTID Fund to expand the geographical scope of its technology investments throughout Iran, resulting in the intelligent distribution of growth opportunities on a national scale.

"Fooladisho" is not merely an event, it is a bridge between brilliant ideas and industrial investment capacities, paving the way for future-making in both the steel industry and the country's young technology talent.

Toranj

Strategic empowerment program for young innovators

In line with developing a creative and future-oriented human capital, the Toranj program has been designed and implemented as one of Mobarakeh Steel Group's strategic initiatives to empower talented and innovative students across the country. This program takes a structured and forward-looking approach to nurturing a new generation of young innovators, individuals equipped with knowledge, skills, and motivation to take on key roles in the future of industry.

Students who receive MSC's research grants enter the Toranj empowerment pathway. This journey begins with the creation of a detailed database of each student's technical and soft skills. Following initial assessments, deeper steps are taken to support their professional growth.

Key components of the Toranj empowerment process include individual coaching, development of personalized growth plans, personality assessments, and motivational events aimed at fostering entrepreneurial spirit, self-confidence, and networking among students and innovation ecosystem actors.

Toranj events are one of the program's most impactful pillars, inspiring platforms where successful entrepreneurs share their growth journeys and challenges with the younger generation. The goal of these live interactions is to inspire, transfer experience, and cultivate a growth mindset among students. So far, 18 Toranj events have been held at universities across the country, reflecting strong academic engagement and the program's tangible impact.

Toranj is more than a support initiative, it is a purposeful growth pathway, an inspiring movement to build a future where knowledge and innovation are intertwined with responsibility and human capability

Ham-masir

Creating dialogue for a technological future between MSC and universities

In MSC's renewed vision for technology and innovation development, purposeful and strategic engagement with universities has taken on a central role. The first step toward building these new forms of collaboration is intentional and informed dialogue, because without a shared understanding of goals, approaches, and opportunities, sustainable partnerships cannot emerge.

Accordingly, MSTID Fund has designed and implemented a series of events titled "Ham-masir" at universities and faculties across the country to foster this dialogue. These events not only serve as a platform to present MSC's new strategies and directions in innovation, but also open a direct and unmediated channel of communication with the academic community.

Each "Ham-masir" event focuses on several key areas:

- Explaining the processes and mechanisms for academic collaboration with MSC, from research support pathways to entry into technology investment processes
- Introducing innovation domains and transformation drivers within Mobarakeh Steel Group, areas where students, faculty, and researchers can contribute to value creation and receive support

Creating opportunities for networking between academic elites and MSC's industrial teams through Q&A sessions, interactive panels, and applied presentations

These events are held periodically at various universities and gradually play a role in developing a shared language between industry and academia, clarifying mutual expectations, and facilitating the entry of scientific talent into impactful technological pathways.

"Ham-masir" is not merely a promotional program, it is the first link in a strategic chain of collaborations that connects MSC to the country's future-making academics. It marks the beginning of a bridge between scientific ideas and real industrial needs, a bridge that can only lead to sustainable innovation through active academic participation.

Portfo Techno Tour

A bridge between innovation and industry

In pursuit of a technologically advanced, sustainable, and competitive future, "Portfo Techno Tour" has emerged as one of Mobarakeh Steel Group's innovative initiatives. This event is a strategic response to the growing need for technological transformation and agility in industrial innovation, a robust bridge between the ecosystem of knowledge-based companies and the technological demands of large industries.

The philosophy behind Portfo Techno Tour is based on creating synergistic opportunities between two key players: technology providers and industrial technology seekers. In this event, knowledge-based companies funded by MSTID Fund come together to directly engage with managers, experts, and decision-makers from the industrial sector, showcasing their capabilities and innovations. This two-way interaction reduces the cost and time of market development for tech companies, while enhancing technological levels, improving productivity, and enabling faster responses to industrial needs.

Portfo Techno Tour is more than a trade show or business meeting, it embodies MSC's commitment to facilitating technology commercialization and accelerating the flow of innovation at the heart of the country's industrial landscape. From these connections, solutions and initiatives emerge that not only address current industrial challenges, but also open new horizons for transformation, self-sufficiency, and technological resilience.

Inspired by the belief in innovation's central role in the future of industry, this event provides an inspiring platform for interaction, learning, and synergy between the new generation of innovators and industrial leaders, a space where ideas can take root, flourish, and evolve into real solutions for today's and tomorrow's challenges.

Portfo Techno Tour is MSTID Fund's series of technology tours, held with two overarching goals: identifying and addressing the technological, innovative, and knowledge-based needs of Mobarakeh Steel Group's ecosystem, and expanding the market for products and services offered by MSTID Fund's portfolio companies. These tours, which span across Iran, play a vital role in networking MSTID Fund's investees with managers from industrial and mining enterprises.

Data-driven problem solving

In today's world, where industrial processes are becoming increasingly complex, relying solely on past experience and traditional methods is no longer sufficient to address emerging challenges. Data-driven problem solving has become one of the most effective approaches in modern decision-making, now at the forefront of industrial transformation.

Recognizing the urgency of this shift, MSC has designed and implemented a hybrid, locally adapted methodology based on Six Sigma and Business Analysis. This approach enables precise analysis, systematic control, and targeted improvement, all grounded in real data.

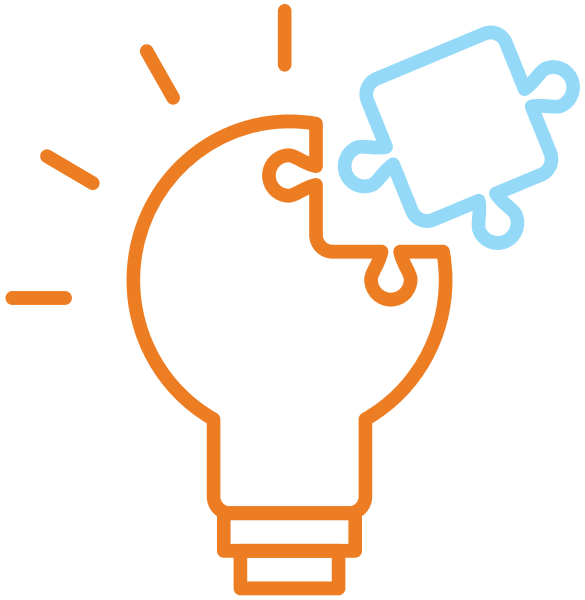
By developing this methodology, MSC has significantly enhanced its ability to tackle complex problems that were previously unsolvable through conventional means. Over the past few years, this data-driven approach has enabled the design and execution of more than 30 key projects across various departments, including steelmaking, hot rolling, cold rolling, and other operational areas. These projects have aimed to reduce costs, improve quality, increase productivity, extend equipment lifespan, apply artificial intelligence, and optimize startup times.

A defining feature of this approach is its focus on results and economic impact. Projects selected for implementation have been technically challenging, economically demanding, and strategically vital for MSC. The outcomes have not only led to tangible improvements in organizational performance but have also generated significant financial benefits.

Examples of successful projects include:

- Reducing non-metallic inclusion defects in slabs
- Identifying key parameters for superheat control and proposing improvement strategies
- Designing predictive models for mechanical properties at the Saba complex
- Modeling and optimizing sponge iron input quality and mixing
- Extending ladle refractory lifespan
- Forecasting sales prices and demand in the commodity exchange
- Increasing cold compressive strength (CCS) of pellets

Among these, the project to reduce non-metallic inclusion defects has alone generated over 5,000 billion Rials in economic savings over the past four years. This data-driven pathway has become a successful model for managing complexity and enhancing operational resilience at MSC, a model that brings industrial foresight closer to reality.



MSC on the path of digital transformation and smartization

In pursuit of its vision, “Smart MSC at a World-Class Level”, the company has designed and implemented a comprehensive Digital Transformation and Smart Industrialization Program. Anchored in global economic trends, the Fourth Industrial Revolution, and the evolution of the digital economy, this initiative aims to create new value, diversify products, reduce costs, and foster innovation at both national and international scales.

This transformative program, inspired by global developments in the steel industry, competitor behavior analysis, and emerging technology assessments, is built upon MSC’s “Value Creation System” and its vision of becoming a “World-Class Organization.” The six-year roadmap, under the slogan “Steel of Tomorrow, Smart from Ore to Color,” focuses on leveraging advanced technologies such as:

- Artificial Intelligence (AI)
- Internet of Things (IoT)
- Big Data and Advanced Analytics
- Augmented Reality (AR) and Virtual Reality (VR)
- Blockchain
- Cloud Computing and Edge Computing
- The program’s overarching goals include:
- Enhancing productivity and operational efficiency
- Improving customer experience and after-sales services
- Driving innovation in product and service development
- Elevating quality and reducing waste
- Strengthening competitive advantages
- Supporting data-driven decision-making
- Advancing digital skills among the workforce
- Building technological infrastructure to address future challenges

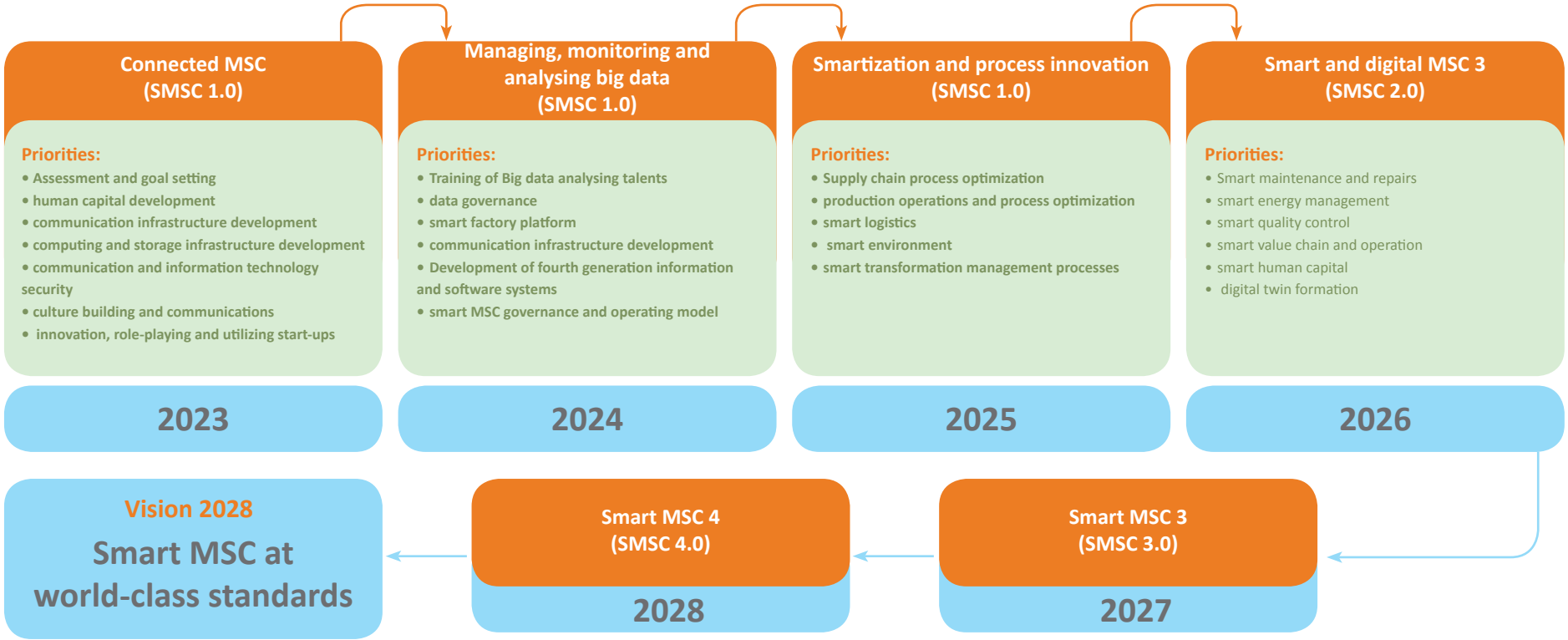
MSC’s Industry 4.0 Lab

Industry 4.0: The driving force behind steel smartification

The fourth generation of industrial automation, through the integration of smart hardware and software via the Internet of Things, enables the deployment of technologies such as artificial intelligence, cloud computing, and edge computing across the entire steel value chain, from mining to market. On this path, which aims to position MSC as the digital leader of Iran's steel industry, applications of artificial intelligence include:

- Optimization of production processes
- Analysis of customer and market behavior
- Predictive maintenance of equipment
- Enhancement of workplace safety
- Cost reduction and profitability improvement

The roadmap of MSC's digital transformation



The story of IRISA

Falatouri Data Center: the beating heart of Iran's digital steel resilience

In today's world, digital resilience and intelligent data governance are foundational to sustainable industrial development. In response to Mobarakeh Steel Group's growing need for robust technological infrastructure, IRISA (International Systems Engineering and Automation Company) has designed and launched the advanced Falatouri Data Center. This facility was built to consolidate critical data, reduce resource fragmentation, enhance security, and optimize energy consumption, making it a cornerstone of digital transformation in Iran's steel industry.

In this project:

- The power distribution system was designed with full redundancy to ensure that power outages do not disrupt equipment operation.
- The ventilation and cooling system of the center was designed with an N+2 configuration to guarantee temperature stability for the equipment.
- An uninterruptible power supply (UPS) system with an N+1 configuration and a capacity of 300 kVA was implemented to provide continuous power during emergencies.
- Additionally, a 750 kW diesel generator was installed to supply emergency power in critical conditions.
- A special focus of this center is hosting edge internet services to reduce the risk of cyberattacks and maintain backups of vital organizational data

Designed to reduce the dispersion of IT infrastructure, improve energy efficiency, and create a shared, secure platform for Mobarakeh Steel Group companies, the Falatouri Data Center plays a pivotal role in realizing the digital ecosystem of Iran's steel industry.

Key project objectives

- Establishing an integrated and resilient infrastructure to host critical data and services for the Mobarakeh Steel Group
- Enhancing IT infrastructure resilience against cyberattacks and potential outages
- Eliminating redundant infrastructures and reducing the environmental footprint of scattered data centers
- Laying the foundation for cloud computing and the digital steel ecosystem in Iran
- Optimizing economic efficiency through resource consolidation and shared utilization

Environmental benefits

- Reducing energy consumption and improving energy efficiency through high-redundancy (N2) design and high-performance equipment
- Lowering carbon footprint by preventing the construction of multiple scattered data centers and creating a shared facility for several companies
- Increasing IT resource effectiveness by consolidating digital services and minimizing excess equipment usage

Social and economic benefits

- Enhancing information security and ensuring continuity of critical services for foundational industries such as steel
- Creating specialized employment and advancing technological skills in infrastructure and data domains
- Improving economic efficiency by reducing maintenance costs, energy consumption, and cyber risk mitigation expenses
- Strengthening IT governance across the Mobarakeh Steel Group through a centralized data center
- Supporting the development of the digital economy and the transition toward Industry 4.0 via a secure and stable data infrastructure

MSC digital transformation project portfolio

The digital transformation project portfolio of MSC includes the development of a connected factory communication infrastructure, deployment of a smart factory platform, smart logistics, intelligent monitoring of environmental pollutants, smart monitoring and control of energy and fluid consumption, predictive maintenance using online equipment condition monitoring data analysis, monitoring of power transformer status, tracking and calculating the volume of raw materials using drones, and development of an intelligent operational control model for the direct reduction unit. So far, various projects in the field of smart logistics and the development of SCADA systems for environmental performance and energy consumption monitoring have been commissioned, and other projects are currently underway. Other major and innovative actions taken to advance the "Digital Transformation and Smartization" initiative of MSC include:

- Drafting the digital transformation roadmap document
- Establishing the organizational structure for MSC's digital transformation
- Reviewing the roadmap and defining digital transformation projects (in consultation with RCG)
- Forming digital transformation steering committees
- Holding training courses for developing digital leaders in collaboration with the University of Isfahan, utilizing domestic and international instructors, aimed at familiarizing MSC managers with the principles, foundations, and frameworks of digital transformation, promoting a culture of digital transformation within the organization, and creating a shared digital ecosystem for managers to facilitate the implementation of Industry 4.0 projects and programs
- Conducting digital maturity assessment of the organization
- Participating in the National Digital Transformation Assessment of Iran and receiving the Level 1 Bronze Trophy for Digital Excellence
- Signing a cooperation agreement with Isfahan University of Technology and initiating the establishment of an Industry 4.0 laboratory at the university to create sustainable and shared value, as well as to develop necessary infrastructures in academic environments, build knowledge-based networks, and accelerate the smartization journey
- Creating an Industry 4.0 ecosystem through a public call to identify capable companies in the field of the Fourth Industrial Revolution, resulting in the identification of over 50 active companies for implementing digital transformation projects across various domains
- Organizing three reverse pitch events with startups and knowledge-based companies to present MSC's existing challenges and receive smartization solutions to address them, gather innovative ideas, and maximize the use of national engineering capabilities
- Collecting ideas and proposals in the field of digital transformation based on existing challenges through the "Fooladino" initiative to engage all employees in the organization
- Establishing the MSC Digital Transformation Innovation Center at the University of Tehran's Science and Technology Park, aimed at creating a digital transformation startup studio in the steel industry and hosting innovative cores and technology companies from across the country

Smart transformation of the steel industry backed by Iranian elites

In line with its commitment to targeted support for national elites and the empowerment of the country's intellectual capital, MSC has signed a strategic memorandum of understanding with the Isfahan Province Elites Foundation. This collaboration, building upon previous engagements between industry and the scientific community, focuses on strengthening the innovation ecosystem, advancing cutting-edge technologies, and forming research clusters in priority areas of the steel sector.

Key themes of the agreement include process smartification, the application of artificial intelligence, and support for emerging technology-based enterprises. The aim of this partnership is to facilitate knowledge transfer, accelerate technological development, and forge effective links between academic elites and the country's core industries.

To date, more than 33 elite-led research projects, selected from over 120 proposals, have received support from MSC and benefited from research grants. Some of these projects, showcasing technological achievements, were introduced on the sidelines of this event.

This initiative is part of MSC's sustainable development strategy in the domains of innovation and human capital, a strategy designed to transform scientific elites into active agents of digital transformation, productivity enhancement, and industrial competitiveness.

Development of the industry 4.0 laboratory

The Industry 4.0 Laboratory has been established under the management of MSTID Fund, through a joint collaboration between the Mobarakeh Steel Group and Isfahan University of Technology. The primary objective of this laboratory is to provide educational and research services to a wide range of stakeholders, including students, faculty members, organizations, and institutions, with a particular focus on the steel industry.

Objectives

- Establish a university-adjacent space enabling simultaneous engagement of industry experts, students, and researchers with Industry 4.0 technologies
- Execute small-scale and pilot projects in the field of digital transformation, involving industry professionals, knowledge-based companies, faculty, and students to validate the application of Industry 4.0 technologies at MSC (proof of concept)
- Create pathways for nurturing talent in the use of Industry 4.0 technologies
- Deliver practical training and upskilling in digital competencies for industry specialists
- Implement and conduct stable testing of digital transformation initiatives (such as digital twins) using pilot plants
- Train a new generation of engineers equipped with digital skills relevant to Industry 4.0
- Build infrastructure for applied research and offer laboratory services to demand-driven and interdisciplinary master's and doctoral theses focused on Industry 4.0
- Raise public awareness of Industry 4.0 through student and school visits
- Establish a recognized brand in digital skills training for entry into Industry 4.0 within the steel sector, with international outreach, particularly in the Middle East, for the export of knowledge and technical services

Services offered at the industry 4.0 laboratory

- **Training and Empowerment: Delivery of specialized educational programs for students, researchers, and MSC professionals**
- **Research and Development: Support for student and faculty research projects in relevant domains through research grants, referrals to specialized accelerators, and related mechanisms**
- **Specialized Consulting: Provision of expert consulting services to students, faculty, companies, and industrial organizations to facilitate understanding of the Fourth Industrial Revolution and implementation of advanced technologies**
- **Collaborative Partnerships: Joint development and execution of research projects with universities, companies, and institutions**
- **Support for Startups and Innovative Ideas: Provision of infrastructure for transforming ideas into commercial products through ideation events and investment partnerships with accelerators**

Core sections of the laboratory

- Industrial IoT and data processing
- Cyber-physical systems
- Smart factory pilot and modeling
- Robotics pilot plant
- Virtual Reality (VR) and Augmented Reality (AR)

Localized SCADA system at MSC: A step toward technological self-sufficiency

The Supervisory Control and Data Acquisition (SCADA) system is a suite of hardware and software modules that enables real-time monitoring and control of industrial processes. Serving as a bridge between Operational Technology (OT) and Information Technology (IT), SCADA facilitates seamless data flow for real-time decision-making.

In response to sanctions-related constraints and the difficulty of sourcing technical expertise from abroad, MSC pursued the localization of its SCADA system, drawing on years of experience in maintaining and repairing legacy systems. After four years of rigorous evaluation of domestic and international prototypes, the system was successfully designed and implemented with the support of senior company leadership and in close collaboration between MSC experts and IRISA.

Key Achievements of the localization Effort

- Development of technical expertise within the country
- Independence in system development and support
- Foreign currency savings exceeding 4 million Euros
- Fulfillment of MSC's operational needs and those of other industries
- Successful deployment in the domains of power distribution, fluid distribution, environmental monitoring, and central maintenance

The system has been designed with a modular and configurable architecture, allowing for easy implementation across diverse industrial units and sectors. MSC's successful experience in this project stands as a benchmark for the localization of critical technologies in the country's strategic industries. Four defined projects in the domain of digital transformation are:

Environmental SCADA

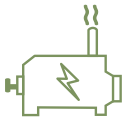
In line with MSC's commitment to providing accurate and transparent environmental pollutant data to relevant authorities, such as the Iran's Department of Environment, a need emerged for an integrated system to measure and display pollutant indicators. Previously, data was collected via equipment largely lacking industrial automation standards and then displayed on the edge of the internet, where company experts accessed pollutant levels via login credentials.

With the deployment of the SCADA system, real-time access to pollution indicators is now available to environmental unit experts. Upon any deviation in a given index, the type and location of the anomaly are immediately identified and displayed, enabling rapid corrective action. Moreover, required data is transmitted online to regulatory bodies (e.g., Iran's Department of Environment) with high precision and transparency, significantly enhancing the company's reputation and credibility.

Electrical SCADA

Automation systems that collect measured energy consumption data from factory sites and present it through graphical tools and real-time monitoring enable users to analyze production and energy consumption trends. These systems support resource management and cost reduction. With the integration of the EMS (Energy Management System) module, a technology-driven approach has been adopted to ensure efficiency and real-time monitoring of energy sources and usage. This has led to greater stability in the energy distribution network and improved support for production processes. The development of the Electrical SCADA system, initiated in 2022, has enabled these capabilities and is currently in operational use.

Engine room SCADA



With approximately 400 air handling units and 80 Engine rooms operating across MSC, consuming significant volumes of energy (gas and electricity) and fluids daily to serve personnel, the Central Maintenance Unit identified the need for a comprehensive system to monitor and control all pump stations and boiler rooms. Accordingly, a digital transformation project was defined and implemented to optimize the performance of these units and enable centralized monitoring and control via a dedicated control room. Through this system, operational efficiency of facilities can be improved over time, contributing to reduced gas consumption in boiler rooms and, consequently, lower energy input costs.

Fluids SCADA

Various development initiatives at MSC in recent years have led to extensive changes in its fluid distribution network. These changes, along with the Energy and Fluids Unit's need for modern measurement equipment, prompted the definition of Phase II of the unit's smartification project in 2022, which was successfully commissioned by the end of 2023. This project consolidates fluid consumption data across MSC and makes it accessible to users in the fluid distribution unit. Based on the control dashboards developed within the system, fluid consumption trends across different company zones are monitored, and consumption optimization measures are applied based on user behavior. As a result, optimal fluid distribution and reduced consumption are among the key expected outcomes of this initiative.

Benefits

Benefits Achieved from the Implementation of four SCADA projects in enhancing environmental performance and reducing energy consumption:

Electrical SCADA

- Improved stability in power generation and distribution
- Enabled fault detection and root cause analysis across the network
- Introduced analytical engineering capabilities for power grid diagnostics
- Enhanced monitoring capacity, resulting in fewer incidents and equipment failures
- Reduced energy costs

Environmental SCADA

- Significant reduction in environmental penalties due to precise pollutant measurement and control of out-of-range factors in monitored zones
- Real-time transmission of environmental data to the Environmental Performance System, with simultaneous delivery to the Iran's Department of Environment via secure communication channels and full compliance with security protocols
- Removal of certain production zones from MSC's list of polluting areas, based on verified measurement data

Fluids SCADA

- Monitoring and control of fluids transmission lines, including valves and pipelines, with consumption data segmented by operational units
- Company-wide energy consumption management
- Utilization of unit-specific consumption data to develop energy models aimed at cost savings and efficiency improvement

Engine Room SCADA

- Intelligent control of boiler rooms and air handling units, eliminating the need for on-site operator intervention
- Achieved a 20% reduction in gas consumption across boiler rooms
- Upgraded boiler room hardware and implemented smart control systems

Smart logistics: a pillar of transformation in MSC's supply chain

In today's competitive world, efficient cost management within the supply chain stands as one of the most critical factors for industrial success. Companies and supply chain managers continuously seek innovative solutions to reduce costs and enhance productivity. One of the key strategies in this regard is the smartening of logistics and the digitalization of transportation processes.

Smart logistics, through the adoption of advanced technologies such as the Internet of Things (IoT), artificial intelligence (including autonomous vehicles, drones, and robotic systems), machine learning, and blockchain technology, enables the optimization of transportation operations and paves the way for digital transformation across the supply chain.

At MSC, the implementation of smart logistics as a strategic element plays a pivotal role in enhancing operational efficiency, reducing environmental impacts, improving safety, and elevating the quality of services. Leveraging automation, advanced data analytics, and decision-support systems has significantly reduced costs and increased stakeholder satisfaction, laying the foundation for a sustainable path to future development.

Key benefits of smart logistics at MSC:

- Reduction of logistics costs and enhancement of productivity
- Optimization of resource and energy utilization
- Increased safety and reduction of human errors
- Access to real-time data for rapid and predictive decision-making
- Strengthening of the company's economic and environmental sustainability

In pursuit of institutionalizing this technological transformation, MSC has divided its smart logistics platform into six distinct components, each designed and implemented as an independent project. This approach enables structured management, step-by-step implementation, and precise evaluation of outcomes. The six projects are as follows:

1. Heavy transportation condition monitoring
2. In-plant transportation status monitoring
3. Smart management of light-duty transportation
4. Monitoring of steelmaking slag transportation
5. Smart rail transportation of materials and products
6. Smart road transportation of materials and products

Monitoring of heavy transportation

As part of this project, the fleet of heavy-duty transport buses (approximately 700 vehicles) has been equipped with tracking systems and onboard cameras. These systems enable real-time monitoring of fleet operations, allowing users to determine the location and status of each vehicle at any given moment.

Key capabilities of the system include monitoring dangerous driving behaviors, assessing the internal condition of buses, tracking routes, controlling speed, accurately calculating operational hours, precisely measuring travel distances, which in turn leads to cost reductions, as well as monitoring service performance and enabling rapid replacement in the event of service disruption. The most significant outcomes of this project include:

- Enhanced service quality and increased passenger satisfaction
- Accurate measurement of distances traveled by each bus
- Cost reduction
- Monitoring of hazardous driver behaviors, internal bus conditions, speed control, and precise determination of operational time

Monitoring the status of transportation inside the factory

As part of this project, approximately 690 heavy-duty vehicles operated by the Transport and Support Division, responsible for servicing production areas, have been equipped with tracking devices. These systems provide users with real-time information on the vehicles' location, status, operating hours, and completed trips. This enables efficient management of task assignments, optimized distribution of vehicles across various areas based on their specific requests, direct communication with drivers for task execution, real-time event logging, and more. The system contributes to the optimal use of available vehicles, resulting in a significant reduction in in-plant transportation costs. The key outcomes of this project include:

- Establishment of an integrated system for monitoring in-plant transportation
- Improved supervision and control over driver performance
- Monitoring and management of hazardous driver behavior
- Informed decision-making to enhance operational efficiency

Smart management of light transportation

This system has been customized by the Light-Duty Transport Unit to meet the service needs of MSC employees. It enables the automation and streamlining of all processes related to vehicle requests, request consolidation, vehicle assignment, trip scheduling, accurate tracking of vehicle usage, real-time vehicle monitoring during trips, precise location tracking for optimal dispatching, as well as automatic calculation of costs and contractor billing, with minimal time and effort.

The deployment of this system contributes significantly to the efficient management of light-duty vehicle services both on-site and off-site, leading to cost reductions and improved employee satisfaction.

The key outcomes of this project include:

- Real-time management and monitoring of vehicle status through live tracking of location, route, distance, and speed, along with display of driver, vehicle, and contractor information
- Optimized route management and passenger assignment across the fleet
- Effective management of vehicle operations and driver tasks
- Service planning and continuity under various conditions, including during emergencies

Monitoring of steelmaking slag transportation

As part of this project, 14 ladle transport mechanisms (pot carriers) at MSC have been equipped with tracking systems and onboard cameras. This enables slag transport operators to gain a comprehensive, real-time overview of the status and location of all pot carriers, allowing for more effective control and optimized scheduling of ladle assignments to electric arc furnaces, in accordance with system recommendations.

The system also provides detailed information on the health status and operational condition of the mechanisms, which can be leveraged for predictive maintenance. Additionally, various operational states of the ladle transporters are automatically detected and recorded in the company's Enterprise Information System (EIS).

This system significantly enhances the efficiency of pot carrier operations, improves order and speed in slag transportation processes, reduces downtime of electric arc furnaces due to delays or miscoordination, and optimizes the performance of these critical mechanisms.

The key outcomes of this project include:

- Real-time monitoring of pot carrier status and location
- Provision of detailed data on mechanical health and performance
- Improved efficiency, organization, and speed of slag transportation operations
- Reduction of electric arc furnace downtime caused by delays or miscoordination in ladle arrival

Smart rail transportation of materials and products

This project enables the tracking and monitoring of freight wagons either en route to MSC or currently present on-site. Through this system, users in the rail transportation department gain access to real-time data on the movement and status of wagons, allowing for precise inventory control and improved planning of rail transport operations within the company.

The system utilizes image processing and machine learning technologies to identify each wagon individually and track them at all loading and unloading points. This solution reduces wagon movement losses, allows for quicker and more efficient allocation of wagons to loading, weighing, and unloading stations, accelerates rail transport operations, and ultimately decreases associated costs. The key outcomes of this project include:

- Defining the operational process for each project and shipment request, including task sequencing, standard times, data logging methods, and more
- Managing and mapping the geographical coordinates of loading and unloading points
- Planning the transportation of products
- Tracking wagons throughout the transportation cycle

Smart road transportation of materials and products

This project enables the tracking and monitoring of freight transport vehicles en route to MSC, as well as those carrying products from the company's site to customer destinations. By equipping transport vehicles with tracking devices, MSC users can monitor the movement of each vehicle and identify its precise location in real time throughout its journey to the company.

Moreover, the system can detect abnormal events such as extended stops, route deviations, and severe mechanical shocks. By aggregating the data generated by this system, users gain access to detailed insights regarding travel times from various origins, driver behavior, distances traveled, and more, allowing for the prevention of potential violations during transportation. The system also serves as a valuable tool for planning the road-based transportation of materials and products.

Slab numbering robot

Due to the inadequate and unreliable performance of existing numbering machines at MSC (continuous casting machines 1 to 4), manual numbering was also performed alongside machine numbering to compensate for the shortcomings. Accordingly, a project was initiated for the design, manufacture, installation, commissioning, and operation of two slab numbering devices based on technology transferred from Ronmas Company. This device performs slab numbering through a robotic arm in three stages:

1. Removal of oxide scales from the slab surface using a mechanical scale-removal system
2. Numbering the slab via a powder spraying mechanism (first mechanism)
3. Numbering the slab by engraving the surface using a pinning method (second mechanism)

Within this project, marking and numbering of slabs produced in the casting unit are conducted using the designed robotic arm and powder spraying technology, which has been localized by Hooshmand Chabok Company with support from the domestic MSTID Fund.

This project significantly aids in the identification and tracking of products manufactured in the casting unit, as well as in their production planning for the rolling mill line or shipment to customers.

The benefits gained from this project include:

- Increased technical knowledge and technological advancement
- Optimization of production and production support systems
- Elimination of imports and reduction of dependency
- Reduction of waste and promotion of reuse

Design and implementation of the simulation and intelligent control system for SABA direct reduction process

To enable online access to necessary data for the intelligent control of the SABA direct reduction process, as well as decoding and converting existing offline proprietary data into online, usable formats for the smart modeling, a project titled “Design and Implementation of the Data Aggregation System for Direct Reduction Performance at SABA Steel” was initiated.

Following the successful completion of a pilot phase involving 100 tags (performance indicators of the direct reduction furnace), the final phase was executed, covering over 2,000 tags present in the Level 2 systems of SABA Steel’s direct reduction unit. These data serve as inputs for the intelligent control model of the SABA reduction process.

The implementation of this project provides the essential infrastructure for future data analysis and process simulation projects.

The system capabilities broadly include:

- Real-time reading of approximately 3,200 data points from the site and storing them in a database
- Communication with Level 1 systems via OPC UA protocol
- Storing data received from Level 1 into Level 2 systems
- Displaying Level 1 HMI information on Level 2 interfaces
- Developing and implementing a communication framework with the intelligent reduction process model

The story of IRISA

Experience-driven application of artificial intelligence in the steel industry

In the pursuit of enhancing technological capabilities and gaining deeper insights into emerging opportunities in intelligent manufacturing, an event focused on the practical applications of artificial intelligence (AI) in the steel industry was jointly organized by the Engineering Unit of MSC and the IRISA Prime Group. This gathering, attended by experts, operators, and technical managers, provided a platform for experience exchange, collaborative learning, and outlining new horizons for digital transformation within the steel sector.

Focusing on real industry challenges with an innovative perspective

MSC, recognizing the critical challenges such as energy efficiency, quality control, equipment failure prediction, and production process optimization, strives to harness AI's capabilities to address these needs. The objective of this event was not only to promote foundational concepts but also to deepen practical understanding of AI's potential among the organization's technical staff. By familiarizing themselves with data-driven approaches and advanced analytical tools, managers and specialists are empowered to make more informed decisions and progress towards creating sustainable competitive advantages.

Given the expanding adoption of AI technologies across various industries, cutting-edge AI solutions have been prioritized within MSC's agenda, with a gradual institutionalization of these technologies underway. The event featured expert presentations on diverse topics, including AI applications across the production chain, data analytics techniques, human-machine interaction, and the revolution of large language models (LLMs). In the closing segment, several data-driven AI projects developed by partner companies from Russia were introduced and reviewed online, showcasing a vision of global synergy on the path to digital transformation in the steel industry.

The story of Chaharmahal and Bakhtiari Automotive Sheet Co.

A safe transformation in the steel industry, installation of the country's first fully automatic slag removal robot

The slag removal process in galvanizing production lines is a critical step for ensuring the final product's quality, while also being one of the most hazardous tasks for operators. Performing this operation manually exposes workers to risks such as falling into molten pots, burns, and musculoskeletal disorders. To eliminate these hazards, optimize the consumption of valuable materials like zinc and zamak, and improve the quality of special products (MC), the Chaharmahal and Bakhtiari Automotive Sheet Company designed and launched the country's first fully automated slag removal robotic system in 2024. This project was entirely implemented by a domestic knowledge-based company and marked a milestone in the steel industry's shift toward safe, localized advanced technologies.

Key Objectives of the Project

- Enhancing employee safety and health by completely removing operators from hazardous environments
- Improving the surface quality of special products (MC grade) through consistent and precise slag removal
- Reducing consumption of raw metallic materials (zinc and zamak) by preventing contamination of the molten surface
- Minimizing human errors and production downtime by replacing manual processes with automated robotics
- Localizing advanced industrial technologies and advancing domestic expertise in robotics

Environmental Benefits

- Significant reduction in the consumption of precious metals due to consistent and uniform slag removal operations
- Effective waste management by preventing the formation of dense slags
- Optimization of resource efficiency and reduction of waste rates in the galvanizing process

Economic and Social Benefits

- 100% improvement in occupational safety by eliminating physical hazards for operators
- Reduction in medical expenses, potential compensations, and workplace accidents
- Prevention of ergonomic issues caused by repetitive and strenuous tasks
- Increased workforce productivity by reallocating employees to higher-value activities
- Enhanced employee morale through the provision of a safe and technologically advanced work environment
- Decreased costs related to production line stoppages and overall system productivity improvements

Cybersecurity ecosystem: a strategy for a resilient future at MSC

In the vision of MSC, one of the largest steel producers in the region with a key role in the national and local economy, wisdom is regarded as the essence of decision-making and the foundation for creating a better future. The company believes that true development is not merely defined by technical or economic progress, but by the intelligent use of resources, a profound understanding of future transformations, and a balanced consideration of the interests of industry, society, and the environment.

From MSC's perspective, wisdom entails viewing development not solely as the addition of economic value but as the synergy of economic growth with security, sustainability, and resilience. Such a perspective demands moving beyond traditional paradigms and embarking on pathways designed with insight, awareness, and foresight.

Especially in a world where cyber risks, according to the World Economic Forum reports, rank among the top ten growing global risks, reliance solely on technical tools and isolated technologies is insufficient. Only through a wise and holistic approach can cybersecurity be institutionalized systemically and sustainably within the country's industrial development framework.

Accordingly, MSC has defined its path not only toward internal resilience and protection of its operations but also toward creating and nurturing a "Cybersecurity Ecosystem" with a national and forward-looking outlook, an ecosystem rooted in collective wisdom, collaboration with key stakeholders in the field, and a firm belief in fostering indigenous capabilities.

Cybersecurity: A necessity for the digital future of industry

With the accelerating integration of industries and advanced technologies such as digital transformation and the Fourth Industrial Revolution, alongside the increasing complexity of cyberattacks, securing critical technologies and infrastructures is no longer optional, it has become an undeniable necessity. In 2022, MSC faced a significant cyberattack, which, thanks to the expertise and preparedness of its human capital, was successfully mitigated. This experience paved the way for a new direction toward enhancing digital resilience and establishing a national cybersecurity ecosystem that extends beyond organizational boundaries.

The two pillars of security at MSC

- Protection: Focused on policies and preventive measures to avoid unauthorized access, disruptions, or operational stoppages. This includes secure architecture design, development of software based on security principles, and safeguarding IT services.
- Resilience: Focused on maintaining operations during crises and ensuring uninterrupted production even in the face of cyber threats. This encompasses business continuity planning, implementation of international standards, and adaptable frameworks aligned with MSC's industrial processes.

Isfahan: The future hub of cybersecurity

One of the long-term goals of MSC is to transform Isfahan province into the national hub of cybersecurity. This objective is achievable by leveraging the scientific capacities and highly educated human resources of the region. In this regard, the company, in collaboration with key players in the national technology ecosystem such as IRISA Company, MSC's MSTID Fund, and the APA Center at Isfahan University of Technology, has initiated the formation of this cybersecurity ecosystem.

This ecosystem not only contributes to enhancing the security of industrial companies but also plays a vital role in the country's digital resilience by empowering domestic experts, expanding the cybersecurity services market, and supporting indigenous innovations.

Main goals of the cybersecurity ecosystem

- Identifying and nurturing cybersecurity talents nationwide, reducing the gap between industry demands and academic knowledge
- Raising awareness levels in the field of cybersecurity across the country
- Encouraging cybersecurity professionals to innovate and develop cutting-edge products
- Developing new ideas at various levels
- Training specialized workforce and providing moral and financial support to enthusiasts aiming to establish startups
- Continuously updating the knowledge of cybersecurity practitioners regarding emerging cyber threats and attacks

"Capture the Flag" (CTF) events in 2023 and 2024

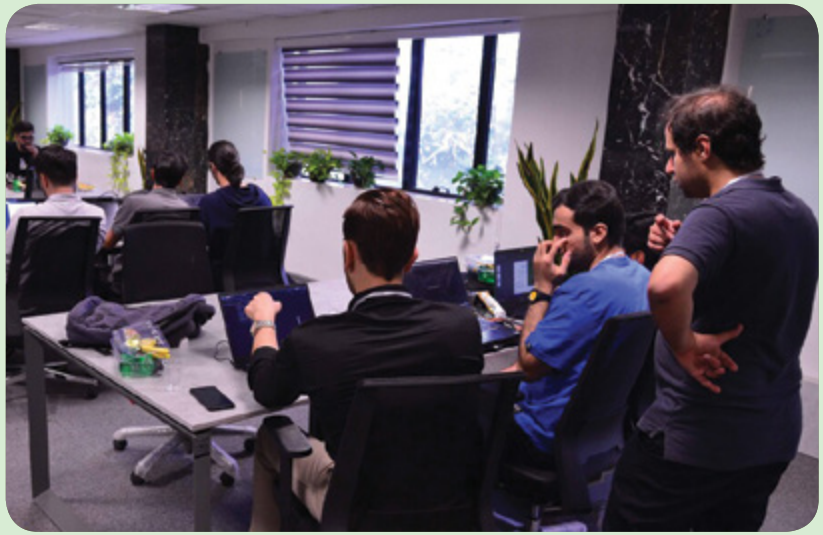
The Capture the Flag (CTF) event, as part of the cybersecurity ecosystem, provides a training platform for organizational staff. Based on specific scenarios, teams attempt to penetrate and carry out simulated cyber-attacks within controlled systems. These scenarios highlight issues such as employees' failure to follow security protocols, which could lead to severe security incidents.

The foundational steps for organizing the CTF event include branding (event name, slogan, and advertising), developing the competition website, designing scenarios and challenge questions, and producing visual content for the closing ceremony and award distribution.

The CTF events were held in 2023 and 2024, during which cybersecurity talents were identified, and a collaborative environment for discussion and participation on required information security capabilities in the industry was established.

To strengthen MSC's resilience, an Information Security Management System (ISMS) based on ISO/IEC 27001:2022 was implemented within the company's IT scope, culminating in obtaining the ISMS certification.

Additionally, under the protection approach, the company successfully established a Security Operations Center (SOC) and deployed protective solutions such as the use of data diodes for secure physical communications within the organization, implementation of Content Disarm & Reconstruction (CDR) technology to prevent sending or receiving files potentially containing malware, and planned deployment of Endpoint Detection and Response (EDR) systems.



Section 4
ESG Factbook

Environmental Data

GHG emissions and other air pollutants					
Indicator	Unit	2021	2022	2023	2024
CO2 Emission Intensity*	t CO_2/t crude steel	1.62	1.56	1.76	1.84
NOx Emission Intensity	Kg/t crude steel	0.61	0.6	0.57	0.77
SOx Emission Intensity	Kg/t crude steel	1.58	1.25	1.41	2.09
CO Emission Concentration	mg /Nm^3	2259	799	700	581
Dust Emission Intensity	Kg/t crude steel	0.3	0.39	0.35	0.35
Ambient Dust Concentration / PM10**	µg/Nm^3	33	43	43	53

*In comparison, the global average reported by the World Steel Association during the same period has remained almost constant at around 1.92 tons of CO_2 per ton of crude steel. This performance gap highlights MSC's environmental competitive advantage and underscores the key role of its production technologies, namely Direct Reduced Iron (DRI) and Electric Arc Furnace (EAF), in achieving this success.
**Furthermore, since 2016 (1395), when pollutant emissions peaked at 91 µg/Nm3, the implementation of control measures has led to a significant decline, bringing the level down to 53 micrograms in 2024 (1403). This outcome confirms that over the past decade, PM_{10} concentrations have consistently remained below the legal limit (70 µg), demonstrating the effectiveness of the company's environmental measures.

Water and wastewater					
Indicator	**Unit**	**2021**	**2022**	**2023**	**2024**
Specific water consumption	m^3/ t crude steel	2.20	2.27	2.78	2.50
Water Withdrawal	Million m^3	14.7	16.4	20.4	18.50
Sanitary water consumption	Million m^3	-	-	-	0.95
Green space water consumption	Million m^3	-	-	-	4.50
Urban wastewater transferred to MSC	Million m^3	7.72	7.02	8.43	8.55
Generated wastewater	Million m^3	-	-	-	5.5
Discharged wastewater returned to the sewage system	Million m^3	-	-	-	1.1
Treated wastewater utilized in the company's processes	Million m^3	-	-	-	7.5
Ratio of treated and utilized wastewater to total water consumption of the company	%	-	-	-	30

Water and wastewater					
Indicator	Unit	2021	2022	2023	2024
Fat and oil	mg/liter	0.53	0.5	0.6	0.5
TSS	mg/liter	5	6	4	4.5
COD	mg/liter	26.8	33	24.25	25
BOD	mg/liter	6.8	8	10	7.5

Waste					
Indicator	Unit	2021	2022	2023	2024
Disposed waste	Ton	1,044	187	48	0
Sale of processed slag	Ton	206,000	500,000	555,000	325,000
The ratio of recycled or sold waste to total generated waste	%	14	24	24	27
The ratio of processed metallic scrap to total generated metallic scrap	%	-	-	-	52.4
The ratio of sold metallic scrap to generated metallic scrap	%	-	-	-	17.6
The amount of revenue from the selling of metallic scrap	Million Rials	-	-	-	886998

Types of waste produced: normal, agricultural, industrial, medical and special

Energy					
Indicator	Unit	2021	2022	2023	2024
Energy specific consumption	GJ/ t crude steel	23.81	23.23	24.19	24.59
Pellet making plant energy consumption- thermal	GJ/ton	0.50	0.51	0.51	0.48
Pellet making plant energy consumption- electrical	Kwh/ton	34.80	31.68	25.07	24.83
Direct reduction plant energy consumption- thermal	GJ/ton	9.83	9.70	10.06	10.38
Direct reduction plant energy consumption- electrical	Kwh/ton	123.08	110.26	121.12	123.39
Steel making plant energy consumption- electrical	Kwh/ton	735.13	727.61	727.96	721.83
Hot rolling plant energy consumption- thermal	GJ/ton	1.69	1.51	1.32	1.39
Hot rolling plant energy consumption- electrical	Kwh/ton	81.72	78.28	75.80	76.83
Green energy injected into the company's power grid (solar energy)	Mwh	-	-	-	20198

Social Data

Employees					
Indicator	Unit	2021	2022	2023	2024
Total number of employees	Persons	12295	12160	11836	11766
Number of employees in managerial positions	Persons	111	115	117	117
Number of Non-Managerial Employees	Persons	12050	11828	11719	11649
Female Employees in Senior Management Positions	%	0.04	0.04	0.04	0.04
Number of positions	Count	2734	2794	2786	3429
Number of jobs	Count	258	251	219	261
Number of job levels	Count	11	11	11	11
Female Employees	%	1.62	1.7	1.7	1.6
Male Employees	%	98.4	98.3	98.3	98.4
Average age of employees	Number	40.8	41.2	41.5	41.5
Employees under 30 years old	%	8.4	6.64	7	10
Employees aged 30-50 years	%	80.7	81.7	84.5	82
Employees aged 50 and above	%	10.9	11.6	8.5	8
Retention rate of employees	%	99.98	99.98	99.95	99.94
Number of contractor employees	Count	_	_	_	16290
Male employees of the contractor	%	_	_	_	98.20
Female employees of the contractor	%	_	_	_	1.80
Employee productivity	Ton crude steel/ Number of employee	429	465	450	442
Number of interns recruited	Count	108	800	860	892
New hires from surrounding areas	Count	120	85	210	300
New hires	Count	451	194	468	_
New hired employees under 30 years old	%	_	_	_	62.8

Employees					
Indicator	Unit	2021	2022	2023	2024
New hired employees aged 30-50 years	%	_	_	_	37.2
New hired employees aged 50 and above	%	_	_	_	0
Employee training per capita	Person-hours	51.3	61.8	48.23	58.6
Training for male employees	hours	599,902	658,312	743,808	707,918
Training for female employees	hours	16,042	16,398	17,148	15,334
Specialized training	hours	365,368	465,221	446,815	347,295
Managerial training	hours	37,768	39,962	29,607	16,839
General training	hours	250,576	209,489	314,141	375,957
HSE training (general)	hours	9,534	34,512	15,338	14,804
HSE training (specialized)	hours	52,556	42,913	70,266	67,153
Cybersecurity training	hours	3,725	5,440	8,816	4,009
Code of conduct training	hours	3,742	4,350	4,751	5,818
Employee training cost	Billion Rials	224.15	377.64	660.45	1082.17
Training cost per employee	Billion Rials	17,685,957	30,514,003	53,305,330	87,688,751
Manager training per capita	hours	46,396	34,203	60,695	50,722
contractual employee training per capita	hours	511,485	566,075	631,673	621,499
permanent employee training per capita	hours	104,459	108,635	129,283	101,753
Number of employee complaints against the company	Count	8	7	5	5
Number of employee complaints resolved	Count	8	7	5	5
Participants in humanitarian activities	Count	5395	5934	3200	4670
employees whose performance has been evaluated	%	99	100	99	97
Average employee performance evaluation score	%	85.44	86.8	87.5	87.48
Employees taking parental leave	Count	13	17	477	463
Number of male employees taking parental leave	Count	_	_	_	457
Number of female employees taking parental leave	Count	_	_	_	6
Number of employees returned to work after taking parental leave	Count	_	_	_	459

Safety and health					
Indicator	Unit	2021	2022	2023	2024
Severity Rate (SR)	%	0.021	0.018	0.011	0.015
Frequency Rate (FR) (LTIFR)	%	0.95	0.847	0.813	0.86
Near misses (Green Cards)	Count	13963	17663	55456	53919
Days without accidents	Days	Up to 2021: 1146	Up to 2022: 1511	Up to 2023: 1876	Up to 2024: 2242
Fatal Frequency Rate (FFR) of employees	Person/1 million Hours	zero	zero	zero	zero
Fatal Frequency Rate (FFR) of contractors	Count	_	_	_	1
Lost Time Injuries (LTI) – employees	Count	_	_	_	22
Lost Time Injuries (LTI) – contractors	Days	_	_	_	43
Occupational Illness Frequency Rate (OIFR) – employees	Ratio	_	0.47	0.35	0.26

Supporting local communities and engaging with them					
Indicator	Unit	2021	2022	2023	2024
Financial support for regional development, cultural, sports, and social projects	Billion Rials	500	500	1,000	1,220
Number of regular and in case meetings with local officials and community representatives	Count	85	100	100	110
Number of direct employment in the Mobarakeh steel Group	Count	50000	35126	_	56785
& Number of indirect employment in service sectors and upstream downstream industries in the country	Count	330000	345000	_	350000
Number of social aids or contributions made in the community	Count	38	51	87	90
Number of educational aids or contributions made in the community	Count	13	14	57	28
Number of construction/development aids or contributions made in the community	Count	40	38	79	94
Number of cultural aids or contributions made in the community	Count	36	147	148	112
Number of sports aids or contributions made in the community	Count	7	24	24	7

Governance Data

Economic performance					
indicator	Unit	2021	2022	2023	2024
Total sales	Billion Rials	1,456,266	1,607,039	2,410,860	2,763,556
Domestic sales	Billion Rials	1,254,916	1,428,890	2,135,595	2,428,812
Exports	Billion Rials	201,351	178,149	275,265	334,744
Net profit	Billion Rials	840,794	679,241	925,510	995,278
Return on Equity (ROE)	%	81.2	46	50	44
Crude steel production*	Million tons	6.701	7.216	7.33	7.30
Hot-rolled steel production	Million tons	6.25	6.59	6.62	6.83
Export volume (by weight)	Million tons	1.26	1.2	1.4	1.3
Return on Assets (ROA)	%	54	30	32	27
Debt ratio	%	33	38	35	43
Payment of taxes and legal duties	Billion Rials	84,645	94,094	114,419	221,473
Current assets	Billion Rials	1,679,925	1,846,863	2,205,436	2,765,424
Non-current assets	Billion Rials	383,235	669,788	1,036,689	1,753,458
Total assets	Billion Rials	2,063,160	2,516,651	3,242,124	4,518,882
Company capital	Billion Rials	–	–	1,080,000	1,500,000
EPS	Rials	2,870	849	857	600
DPS	Rials	1,700	500	400	–

*Following the separation of Saba Steel Company's financial statements from MSC, from now on only the crude steel production of MSC will be reported.
The economic and financial data presented in this report pertain to the fiscal year ending on March 19, 2025.

Suppliers					
Indicator	Unit	2021	2022	2023	2024
Total number of suppliers of Isfahan geographical area	Number	5,023	5,150	5,270	5,503
Number of active suppliers of Isfahan geographical area	Number	1,178	1,050	1,200	1,210
Total number of suppliers of other geographical areas	Number	7,362	7,719	8,045	8,270
Number of active suppliers of other geographical areas	Number	1,191	1,146	1,475	1,616
Ratio of payments to local suppliers (geographical area of Isfahan) to total suppliers	%	23	20	23	22

Raw materials					
Indicator	Unit	2021	2022	2023	2024
Iron Concentrate (Purchased)	million tons	7.2	7.6	6.7	7.1860
Pellet (Purchased)	million tons	10.8	14.8	5.2	4.0590
DRI and briquette (Purchased)	million tons	1.8	6.7	3.7	3.6120
Limestone (Purchased)	tons	856,617	353,583	258,500	372.0000
Iron scrap (Purchased)	tons	718,767	12,055	96,708	23.0000

GRI Index

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	2-27	Compliance with laws and regulations	None
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	2-30	Collective bargaining agreements	None
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	201-2	Financial implications and other risks and opportunities due to climate change	29-30, 147-161
	201-3	Defined benefit plan obligations and other retirement plans	95-97
	201-4	Financial assistance received from government	none
Market Presence	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	There is no significant difference. In this regard, MSC acts in accordance with the laws and regulations of the Islamic Republic of Iran including the constitution and labor law (labor code) of I. R. Iran.
	202-2	Proportion of senior management hired from the local community	86-87
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Anti-corruption	205-1	Operations assessed for risks related to corruption	Corruption and related risks are of great importance to MSC and in this regard, necessary training are presented to employees through company Code of Conduct. Also, this issue is monitored and controlled through current approaches in MSC's related departments (e.g. security department).
	205-2	Communication and training about anti-corruption policies and procedures	
	205-3	Confirmed incidents of corruption and actions taken	None
Anti-competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	None
Tax	207-1	Approach to tax	MSC pays its taxes according to laws and regulations of Iran, Ministry of Economic Affairs and Finance, Iranian National Tax Administration (INTA). Also, policies in this regard are made in the framework of and in accordance with these laws and gulations
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Biodiversity	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	None
	304-2	Significant impacts of activities, products and services on biodiversity	50-56
	304-3	Habitats protected or restored	50-56
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	401-2	Negative environmental impacts in the supply chain and actions taken	4, 85-87, 230-231
	401-3	Parental leave	97, 231
Labor/Management Relations	402-1	Minimum notice periods regarding operational changes	Whenever there is a change in operation that has an impact on stakeholders (especially employees), these changes are communicated to stakeholders (especially employees) through communication approaches and channels, and the necessary planning is done in this regard
ccupational Health and Safety	403-1	Occupational health and safety management system	110-117
	403-2	Hazard identification, risk assessment, and incident investigation	110-117
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	405-2	Ratio of basic salary and remuneration of women to men	None
Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	None
Freedom of Association and Collective Bargaining	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	None
Child Labor	408-1	Operations and suppliers at significant risk for incidents of child labor	None
Forced or Compulsory Labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	None
Security Practices	410-1	Security personnel trained in human rights policies or procedures	None
Rights of Indigenous Peoples	411-1	Incidents of violations involving rights of indigenous peoples	None
Local Communities	413-1	Operations with local community engagement, impact assessments, and development programs	118–135
	413-2	Operations with significant actual and potential negative impacts on local communities	None
Supplier Social Assessment	414-1	New suppliers that were screened using social criteria	184–186
	414-2	Negative social impacts in the supply chain and actions taken	184–186

Category	Disclosure		MSC response
Public Policy	415-1	Political contributions	According to I. R. Iran's regulations and laws, MSC is not allowed to participate in any political process, and this is not the case.
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	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	None
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	417-2	Incidents of non-compliance concerning product and service information and labeling	None
	417-3	Incidents of non-compliance concerning marketing communications	None
Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	None

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2025
Green Wisdom

MSC Sustainability Report