



GSR ANALYTIX

FORGE

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Week 40

MINING • MINERALS • METALLURGY • IRON & STEEL • SUPPLY CHAIN MAGAZINE

2027

SECTOR EXPECTATIONS

TRENDS | OPPORTUNITIES | CHALLENGES

- STEEL MARGINS UNDER PRESSURE
- VIETNAM: THE NEW INDUSTRIAL GROWTH STORY
- SCRAP, EAFs & THE RACE FOR QUALITY
- INSIDE THE MELT SHOP
- DECARBONISING STEEL



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EDITOR'S NOTE

We chose 2027 as the frame for this founding issue because the year ahead is being shaped by decisions made now. Energy markets are still absorbing the 2026 shock. Trade policy is being rewritten, from new EU steel import rules to export controls on critical minerals. Several large projects are moving from construction into ramp-up, and their pace will set prices. Our approach is simple. Forecasts are labelled as forecasts. Numbers carry their source. Where institutions disagree, we show the range rather than pick a headline. Every page should help a reader make or test a decision on pricing, capacity, sourcing or investment. FORGE is published by GSR Analytix, drawing on more than three decades of international trade and procurement experience. We welcome your data, project news and feedback.

Thank you for reading the first FORGE.

Gürkan Sever Founder & Managing Editor

For most of the past decade, mining, metallurgy and steel were reported as separate worlds. Mining titles followed ore bodies, permits and exploration results. Steel titles followed mills, margins and trade cases. Logistics and procurement sat somewhere else entirely.

The businesses we serve do not work that way. A copper concentrate contract depends on sulphuric acid supply. A steel mill's cost curve depends on freight, power prices and carbon rules. An order for crushers, screens or refractories depends on whether a project reaches financing, and on when.

FORGE brings that chain onto one page. Each issue follows the flow of material and capital: from exploration and extraction, through processing and steelmaking, to trade, logistics and the suppliers who keep plants running. We combine a country focus with global coverage, because demand is local but supply is always international.



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2027 AT A GLANCE

2027 cannot be read through a single price forecast. Five forces will act on mining, metals and steel at the same time: energy costs, demand conditions, the split between base metals and iron ore, trade rules and supply security.

Energy will again be a strategic cost for power-intensive plants. Regional differences in electricity and fuel prices will create major cost gaps between producers of the same product. Demand for steel and metals will be supported by infrastructure, defence, energy-transition and data-centre investment, while uneven regional growth keeps volatility high.

This will make operational discipline as important as market direction. Producers will need to compare their own cost position with regional peers and monitor the timing of new supply.

The key question for 2027 is not simply where demand will go. It is which product, in which region and under which cost conditions will remain profitable.

New capacity, project financing and ramp-up schedules will be closely watched across base metals. Supply security for copper, nickel, lithium and rare earths will depend not only on reserves, but also on processing capacity, permitting, energy access and logistics corridors.

In iron ore and steel, trade barriers, carbon costs, scrap availability and regional overcapacity will redefine competitiveness. Export controls and more localised supply chains will push procurement teams to establish alternative sources and secure longer-term contracts for critical materials.

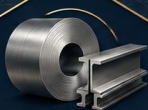
Resilience will increasingly be measured by the ability to switch grades, suppliers, routes and processing options without losing control of cost or quality. Supplier qualification will become a strategic tool rather than a routine function.

The winners in 2027 will not be those with the lowest cost alone. Companies that manage visible, flexible and reliable supply networks will be more resilient.



ENERGY & FUEL

Energy costs shape competitiveness.



STEEL DEMAND

Infrastructure and defence sustain demand.



METALS & ORE

Project timing and steel output matter.



TRADE RULES

Tariffs and carbon costs reshape flows.



SUPPLY SECURITY

Alternative sources and logistics are critical.





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THE FIVE PILLARS OF FORGE

FORGE is built around one fact: mining, minerals, metallurgy, steel and logistics are not separate markets. They are consecutive stages of the same commercial system, connected by capital, energy, equipment, transport and risk.

The chain begins with mining, where resource quality, permits and project finance determine what can be brought to market. It continues through mineral processing and metallurgy, where recovery, power, reagents and technology convert material into saleable products. Steelmaking adds another layer of cost, carbon exposure and scrap availability.

The final link is supply chain: ports, railways, vessels, warehouses and procurement teams that turn production into delivery. A disruption at any point can change margins across the entire chain.

FORGE follows all five pillars together, because decisions made in one part of the system increasingly shape outcomes everywhere else.

Mining provides the raw material and the pipeline of future supply. Mineral processing determines recovery, concentrate quality and the economics of moving ore into global markets. Metallurgy creates the products required by manufacturing, infrastructure and energy systems.

Iron and steel remain the industrial backbone of the chain. Their competitiveness depends on ore and scrap access, electricity, coke, freight, carbon rules and the health of downstream demand. Steel cannot be understood through mill capacity alone.

Supply chain completes the picture. A mine without rail access, a concentrator without reagents, or a mill without reliable cargo flows cannot operate at full value. Procurement decisions, inventory policy and supplier qualification are therefore operational issues, not back-office tasks.

Each issue of FORGE connects these five pillars with market data, project developments and practical commercial context.





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Founder & Managing Editor
Gürkan Sever

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THE MACRO BACKDROP

The industrial economy enters 2027 with growth still uneven, but with investment demand more visible than it was a year ago. Infrastructure, grid expansion, defence, energy security, data centres and industrial policy are supporting demand across a wide range of metals and materials.

That support does not create a simple upward cycle. Regional growth rates remain different, financing costs still matter and households, manufacturers and governments face different pressures in each market. China's demand profile, the pace of European recovery and the durability of US investment will all shape the direction of trade.

For mining and metals, the key change is that demand is no longer driven by one sector alone. Electrification needs copper, grids need aluminium, defence needs specialised alloys and construction still depends on steel. The result is a broader but more selective market.

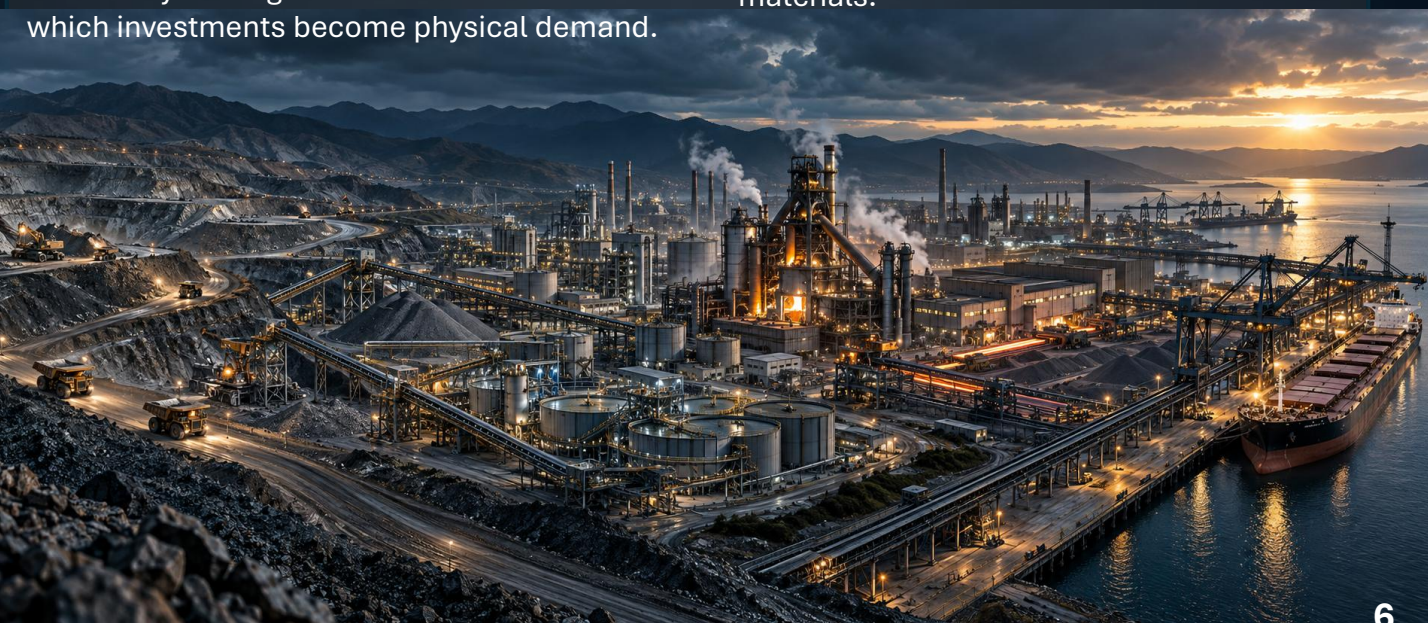
Companies will need to watch real project delivery, not headlines alone. Announced capacity, approved financing, power availability and logistics access will decide which investments become physical demand.

Cost conditions will remain as important as demand. Energy prices, interest rates, exchange rates, freight, carbon exposure and trade policy now move together more often than before. A change in one of these inputs can quickly alter the competitiveness of a mine, smelter, mill or processing plant.

The global market is therefore becoming more regional in operation while remaining international in supply. Governments are seeking shorter, safer and more transparent material chains. Producers are responding with local partnerships, alternative routes, larger inventories and more careful supplier qualification.

This does not mean global trade is disappearing. It means that trade is becoming more conditional. Origin, processing location, emissions profile, financing structure and delivery reliability are all becoming part of the commercial decision.

The macro backdrop for 2027 is neither boom nor retreat. It is a period of disciplined capital allocation. The strongest operators will be those able to protect margins while remaining ready for demand that appears first in specific regions and materials.





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10 TRENDS SHAPING 2027

The defining feature of 2027 will be convergence. Energy security, critical-mineral access, trade policy, carbon exposure and industrial competitiveness are no longer separate agendas. They are shaping the same investment decisions.

First, supply security is replacing lowest-cost sourcing. Buyers will accept a higher unit cost where origin, delivery and processing capacity are more reliable. Second, critical-mineral projects will be judged less by resource headlines and more by permitting, infrastructure, financing and offtake.

Third, electricity will become a decisive industrial advantage. Fourth, scrap availability and quality will matter more as steelmakers pursue lower-carbon production. Fifth, freight and port capacity will remain commercial variables rather than background costs.

The remaining trends are equally connected: tighter trade rules, more regional processing, selective automation, disciplined capital allocation and stronger supplier qualification. Together they will reward companies that can see across the full chain—from ore body to final delivery.

The ten trends are not isolated predictions. They are operating conditions. A mine can have a strong resource but lose momentum through power constraints or slow permitting. A steel producer can improve its carbon profile but still face pressure if scrap, electricity or logistics are unreliable.

The response is practical: map exposure across energy, freight, currency, regulation and supplier concentration. Test alternative routes before disruption forces the decision. Qualify suppliers beyond price and technical specification. Link procurement planning to project schedules and inventory policy.

The companies best positioned for 2027 will not necessarily be the largest. They will be the ones with clear data, flexible contracts and the ability to act early.

FORGE will track these trends through the year, connecting global developments with decisions for mines, mills, processors, suppliers and buyers.





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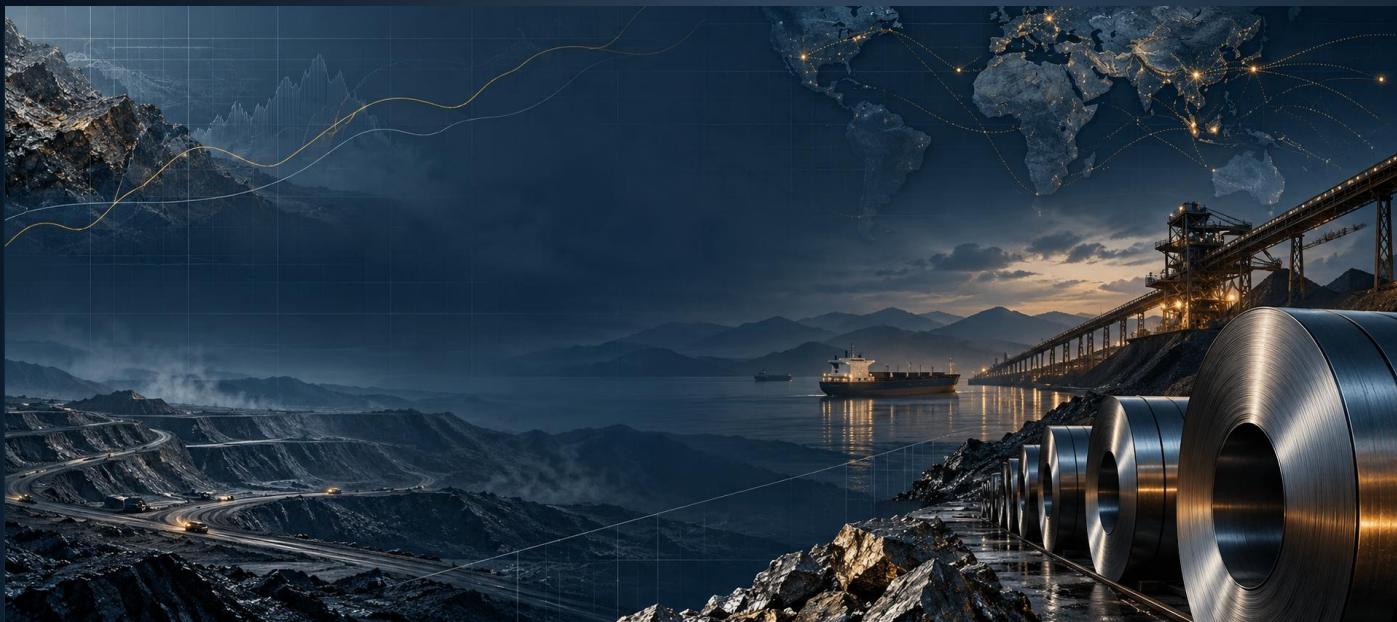
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2027 IN NUMBERS

Numbers will matter in 2027 because they reveal where market narratives meet physical limits. The most important indicators will not be headline prices alone, but the relationship between capacity, utilisation, inventories, project approvals and delivery schedules.

For mining, watch reserve replacement, processing capacity and the time required to bring new tonnes to market. For metals, follow grid investment, power availability and regional premiums. For steel, utilisation rates, scrap flows, export volumes and carbon costs will show more than nominal capacity figures.

Freight rates, port congestion, interest costs and exchange-rate movements will complete the picture. Each affects the final landed cost of material.

The figures on this page are intended as a working dashboard: a concise reference point for the year ahead, not a substitute for sector-specific due diligence.

The 2027 dashboard should be read across the chain.

Demand indicators include steel consumption, construction activity, vehicle production, grid spending and industrial investment. Supply indicators include mine output, smelter availability, scrap collection, new capacity and project ramp-up.

Cost indicators are equally important: electricity, fuel, freight, financing and carbon. A favourable demand outlook can still produce weak margins where costs rise faster than realised prices.

Finally, measure resilience. Concentrated sourcing, limited inventory, one transport route or one processing location can turn a manageable disruption into a commercial problem.

The key number is rarely a single price. It is the gap between what a company can sell, what it costs to deliver and how reliably it can fulfil the contract.



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RISK RADAR 2027

Risk in 2027 will be less about one dramatic event than the interaction of several manageable pressures. Energy volatility, trade restrictions, weather disruption, financing delays, freight bottlenecks and political change can each affect a project or contract. Together, they can alter the economics of an entire supply chain.

The first risk is concentration. A single mine, refinery, port, rail corridor or supplier can become a point of failure when alternatives have not been prepared. The second is timing: projects that look viable on paper may lose value when permits, grid access, equipment or funding arrive late.

A third risk is regulatory divergence. Carbon rules, origin requirements, export controls and local-content expectations are moving at different speeds across regions. Commercial teams must understand these rules before material is committed.

The purpose of a risk radar is not to predict disruption. It is to make exposure visible early enough to create options.

Risk management begins with preparation, not prediction. Companies should identify which materials, routes and suppliers are critical to each operation, then test what happens when one of them is unavailable.

The priority is to create alternatives before they are needed. This may mean a second supplier, an approved substitute grade, additional inventory, a different port or a revised contract structure. Each option has a cost, but the cost of having no option is usually higher.

Visibility is equally important. Procurement, operations, finance and commercial teams often hold different parts of the same risk. A shared view of exposure allows action before delays affect production or customer delivery.

In 2027, resilience will be measured by how quickly a business can adapt without losing control of cost, quality or trust.





MARKET PULSE

Market conditions in 2027 will be defined by differences between regions, grades and delivery terms. A strong headline price may hide weak margins in one market and tight availability in another. The commercial picture will depend on where material is produced, how it is processed and how quickly it can reach the customer.

For metals, attention will focus on physical premiums, treatment charges, inventories and project timing. For steel, utilisation, scrap availability, energy costs and trade measures will shape regional competitiveness. For bulk materials, freight and port performance remain central to the final price.

The market pulse is therefore a practical reading of movement across the chain. It connects price direction with the operating conditions behind it: demand, supply, cost, logistics and policy.

The objective is not to chase every daily change. It is to identify which signals are changing the commercial position of producers, buyers and suppliers.

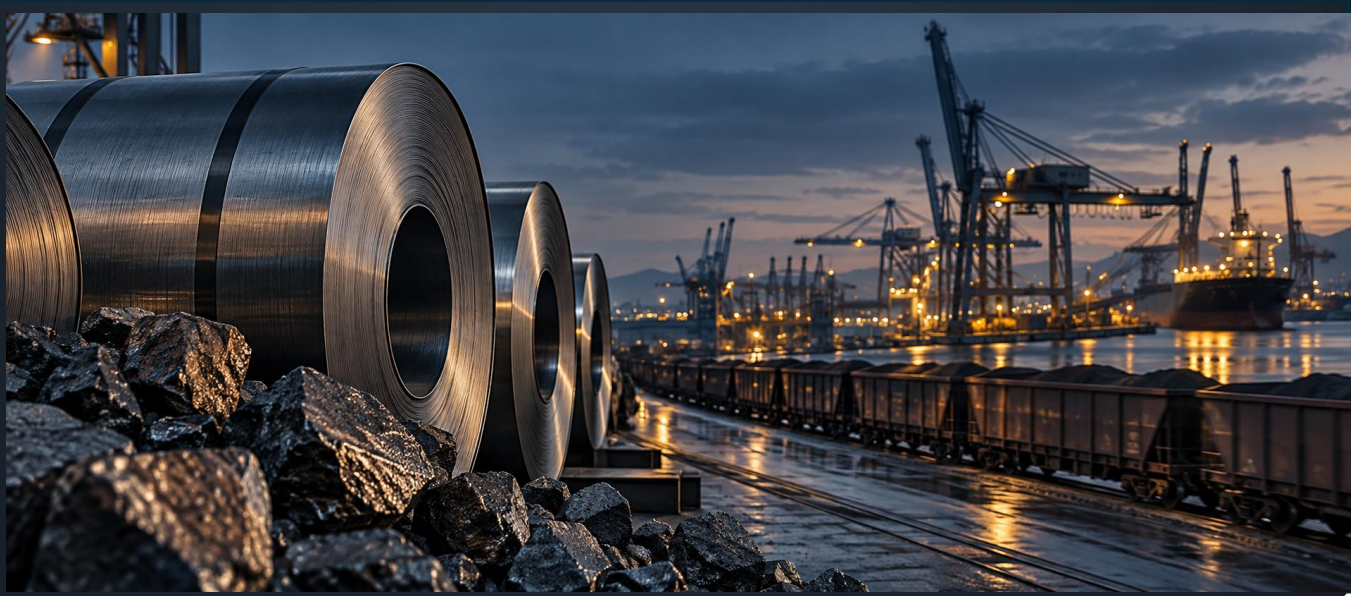
A useful market view starts with the physical chain.

Watch whether supply is genuinely available, not only announced. Follow lead times, port queues, vessel availability, stock levels and the ability of processors to deliver the required grade. These indicators often move before a price change becomes visible.

Buyers should also separate short-term volatility from structural change. A temporary freight increase may be managed through scheduling. A new tariff, power constraint or supplier closure may require a different sourcing strategy.

For sellers, the priority is to understand the customer's total delivered cost. Material price is only one element. Reliability, working capital, technical support and contract flexibility can be equally valuable.

In 2027, the strongest commercial decisions will be made with a clear view of both the market price and the route behind it.





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WHERE CAPITAL FLOWS

Capital is returning to industrial materials, but it is moving selectively. The strongest projects are not simply those with the largest resource or the highest announced capacity. They are the ones that can demonstrate power access, permits, credible construction schedules, financing and a route to market.

Investment is concentrating around copper, processing capacity, grid-related metals, recycling and lower-carbon steel. Governments are also directing capital toward domestic or allied supply chains where security matters as much as price.

For investors and operators, execution is now the central test. A project must convert engineering plans into reliable tonnes, quality and delivery. Announcements create attention; completion creates value.

The flow of capital will reshape competition across the chain. New mines require roads, power, water, equipment and logistics. Processing plants require technology, reagents, skilled labour and long-term feedstock. Steel investments depend on electricity, scrap access and customer demand.

This creates opportunities beyond the project owner. Equipment suppliers, engineering firms, transport providers and specialist service companies all participate when investment moves from feasibility to construction.

However, capital remains disciplined. High costs, delayed permits or unclear offtake can quickly weaken a project case. The market will reward projects that are technically sound, commercially realistic and connected to a resilient supply chain.



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CRITICAL MINERALS

Critical minerals have become strategic inputs for energy systems, defence, digital infrastructure and advanced manufacturing. Copper, nickel, lithium, rare earths, graphite and other materials are no longer assessed only through traditional commodity cycles.

The central issue is not geological scarcity alone. It is where material is mined, processed, refined and converted into usable products. A country can hold significant resources while remaining dependent on external processing, technology or transport routes.

This is why governments and companies are seeking more transparent, diversified and secure supply chains. The focus is moving from access to ore toward control of the stages that create industrial value.

For buyers, critical-mineral strategy begins with visibility. Know the origin of material, the concentration of processing capacity and the alternatives available if a supplier or route is disrupted.

For producers, the opportunity is to move beyond raw material where possible. Local processing, reliable energy, technical partnerships and long-term offtake can strengthen a project's commercial position.

The challenge is that new supply takes time. Mines, refineries and conversion plants require capital, permits, skills and infrastructure. In the near term, resilience will depend on better contracts, qualified alternatives and realistic inventory planning.

Critical minerals are not a separate market. They are increasingly embedded in the wider industrial chain that FORGE follows.





COPPER: THE SUPPLY GAP

Copper sits at the centre of electrification. Grids, renewable power, electric vehicles, data centres, defence systems and industrial equipment all require large volumes of the metal.

Demand is broadening while new supply remains difficult to develop. Ore grades are declining at many mature mines, permitting is lengthy and projects require major infrastructure before the first concentrate can be shipped.

The issue is not that copper will disappear. It is that available supply may arrive more slowly than demand from power systems and industry. This can create tight regional markets even when global production appears adequate.

For buyers, copper exposure is now a strategic planning issue rather than a simple purchasing line.

The copper chain depends on more than mine output. Concentrators, smelters, refineries, power supply, water, rail and port capacity all determine whether new material reaches the market.

This makes project timing critical. A delayed permit, equipment order or grid connection can postpone supply for years. At the same time, recycling will become more valuable, but it cannot fully replace the need for primary production.

Companies should monitor where future tonnes are expected, which projects have secured financing and how much processing capacity is available. The key commercial question is not only the copper price; it is whether the required grade can be delivered, from a reliable source, when it is needed.





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PROJECT PIPELINE

The project pipeline is where future supply becomes visible—or where it disappears. Hundreds of mining, processing and metals projects may be announced, but only a smaller group will secure permits, financing, equipment, power and construction capacity.

A strong project needs more than a good resource. It needs a workable engineering plan, an experienced delivery team, reliable infrastructure and customers willing to commit to future material. Delays in any one area can change both timing and economics.

For the market, project status matters as much as project size. A modest development with permits, funding and clear offtake may be more relevant than a much larger project still at an early study stage.

The pipeline should therefore be read as a sequence: discovery, study, approval, financing, construction, commissioning and ramp-up.

In 2027, delivery risk will remain high across the project pipeline. Inflation, long-lead equipment, grid connections, contractor availability and local permitting can all push a schedule beyond its original target.

This creates an important distinction between planned capacity and deliverable capacity. Buyers should test whether a project has completed the steps that usually cause delay: land access, permits, financing, engineering, procurement and logistics.

For project owners, transparency becomes a commercial advantage. Clear milestones, realistic ramp-up assumptions and credible customer commitments help build confidence with lenders, suppliers and offtake partners.

The most valuable pipeline is not the longest list of projects. It is the group of projects most likely to become dependable tonnes, products and delivery capacity.



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BATTERY METALS RESET

Battery metals are entering a more disciplined phase. The first wave of investment was driven by rapid growth expectations. The next phase will be shaped by project quality, processing capability, cost control and real demand from manufacturers.

Lithium, nickel, graphite, cobalt and manganese remain important, but their markets are not identical. Each has different resource locations, processing routes, customer requirements and exposure to technology change.

The reset is not a retreat from electrification. It is a move from broad enthusiasm to selective execution. Projects with reliable power, credible processing plans and customer support will be better placed than those built on price assumptions alone.

For producers, the challenge is to match material quality with the needs of the battery chain. Chemical specifications, traceability, emissions and delivery consistency matter alongside volume.

For buyers, diversification remains essential. One supplier, one country or one processing route can create exposure when demand rises or policy changes. Long-term contracts, qualified alternatives and recycling capacity can reduce this risk.

Battery technology will also continue to evolve. Changes in chemistry can shift demand between materials, but they do not remove the need for secure mineral supply and processing.

The strongest projects will be those designed for flexibility: able to meet technical standards, adapt to customers and operate through changing market conditions.





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RARE EARTHS & SUPPLY SECURITY

Rare earths are essential to high-performance magnets, electronics, defence systems, wind turbines and advanced industrial equipment. Their strategic importance comes not only from the mineral itself, but from the specialised processing required to turn concentrate into usable material.

The supply chain is highly concentrated at several stages. Mining may take place in one region, while separation, refining, metal making and magnet production happen elsewhere. This creates exposure for manufacturers that depend on a small number of qualified sources.

The objective is not complete self-sufficiency. It is to build a supply system with more than one credible route from resource to finished component.

Supply security depends on technical capability as much as resource access. Separation plants require specialist knowledge, stable reagents, energy and strict quality control. Building new capacity therefore takes time.

For buyers, the priority is to understand where dependency sits: mine supply, processing, metal conversion or component manufacturing. Each stage may need a different solution.

Long-term offtake, qualified alternative suppliers, recycling and partnerships with processors can reduce risk. However, contracts must be based on real deliverability, not only announced capacity.

Rare earths show why mineral strategy is now industrial strategy. The material has value only when every link in the chain is capable of performing.





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EXPLORATION & GEOSCIENCE

Exploration is the first stage of every future supply chain. Before a mine is designed, financed or built, geologists must understand the resource: its grade, geometry, metallurgy, water conditions, infrastructure needs and potential recovery.

Modern exploration combines fieldwork with geophysics, drilling, laboratory analysis and increasingly sophisticated data interpretation. The objective is not simply to find mineralisation. It is to define a deposit that can become a viable project.

Geoscience therefore shapes decisions long before production begins. Better information can reduce drilling risk, improve mine planning and identify processing challenges early. It can also prevent capital from being committed to resources that cannot be developed responsibly or competitively.

The quality of the first data often determines the quality of every decision that follows.

The exploration cycle is becoming more selective. Investors and partners want clearer evidence of grade, recoverability, permitting potential and infrastructure before committing significant capital.

Technology improves the process. Remote sensing, geophysical surveys, digital core logging and data modelling help teams target drilling more effectively. Yet technology does not replace field knowledge, disciplined sampling or sound geological interpretation.

For project developers, early technical work can save years later in the pipeline. Understanding metallurgy, water, energy and access at the exploration stage helps avoid costly redesigns.

For buyers and suppliers, exploration is an early signal of future opportunity. It shows where new mineral districts may emerge and where demand for equipment, engineering, processing and logistics could begin.



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VIETNAM: COUNTRY PROFILE

Vietnam is becoming a more important industrial and logistics market in Asia. Its growth is supported by manufacturing investment, export capacity, a long coastline and improving connections to regional supply chains.

The country's industrial model is based on integration. Ports, industrial zones, power infrastructure, processing capacity and international trade are developing together. This creates opportunities for metals, machinery, equipment, logistics and technical services.

Vietnam is also exposed to the pressures facing every fast-growing industrial economy: energy reliability, infrastructure capacity, imported raw materials, skills and changing trade rules. How these issues are managed will shape the next stage of its development.

For the mining and metals sector, Vietnam is not only a destination market. It is an increasingly relevant link between resource supply, manufacturing demand and regional trade.

Vietnam's industrial expansion creates demand across the full materials chain. Construction needs steel, cement and equipment. Manufacturing needs metals, components, chemicals and reliable logistics. Export growth depends on ports, warehouses and predictable shipping connections.

The opportunity is strongest where suppliers can offer more than a product. Technical support, local partnerships, delivery reliability and clear commercial terms are increasingly important in a competitive market.

For overseas companies, market entry requires attention to local conditions. Regulations, customer expectations, infrastructure and procurement practices can vary between regions and industrial zones.

Vietnam's advantage is its position within Asian trade networks. Its challenge is to develop capacity fast enough to support growth without creating bottlenecks in power, transport or raw-material supply.





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VIETNAM'S STEEL BUILD-OUT

Vietnam's steel industry is expanding alongside construction, manufacturing and export growth. New capacity is designed to serve a market that needs more flat steel, long products, coated materials and industrial inputs.

The opportunity is significant, but growth also brings pressure. Steelmaking depends on imported iron ore, coking coal, scrap, electricity, port capacity and reliable freight. Cost competitiveness will therefore depend on the full supply chain, not mill capacity alone.

Producers are also facing higher expectations on quality, efficiency and emissions. Customers increasingly need consistent specifications, dependable delivery and transparent commercial terms.

Vietnam's steel build-out is part of a wider industrial transition: turning infrastructure, trade access and manufacturing demand into a stronger regional position.

For suppliers, Vietnam's steel sector creates demand beyond raw materials. Mills require refractories, electrodes, rolls, bearings, automation, water treatment, maintenance and specialised engineering services.

For buyers, the key issue is reliability. The right product must arrive with the required grade, documentation and lead time. This gives an advantage to producers and distributors that combine technical knowledge with strong logistics.

The market will remain competitive. Domestic capacity, regional imports and changing trade rules will shape margins across different product groups. Companies must follow cost movements as closely as demand.

Vietnam's steel industry is still developing its next layer of capability. The strongest players will be those that build resilient sourcing, efficient operations and long-term relationships with industrial customers.

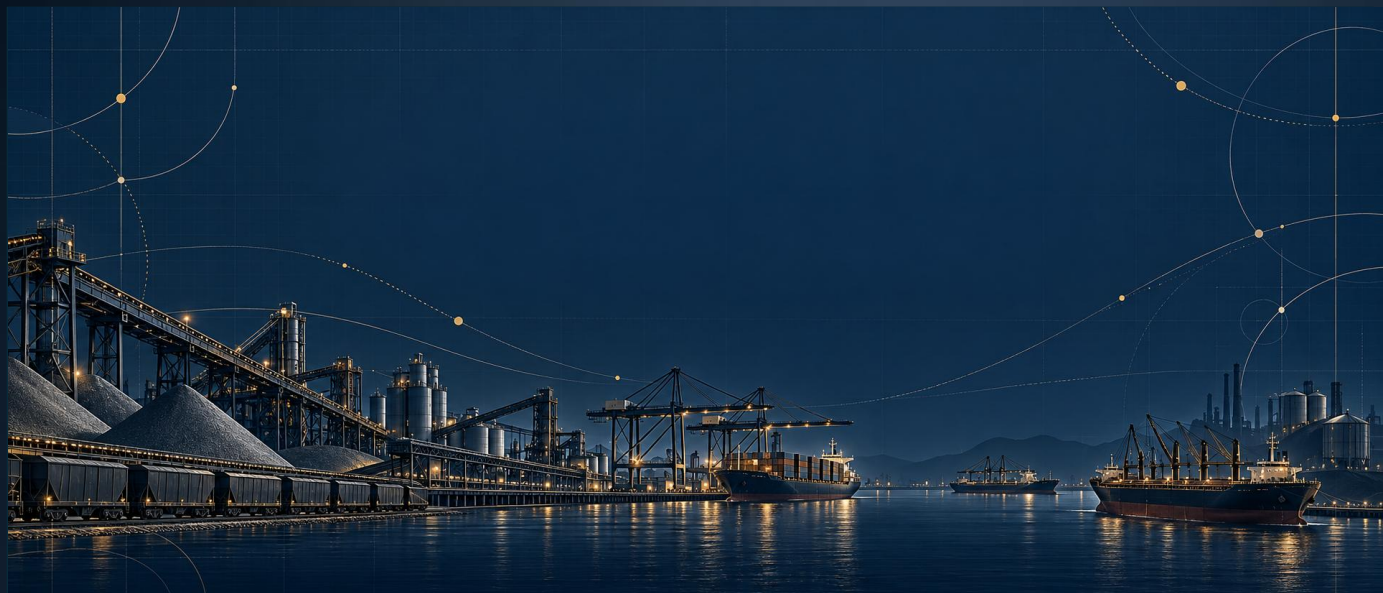




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VIETNAM IN NUMBERS

Vietnam's industrial story can be read through a small set of connected indicators: manufacturing output, export activity, port capacity, energy demand, steel consumption and investment in industrial zones.

No single number explains the market. Export growth can raise demand for logistics and materials, while also increasing pressure on power, land and transport. New industrial capacity can strengthen domestic supply, but may also deepen dependence on imported ore, coal, scrap and equipment.

The useful measure is the relationship between these indicators. It shows whether infrastructure and raw-material access are keeping pace with manufacturing expansion.

For suppliers and investors, the numbers provide a market map: where demand is building, where bottlenecks may emerge and where new industrial partnerships can create value.

The country's industrial indicators should be viewed together.

Manufacturing and exports show the scale of demand. Steel output, construction activity and power use show how quickly capacity is expanding. Imports of ore, coal, scrap, machinery and components reveal where external supply remains essential.

Ports and logistics are equally important. Faster cargo movement can strengthen Vietnam's role in regional trade, while congestion or limited storage can raise costs across the chain.

For companies entering the market, these numbers are not background information. They help identify practical questions: where to locate stock, which ports to use, when to secure supply and which customer sectors are growing fastest.

Vietnam's data points to a market with momentum—and a growing need for reliable industrial partners.



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MINERALS BENEATH VIETNAM.

Vietnam has a diverse geological base that includes industrial minerals, bauxite, rare earths, tungsten, titanium, graphite and other resources. The opportunity is not only in what lies beneath the ground, but in how those materials can be explored, processed and connected to industry.

Resource potential alone does not create a supply chain. Projects need reliable infrastructure, energy, water, permits, technical capability and access to customers. These conditions determine whether a deposit becomes a viable industrial asset.

Vietnam's mineral sector therefore sits between two ambitions: developing domestic resources and supporting a fast-growing manufacturing economy. The strongest opportunities will be those that combine responsible extraction with credible processing, logistics and long-term demand.

Vietnam's mineral potential is varied, but development must be selective. Deposits need to meet technical, environmental and commercial tests before they can support industrial demand.

Processing is the decisive link. Raw material has limited value when recovery, energy, water, transport or quality control are weak. Investment in local capability can improve value creation, but only where projects have a secure route to market.

For buyers, domestic resources may create future options, not immediate substitutes for global supply. The relevant questions are grade, processing readiness, delivery reliability and the ability to scale.

Vietnam's minerals will matter most where exploration, infrastructure and downstream demand develop together.





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VIETNAM'S IMPORT NEEDS

Vietnam's industrial growth depends on imported raw materials and intermediate products. Iron ore, coking coal, scrap, machinery, chemicals and specialised components move through the country's ports before reaching mills, factories and construction sites.

This dependence is not necessarily a weakness. It reflects Vietnam's role as a manufacturing and trade hub. But it makes port performance, freight costs, supplier reliability and trade policy important commercial variables.

For steel and metals, the landed cost of material is shaped by more than the purchase price. Vessel availability, discharge rates, storage, inland transport and working capital can all affect competitiveness.

As industrial demand grows, secure import channels will remain essential to Vietnam's next phase of development.

The key question for buyers is continuity. A shipment that arrives late can affect production schedules, inventories and customer commitments. Companies therefore need reliable suppliers, alternative origins and clear logistics planning.

Ports are central to this system. Capacity, draft, storage, rail and road connections determine how efficiently imported material reaches industrial users. Investment in these links can reduce cost across the chain.

Vietnam's import needs will remain closely tied to global markets. Changes in ore, coal, scrap, freight and currency will feed directly into local industry.

The strongest operators will be those that manage supply as a connected system—from contract and vessel booking to final delivery at the plant.





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PORTS, LOGISTICS & ACCESS

Ports are the physical gateway between Vietnam's industrial economy and global markets. They receive ore, coal, scrap, machinery and components; they also carry finished steel, manufactured goods and processed materials to customers across Asia and beyond.

For industrial users, access is measured in more than berth capacity. Draft, storage, handling equipment, customs procedures, inland roads, rail connections and vessel schedules all affect the reliability of supply.

As Vietnam's manufacturing base expands, logistics performance becomes a competitive advantage. Efficient ports reduce landed cost, shorten lead times and allow producers to respond more quickly to market demand.

The strongest supply chains will connect port operations with plant planning, inventory policy and customer delivery—not treat transport as a separate function.

Reliable logistics is built

before the vessel arrives. Importers and producers must coordinate contracts, shipment windows, stock levels, customs documentation and inland transport as one operating plan.

A port can be modern yet still create delays if storage is limited, connections are weak or cargo handling does not match industrial demand. The same applies beyond the quay: road congestion, rail availability and warehouse capacity shape final delivery performance.

For suppliers, logistics capability is part of the product offering. A technically correct material loses value if it cannot reach the customer on time, in the right condition and with complete documentation.

Vietnam's continued industrial growth will make these links more important. Access to global material must be matched by the ability to move it efficiently through the domestic economy.



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VIETNAM: KEY PLAYERS

Vietnam's industrial growth is supported by a broad group of producers, processors, traders, logistics providers and equipment suppliers. Their roles differ, but each contributes to the movement of material from import terminal or domestic resource to finished industrial product.

Steelmakers and fabricators are expanding technical capability to serve construction, manufacturing and export markets. Around them, service companies provide maintenance, engineering, automation, refractories, transport and specialised materials.

The most effective players combine production capability with commercial discipline. They understand customer specifications, manage working capital carefully and build reliable supply relationships.

For international partners, the market is not defined by one company alone. It is an ecosystem where local knowledge, technical support and delivery performance create long-term value.

Partnerships will shape the next stage of Vietnam's industrial market. International suppliers bring technology, specialised materials and global sourcing networks. Local companies bring market access, operating knowledge and customer relationships.

The strongest partnerships are practical. They solve a clear need: secure feedstock, improve process efficiency, reduce downtime, manage quality or shorten delivery time. Commercial success follows when both sides understand the operational reality of the customer.

Supplier selection is becoming more demanding. Price remains important, but technical service, documentation, stock availability and response speed can decide who wins repeat business.

Vietnam's key players will be those able to connect international capability with local execution—and deliver consistently as the market grows.





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VIETNAM: OUTLOOK & OPPORTUNITIES

Vietnam enters its next industrial phase with clear advantages: a strong manufacturing base, access to Asian trade routes, expanding ports and continuing investment in production capacity.

Opportunities exist across steel, fabrication, machinery, processing, maintenance, logistics and technical services. Demand will grow where suppliers help customers improve reliability, quality, energy efficiency and delivery performance.

The market will remain competitive. Imported materials, energy costs, freight exposure and changing trade rules will continue to shape margins. Success will depend on execution rather than ambition alone.

For international companies, Vietnam offers more than sales potential. It offers a chance to build long-term industrial partnerships in a market that is becoming more connected, capable and strategically important.

The most attractive opportunities will be linked to real operating needs.

Steel producers require efficient equipment, reliable inputs and practical maintenance support. Fabricators need consistent grades, shorter lead times and dependable logistics. Port and warehouse operators need systems that move cargo safely and predictably.

This creates space for suppliers that bring technical knowledge as well as product. Process improvement, automation, quality control, energy management and inventory planning can all deliver measurable value.

Vietnam's industrial future will be built through many connected decisions: where material is sourced, how it is processed, how it moves and how reliably it reaches the customer.

The companies that understand this full chain will be best **placed to grow with the market.**





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REGIONAL SNAPSHOT

The global industrial market is moving at different speeds. Demand, energy costs, trade rules and investment priorities now vary sharply between regions.

Asia remains central to manufacturing and material consumption. The Americas are strengthening domestic supply chains. Europe is balancing competitiveness with carbon policy. Africa and the Middle East are expanding their roles in minerals, energy and processing.

For producers and buyers, this means there is no single market outlook. A material that is abundant in one region may be constrained in another because of freight, processing capacity, tariffs or local demand.

The regional snapshot is therefore a practical guide to where industrial momentum is building—and where supply-chain pressure may emerge next.

Regional differences will shape commercial decisions throughout 2027.

The key variables are familiar but increasingly connected: power cost, industrial policy, access to raw materials, port capacity, labour, financing and customer proximity. Together, they determine where a mine, plant or supplier can compete.

Companies should avoid treating global demand as one uniform signal. A strong construction cycle in one market may coincide with weak utilisation elsewhere. New capacity may improve supply while creating pressure on margins and trade flows.

The most resilient businesses will be those that track regional conditions closely and adjust sourcing, inventory and sales plans before market changes become visible in headline prices.



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STEEL MARGINS UNDER PRESSURE

Steel markets in 2027 will be shaped less by headline demand than by the margin between selling price and delivered cost. Overcapacity, uneven regional consumption, energy prices and trade measures are keeping that margin under pressure.

A mill can report stable volumes while profitability weakens. Ore, scrap, coking coal, electricity, freight and carbon exposure all move through the cost base at different speeds. The result is a market where price alone tells only part of the story.

The strongest producers will be those with flexible feedstock, efficient operations and access to customers that value quality, reliability and lower-carbon material.

Trade policy will intensify these differences. Tariffs, quotas, safeguard measures and origin requirements can change the economics of a shipment before it reaches the customer.

This makes regional positioning critical. Producers close to demand centres may benefit from shorter logistics chains, while exporters need to manage freight, documentation and trade exposure more carefully.

For buyers, the priority is to understand the full delivered cost—not only the mill price. For mills, the priority is to protect margin through product mix, energy discipline and dependable customer relationships.

In a pressured market, operational control becomes a commercial advantage.





THE COST STACK

The cost of a tonne of steel begins long before the furnace. Iron ore, pellets, coking coal, scrap, alloys, electricity, labour, consumables, freight and financing all contribute to the final cost position.

Their importance changes by production route. Integrated mills are highly exposed to ore, coal and coke. Electric arc furnaces depend more on scrap quality, electricity and electrode cost. DRI routes add the availability and price of gas, power or hydrogen.

This is why two mills producing similar grades can have very different margins. The commercial result depends on the input mix, plant efficiency, logistics and the ability to pass cost changes through to customers.

Cost management is not only a purchasing task. It links procurement, production, maintenance, energy management and sales.

A favourable raw-material contract can lose value through poor yield, unplanned downtime or expensive logistics. Likewise, a higher-cost input may improve profitability when it delivers better quality, lower scrap loss or more reliable production.

For buyers, understanding the cost stack helps explain supplier behaviour during volatile periods. For mills, it supports decisions on product mix, inventory and capacity use.

The most competitive plants do not simply buy inputs at the lowest price. They manage the full chain of cost, conversion and delivery with discipline.





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SCRAP: THE STRATEGIC FEEDSTOCK

Scrap is becoming one of most strategic inputs in steelmaking. As electric arc furnace capacity grows, competition is increasing for material that is clean, well sorted and consistent enough to produce demanding grades.

Volume alone is not sufficient. Copper, tin and other residual elements can limit the use of lower-grade scrap in flat products, automotive steel and specialised applications. Sorting, shredding, separation and traceability therefore create real commercial value.

For steelmakers, scrap strategy now affects quality, energy use, emissions and production flexibility. For suppliers, it creates demand for better collection systems, processing technology and dependable logistics.

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The scrap market is becoming more regional. Export restrictions, local EAF investment and transport costs can quickly change where material is available and at what price.

Mills need a clear view of feedstock risk: supplier concentration, seasonal collection patterns, contamination levels and the cost of alternative grades. Strong relationships with processors are increasingly important.

Technology helps improve control. Advanced sorting, optical systems, magnets and data-led inventory management can raise recovery while protecting quality.

In 2027, scrap will not be treated as a low-value by-product. It will be managed as a critical industrial feedstock with direct influence on margin and decarbonisation.



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INSIDE THE MELT SHOP

The melt shop is where raw materials become controlled liquid steel. The route may begin with a blast furnace and basic oxygen furnace, an electric arc furnace or direct-reduced iron, but every route depends on disciplined heat, chemistry and timing.

The objective is not simply to melt metal. Operators must achieve the required temperature, carbon level and alloy composition while protecting refractory life, energy efficiency and process stability.

Primary metallurgy creates the first quality conditions. A poor charge mix, unstable power input or weak process control can create problems that become more expensive at casting, rolling and finishing stages.

Secondary metallurgy refines the result. Ladle furnaces, vacuum treatment, alloy additions and temperature control allow mills to produce grades that meet demanding customer specifications.

This stage connects process knowledge with commercial value. Better control can reduce inclusions, improve cleanliness, protect yield and support more consistent downstream performance.

For producers, the melt shop is also a major cost centre. Electricity, electrodes, refractories, alloys and tap-to-tap time all affect margin. For equipment and service suppliers, it is a high-value market where reliability matters as much as technical capability.

A well-run melt shop creates the foundation for every tonne that follows.





CONTINUOUS CASTING

Continuous casting is the point where liquid steel becomes a slab, billet or bloom ready for rolling and further processing. It is also where small variations in temperature, flow and mold conditions can become visible quality problems.

The process demands precise control. Mold level, cooling water, strand speed and withdrawal conditions must work together to prevent cracks, segregation and surface defects.

A stable caster protects both quality and productivity. It reduces rework, improves yield and provides a more reliable input for downstream mills.

Breakout prevention is one of the critical disciplines in casting. A failure can damage equipment, interrupt production and create major safety risk.

Modern casters use sensors, thermal monitoring and process models to detect instability before it becomes a problem. Yet technology must be supported by strong operating practice, maintenance and disciplined response procedures.

For customers, casting quality has consequences far beyond the melt shop. Surface condition, internal cleanliness and dimensional consistency influence rolling performance, final product quality and delivery reliability.

The casting line is where metallurgical control becomes physical steel.





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FOUNDRY & CASTING

Foundries turn liquid metal into components that keep industry moving: castings for power systems, rail, pumps, construction equipment, mining machinery, transport and defence.

The sector combines metallurgical discipline with practical production skill. Mould design, melting practice, pouring temperature, sand quality and cooling rate all influence the final result.

Demand is becoming more selective. Customers expect reliable dimensions, repeatable properties, full documentation and shorter lead times. This creates an advantage for foundries that invest in automated moulding, process control and quality systems.

Automation is changing the foundry floor, but it does not remove the need for metallurgical expertise. Sensors and controls can improve repeatability; experienced teams still need to interpret process signals and respond quickly when conditions change.

Energy, labour availability and environmental compliance remain important cost factors. Foundries are under pressure to use materials efficiently, reduce scrap and manage emissions while maintaining output.

The commercial opportunity lies in dependable delivery. A casting has value when it arrives with the correct specification, quality records and lead time.

For suppliers, foundries remain a key market for furnaces, molding equipment, sand systems, refractories, simulation software and inspection technology.



THE FORGING FLOOR

Forging gives steel its strength through controlled deformation. Open-die and closed-die processes shape billets into critical components for energy, rail, aerospace, oil and gas, defence and heavy machinery.

The process demands precise control of temperature, force and timing. If the billet cools too quickly, the required structure may not form. If the press sequence is wrong, internal defects or poor grain flow can affect performance.

Large forgings are particularly valuable because capacity is limited. Heavy presses, manipulators, heat-treatment facilities and skilled operators are expensive to build and difficult to replace.

For customers, forging quality is rarely visible in the finished surface alone. Mechanical properties, internal soundness, dimensional accuracy and full traceability determine whether a part can perform in a demanding application.

This makes process documentation essential. Material certificates, heat records, inspection results and machining history follow the component through the supply chain.

The market is also exposed to long lead times. When a major forging shop is fully booked, project schedules can be affected months in advance.

Reliable capacity, technical support and proven quality systems therefore create a strong competitive position for forging suppliers.





HOT & COLD ROLLING

Rolling turns cast steel into the products used by construction, manufacturing, energy and transport. Hot rolling reduces thickness at high temperature; cold rolling delivers tighter gauge, surface quality and mechanical consistency.

Every pass through the mill affects yield and margin. Temperature, speed, roll condition, lubrication and gauge control must work together to achieve the required product.

For producers, rolling performance determines how much value can be captured from each tonne. For customers, it determines whether material can move reliably into stamping, welding, coating, fabrication or final assembly.

Flatness, surface condition and dimensional accuracy are commercial as well as technical measures. A small deviation can create scrap, delays or quality claims further down the chain.

Roll wear is a constant challenge. Mills need reliable roll supply, maintenance planning and process data to protect product quality between changes. Cooling systems, automation and inspection equipment all contribute to stable output.

The market is becoming more demanding. Customers want tailored grades, shorter lead times and consistent documentation. Mills that can combine flexible production with disciplined quality control will be better positioned to protect both volume and margin.





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FABRICATION & FINISHING

Fabrication is where steel becomes a usable industrial product. Service centres, cutting lines, welding shops, coating facilities and machine shops turn coils, plate and sections into components ready for construction, equipment and manufacturing.

This stage creates value through accuracy and responsiveness. Customers need the correct grade, dimensions, surface condition and delivery sequence—not simply raw steel.

Fabricators must manage price volatility while protecting throughput. Efficient nesting, yield control, stock planning and reliable equipment help reduce waste and keep projects on schedule.

The strongest downstream operators combine technical capability with flexible service, allowing customers to simplify their own production and inventory requirements.

Finishing operations are becoming more automated. Robotic welding, CNC cutting, digital nesting and quality tracking help fabricators improve consistency while reducing material loss.

However, equipment alone is not enough. Skilled teams must understand weld procedures, material behaviour, tolerances and customer requirements. A technically correct cut or weld can still fail if handling, coating or documentation is weak.

For buyers, fabrication capability is part of supply security. A dependable partner reduces the need for internal stock, rework and last-minute sourcing.

The future of fabrication lies in combining efficient machinery with responsive engineering and reliable delivery.



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CONSUMABLES THAT KEEP PLANTS RUNNING

Steel plants depend on consumables that are rarely visible in the final product but essential to every production hour. Refractories, graphite electrodes, rolls, industrial gases, ferroalloys, lubricants and cutting tools protect quality, control cost and keep equipment operating.

A shortage in one of these inputs can slow an entire plant. Refractory performance affects furnace availability; electrode quality influences EAF efficiency; roll condition shapes product consistency.

For procurement teams, these are no longer routine purchases. Availability, technical support, delivery time and supplier reliability must all be assessed before a shutdown or production campaign begins.

Consumables are a direct link between maintenance strategy and margin. The lowest unit price can become expensive if a product fails early, reduces yield or extends downtime.

Plants therefore need clear specifications, qualified suppliers and realistic inventory planning. Critical materials should be assessed by operational impact, not only by purchase value.

Suppliers that understand the process can offer more than material. They can support installation, monitoring, performance analysis and faster troubleshooting when conditions change.

In 2027, the most resilient plants will treat consumables as a managed risk category—not as an afterthought.





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AUTOMATION IN THE HOT ZONE

Automation is moving deeper into steel production. Level 2 systems, sensors and process models now support decisions in melting, casting and rolling, where small variations can affect quality, yield and energy use.

The purpose is not to replace experienced operators. It is to give them faster, clearer information about temperature, chemistry, equipment condition and production stability.

A well-designed system can detect variation early, recommend adjustments and help teams maintain a more consistent process from heat to heat.

The real value of automation comes from integration. Data from the melt shop, caster, rolling mill and maintenance systems must be reliable and available at the point of decision.

Plants that connect operations with quality and maintenance data can reduce unplanned losses and respond faster to changing conditions. They can also build a clearer record of how each product was made.

For suppliers, the opportunity is not only software. It includes sensors, controls, cybersecurity, operator interfaces and technical support.

In the hot zone, better information becomes better control.





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MAINTENANCE & RELIABILITY

Reliability is built before a machine fails. In steel plants, gearboxes, drives, pumps, cranes and rolling equipment must perform under heat, dust, vibration and continuous load.

A planned maintenance programme combines inspection, condition monitoring, spare-parts planning and disciplined shutdown work. Vibration sensors, oil analysis and thermal checks can reveal deterioration before it causes lost production.

The goal is not simply fewer breakdowns. It is to protect safety, product quality, delivery commitments and the value of every operating hour.

Maintenance decisions should be based on operational risk. A small component may have a large impact if its failure stops a critical line or creates a safety exposure.

This requires cooperation between maintenance, production, procurement and engineering. Teams need accurate equipment history, clear work priorities and access to qualified service partners.

Spare parts also require strategy. Long-lead items, obsolete components and supplier concentration can turn a routine repair into an extended outage.

The most reliable plants make maintenance visible, measurable and connected to production performance.



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QUALITY CONTROL & TESTING

Quality control begins with knowing exactly what is in the steel. Chemical composition, mechanical properties, surface condition and internal structure must meet the specification before material moves to the next stage.

Modern plants combine laboratory analysis with inline inspection. Spectrometers, ultrasonic testing, dimensional controls and surface-detection systems help identify variation before it becomes a customer claim.

Traceability connects every result to the heat, cast, coil or component. This is increasingly important for regulated markets, demanding projects and international trade.

Testing is not a final checkpoint alone. It is a feedback system for the whole plant.

When laboratory and production data are connected, teams can identify recurring defects, improve process settings and reduce the cost of rework. Reliable results also support faster release decisions and stronger customer confidence.

For buyers, certificates and inspection records are part of the product. They confirm that the material supplied is the material ordered.

In 2027, quality leadership will depend on accurate data, disciplined procedures and the ability to prove performance at every stage.





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SAFETY AROUND MOLTEN METAL

Molten-metal operations demand strict discipline. Tapping, ladle transfer, crane movement and refractory work combine high temperature, heavy equipment and limited room for error.

Safe plants control these risks through clear exclusion zones, reliable protective equipment, trained teams and well-defined operating procedures. Every person must understand where to stand, when to move and who has authority during a critical operation.

Technology supports prevention. Cameras, sensors, remote controls and condition monitoring can reduce exposure, but they do not replace good preparation and communication.

Safety performance is closely linked to operational quality. A poorly maintained ladle, an unclear route or a rushed handover can create risk long before an incident occurs.

The strongest safety culture is visible in daily habits: inspections completed, near misses reported, procedures followed and teams willing to stop work when conditions are unsafe.

For plant leaders, safety must be measured as seriously as production and cost. A lost-time incident affects people first, then reliability, reputation and customer confidence.

In a high-temperature industry, prevention is a core production discipline.





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ENERGY EFFICIENCY IN THE MILL

Energy is one of the largest and most variable costs in steel production. Furnaces, electric arc operations, rolling mills, compressors and cooling systems all require continuous power and heat.

Efficiency begins with understanding where energy is lost. Furnace heat, compressed air leaks, idle equipment, poor insulation and unstable production schedules can add significant cost to every tonne.

The most effective improvements are often practical: better combustion control, maintained refractories, heat recovery, efficient motors and disciplined operating routines.

Energy management also needs commercial planning. Power contracts, peak-demand exposure and production timing can influence cost as much as technical efficiency.

Plants that connect energy data with production data can identify which products, shifts and operating conditions consume the most energy. This supports better scheduling and more accurate costing.

Waste heat offers further opportunity. Recovered energy can support preheating, steam generation or other plant needs when systems are properly designed and maintained.

In 2027, energy efficiency will remain one of the clearest routes to stronger margins and lower emissions.



DECARBONISING STEEL

Decarbonising steel is moving from ambition to investment. Producers are evaluating electric arc furnaces, direct-reduced iron, higher-quality scrap, renewable power and carbon-capture systems.

Each route has different requirements. EAF conversion depends on scrap availability and electricity. DRI needs reliable pellets, gas or hydrogen, power and new processing infrastructure. Carbon capture adds cost and technical complexity.

There is no single pathway for every mill. The practical choice depends on location, feedstock, energy access, existing assets and the customers willing to support lower-carbon material.

Decarbonisation is also becoming a market requirement. Buyers increasingly ask for emissions data, traceable production routes and evidence behind lower-carbon claims.

For exporters, carbon reporting and border-adjustment rules add a new layer of commercial discipline. Companies need reliable data from raw materials, energy use, transport and production.

The premium for greener steel will vary by market and product. It will depend on customer demand, regulation and the credibility of the underlying process.

The winners will be those that match technical investment with clear measurement, realistic timelines and commercially viable products.





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SUPPLY-CHAIN EXECUTION

Supply-chain performance is measured in execution. A mill or fabricator can have the right strategy, but delivery still depends on qualified suppliers, available inventory, accurate documentation and dependable transport.

Critical items often have long lead times: rolls, electrodes, refractories, bearings, drives and specialised spare parts. A missing component can delay a shutdown, reduce output or disrupt customer commitments.

Strong supply chains identify these risks early. They combine realistic stock levels with supplier qualification, clear specifications and regular communication across procurement, maintenance and production.

Supplier relationships are becoming more operational. The best partners provide material, service support, technical information and early warning when availability changes.

Contracts also need attention. Lead-time commitments, quality requirements, inspection rights and contingency arrangements should be clear before a critical order is placed.

Digital tools can improve visibility, but they work only when inventory data, specifications and supplier records are accurate. A dashboard cannot solve a poorly defined requirement.

For industrial buyers, supply-chain resilience is not simply about holding more stock. It is about knowing which items matter most, where the risks are and how quickly the business can respond.





GSR ANALYTIX

FORGE



EVENTS & FAIRS 2027

Trade fairs remain one of the fastest ways to see new equipment, compare suppliers and meet decision-makers across the metals value chain.

The 2027 calendar already includes major dates: USE in Düsseldorf, 20–23 April; Metallurgy.LitMash in Moscow, 8–10 June; and the GIFA, METEC, THERMPROCESS and NEWCAST quartet in Düsseldorf, 21–25 June. Wire Eurasia in Istanbul is scheduled for 7–10 April.

For mills, foundries, fabricators and suppliers, the value is not only the exhibition floor. These events create space for technical discussion, partnership meetings and early visibility on investment plans.

A focused event plan turns attendance into business value. Before travelling, teams should identify target companies, book meetings and define the technologies or markets they need to assess.

For exhibitors, the opportunity is to show more than a product. Strong stands demonstrate technical capability, reliable service and a clear understanding of customers' operational challenges.

For visitors, the best conversations often happen away from the main displays: at technical forums, supplier meetings and informal industry exchanges.

In 2027, the strongest fairs will connect metallurgy with automation, energy efficiency, circularity and practical supply-chain solutions.





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- SCRAP, EAFs & THE RACE FOR QUALITY
- INSIDE THE MELT SHOP
- DECARBONISING STEEL


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