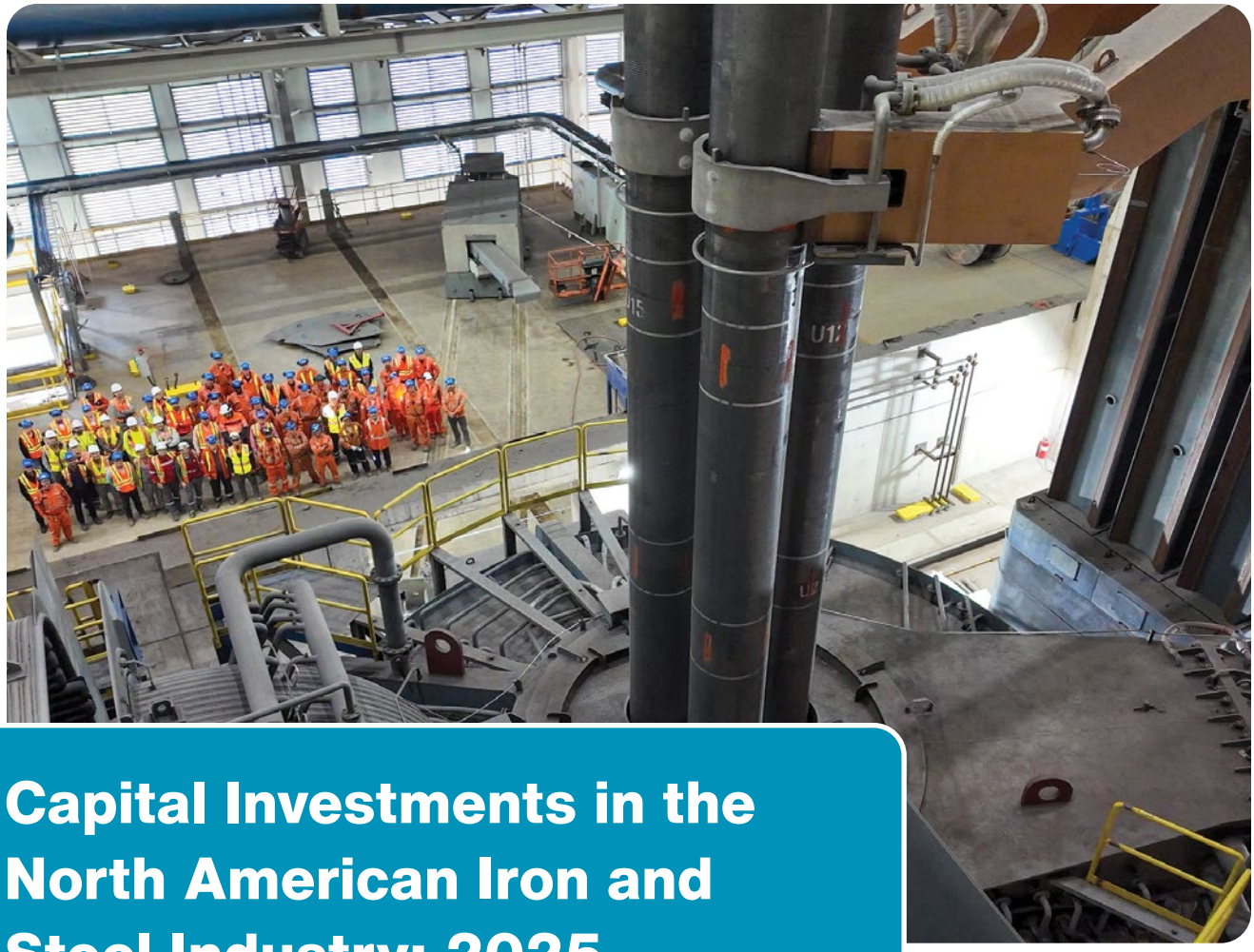


Capital Investments in the North American Iron and Steel Industry: 2025

by Sam Kusic

Through the late 2010s and the first half of this decade, North American steel producers reinvested aggressively in their businesses, adding new melt and casting capabilities, enhancing rolling operations and building out downstream capabilities. But as construction on many previously announced greenfield megaprojects winds down and commissioning and production ramps begin in earnest, 2025 seems to mark a turning point in investment strategies, based on *Iron & Steel Technology's* annual capital expenditures report.

Iron & Steel's Technology's annual roundup of announced capital projects shows that while there are still major greenfield projects on the horizon, the number of equivalent new announcements has fallen from previous years as companies increasingly prioritize upgrades to existing assets over major greenfield construction. And that has not gone unnoticed by AIST member-suppliers, who have noted a change in the nature of new projects.

"We saw a shift in 2025 as companies focused on improving performance and reliability of existing assets. Process efficiency, automation and digitalization, yield improvement, and energy efficiency upgrades became a focus with less interest in greenfield projects," said Zeb Edgerly, vice president of capital sales for ANDRITZ Metals USA.

Representatives of Danieli agreed with that assessment. "Over the past decade, several greenfield projects have been executed for both long and flat products, many featuring Danieli's exclusive endless casting and rolling technology. Looking ahead, we expect the next five years to shift away from new greenfield installations and toward modernization, digitalization and revamping of existing assets," said Mirko Dorigo, vice president of sales for Danieli Corp. USA.

"That said, current tariffs on steel imports may encourage foreign suppliers to invest in new U.S. steelmaking

facilities or pursue strategic partnerships with domestic producers. These moves would help mitigate tariff impacts and maintain competitiveness in the local market, leaving the door open for some additional greenfield activity."

Case in point is Hyundai Steel, which is preparing to start work on a US$5.8 billion automotive-focused, electric arc furnace (EAF)-based sheet mill, part of a broader US$26 billion investment in the U.S. Suppliers are also paying close attention to Nippon Steel's US$11 billion investment in United States Steel Corporation, which it promised as part of its 2025 acquisition of the company. U. S. Steel is planning a wide variety of projects across its fleet, and that will help support new orders going forward, suppliers said.

But as for where producers are directing their capital, decarbonization and green steel initiatives remain top priorities, particularly investments tied to EAF-based production and direct reduced iron (DRI)–based ironmaking, said Neil Tannyan, regional manager for iron and steel at consulting engineering firm Hatch.

"We will likely see more iron-producing projects to support EAF production of high-quality products," said Tannyan.

Both Tannyan and Edgerly also said they see much interest in downstream projects to improve quality and yield. Additionally, Danieli said they believe digital projects, including AI-driven process optimization, will be in line for capital funding.

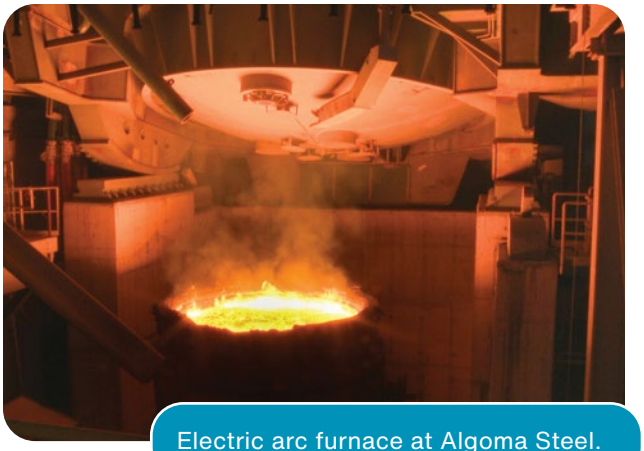
"These areas remain top priorities for producers seeking efficiency, sustainability and long-term competitiveness," Dorigo said.

Automation projects will become all the more important to the industry as it contends with an aging workforce.

"A growing concern across the industry is the aging skilled labor base. With a significant share of tradespeople expected to retire within the next decade, producers are increasingly turning to modern equipment and automation to compensate for the loss of institutional knowledge. Tasks such as hydraulic troubleshooting, furnace tuning and chock rebuilding are becoming harder to staff, prompting mills to invest in technologies that supplement internal expertise," said Tannyan.

Even though project scopes might be shifting from the previous years, suppliers said they are optimistic for the next few years as demand remains healthy and interest levels are elevated.

"2026 and the next 3–4 years look very promising as projects under development move to construction and reshoring of manufacturing leads to additional projects in the metals sector," Tannyan said.



Electric arc furnace at Algoma Steel.

ALGOMA STEEL

Algoma Steel ended more than a century of blast furnace ironmaking in January 2026 as it began decommissioning its No. 7 blast furnace and Nos. 7, 8 and 9 coke batteries. The action is a historic milestone for the Ontario steelmaker, which is now operating solely as an electric arc furnace producer.

"These facilities formed the backbone of Algoma Steel's integrated steelmaking operations for generations. Their decommissioning marks the end of an era in our history as an integrated steel producer and the beginning of a new chapter," the company said in a January statement. "Algoma Steel is now producing steel exclusively through EAF steelmaking [pictured on page 83], reflecting a fundamental shift in how we make steel and the future we are building."

The No. 7 furnace was commissioned in 1975 and was once the largest blast furnace in the British Commonwealth. The company had planned to run its blast furnace in parallel with its new electric arc furnaces, gradually winding down its operation as it ramped up the electric furnaces. However, Algoma announced in late October that it would accelerate its plans and operate the first of its two new EAFs five days a week. The company cited the effects of U.S. trade policy as the cause of the decision.

Algoma achieved the first arc and first steel production on its first EAF in early July, and it has been ramping it up since.

"The furnace and associated meltshop assets have demonstrated stable and reliable performance, achieving quality metrics across a broad range of plate and hot-rolled coil product grades," company executives said last fall. Meanwhile, Algoma is nearing completion of the second furnace and expects to soon begin commissioning. When operating at full capacity, the dual 250-metric-ton

furnaces are expected to produce 3.4 million metric tons annually.

In a separate development, Algoma in late January 2026 signed a binding memorandum of understanding with South Korean shipbuilder Hanwha Ocean, establishing a strategic arrangement that could lead to construction of a new structural beam mill. The arrangement arises from Canada's plans to upgrade its submarine fleet by adding up to 12 new conventionally powered, under-ice-capable units. Hanwha is vying for a contract to build the submersibles.

As part of the Algoma agreement, it is offering to invest US$200 million in the cost of the mill and would promise to buy US$50 million worth of Algoma steel for the sub — and others. Hanwha said the beam mill provides Algoma with new business opportunity beyond submarines, supplying steel for infrastructure, housing and road projects, and opening up new opportunities for Canadian workers in a market that has historically been dominated by imports.

Algoma Steel chief executive officer Rajat Marwah said the arrangement is a step forward in the company's diversification strategy.

"It reinforces our focus on becoming Canada's leading sustainable steelmaker, aligned with the country's nation-building priorities in defense and infrastructure," he said.

ARCELORMITTAL

ArcelorMittal's Calvert, Ala., sheet mill is ramping up its new meltshop after the facility cast its first slabs in June 2025, enabling U.S. domestically melted and poured production.

The meltshop will be capable of producing 1.5 million metric tons annually, powered by a 280-metric-ton DC furnace and a single-strand caster that can produce slabs in thicknesses of 235 to 255 mm and in widths from 950 to 2,050 mm. The facility also includes a 180-metric-ton twin-ladle furnace, a material handling plant, an offgas treatment system and a 180-metric-ton twin RH degasser. The meltshop also enables ArcelorMittal to offer on-demand casting, faster lead times and an expanded mix of higher-value automotive

Meltshop at ArcelorMittal Calvert.

grades. The company has said that it is hoping the new meltshop will be up and running at capacity toward the end of the second half of this year.

As the ramp-up continues, ArcelorMittal has stated that it is evaluating and developing plans for a second, 1.5-million-metric-ton EAF at Calvert. The project has yet to be greenlighted but, according to statements made during the company's fourth-quarter 2025 earnings call, a final decision is expected to come sooner rather than later.

On another front, ArcelorMittal is progressing on construction of a US$1.2 billion electrical steel line located near the Calvert mill. Construction is currently underway, and the company has stated that production is anticipated to commence in 2027.

The line, which will be capable of producing 150,000 tons of nongrain-oriented electrical steels annually, includes an annealing and pickling line, reversing cold mill, and annealing and varnishing line. The line is expected to enhance ArcelorMittal's electrical steels offerings for the U.S. market and help to create a resilient, sustainable domestic supply chain for this critical material, adding thin gauge capability down to 0.2 mm.

Both projects are intended to provide the company with leading, automotive-focused capabilities. The company has stated that it is building electrical steel capacities to support electrification and mobility, and expanding its EAF footprint where the economics make sense.

The potential EAF and the electrical steel line aren't the only improvements on tap for the Calvert facility.

ArcelorMittal is upgrading the hot strip mill with an inductive heating system and integrating other advanced rolling technologies. According to the equipment supplier on the project, the heating system will be installed upstream of the finishing mill entry section and includes an entry-side wiper roll unit, two entry roller tables with sideguides, exit-side roller table with sideguide, and exit-side wiper roll unit. The project contractor is also upgrading the hot strip mill's level 1 automation hardware. Hot commissioning is set to start in November 2026, according to the contractor.

Elsewhere, work is underway on an expansion of ArcelorMittal's Las Truchas iron ore mine in Mexico. The company is looking to boost pellet feed capacity from 1.3 million metric tons annually to 2.3 million metric tons. In Canada, ArcelorMittal Tailored Blanks is building a 154,000-square-foot blanking plant in Ingersoll, Ont. Equipment installation and commissioning are expected to continue through mid-2026, with a soft opening tentatively set for the fall of 2026.

ATI

The specialty metals producer is investing in its nickel melt system, adding a new primary vacuum induction melting furnace and remelt equipment.

"We are modernizing and upgrading our melting systems, expanding capability, improving quality and delivering operating efficiencies for our differentiated engine alloys our customers rely on," Kimberly A. Fields, ATI's president and chief executive officer, told investors during the company's recent fourth-quarter earnings call.

"Our targeted phased investment strategy is focused on differentiated nickel capability, not broad capacity expansion. These commitments reflect strong demand for ATI's proprietary hot section alloys and customers' willingness to partner with us to secure essential supply," Fields said. The new capacity is to come on-line in 2027.

CARPENTER TECHNOLOGY CORP.

Work on the company's nickel-focused expansion project is gaining momentum, with equipment delivery and installation set to take place in the coming months.

Through a US$400 million investment, the company will install a new vacuum induction melt furnace at its Athens, Ala., facility, which will also be equipped with additional remelt capacity.

In addition, the company will add downstream finishing assets primarily at its Reading, Pa., plant.

All told, the project is expected to lift its nickel-based alloys capacity by approximately 9,000 tons annually, with the additional output geared to the aerospace, defense and medical sectors. The work is to be completed by fiscal 2028.

As of January, the project was on budget and on schedule, company executives said.

CLEVELAND-CLIFFS INC.

In July 2025, Cleveland-Cliffs celebrated the start a state-of-the-art, vertical bright anneal line for stainless steel at its Coshocton, Ohio, facility.

A US$150 million investment, the line processes premium stainless steel for high-end automotive and critical appliance applications. The line uses a 100% hydrogen atmosphere, replacing conventional acid-based processing, and includes a hydrogen recovery unit to recycle hydrogen and use a 50-50 mix of new and used hydrogen in the process, the company said.

CMC Steel West Virginia construction.

"Since acquiring AK Steel in 2020, our stainless steel business has been the most consistent profit generating unit for Cleveland-Cliffs. This new line at Coshocton only enhances that, with an expected quick payback on this major investment," said Cleveland-Cliffs chief executive officer Lourenco Goncalves.

"By using hydrogen and advanced automation, we're dramatically improving the quality and productivity of this critical product that our customers rely upon Cleveland-Cliffs for. As we embrace the new competitive landscape in the domestic steel industry, our profitability prospects are only getting stronger."

Looking ahead, Cleveland-Cliffs is preparing to reline the C blast furnace at its Burns Harbor plant in Indiana. The furnace is one of two at Burns Harbor and was commissioned in 1972.

The project is scheduled for 2027.

CMC

The long products maker is nearing completion of its West Virginia micromill and expects to begin hot commissioning of the facility in June. In fact, some of the cold commissioning work was underway as of January, company executives recently said.

An investment of more than US$600 million, the facility will produce 500,000 tons of straight-length and spooled rebar. It is meant to serve metropolitan markets in the Mid-Atlantic and Northeast.

The plant will consist of a Danieli Digimelter furnace supported by a continuous scrap charging system, a single-strand caster, and a rolling mill utilizing cantilever and housingless stands. A spooling line will incorporate a four-pass finishing block that can produce spools of up to 5 tons.

CMC has said the West Virginia mill will round out its investments in new steelmaking capacity.

"With West Virginia in our footprint, CMC will operate a highly flexible manufacturing network featuring excellent geographical and product coverage and have no need of additional production capabilities for the foreseeable future. This best-in-class network is highly cash generative and allows us to invest for growth in other attractive areas of the business," said CMC chairman and chief executive officer Peter Matt.

ELECTRA

Electrolytic ironmaking startup Electra raised an additional US$186 million through its Series B funding round last year and is preparing to open a demonstration-scale plant in the year ahead.

The 130,000-square-foot facility, which is being built in Jefferson County, Colo., will produce 500 tons annually. The output will be used for partner testing and

Electric arc furnace at Hybar LLC.

qualification as well as to lay the foundation for its commercial plant, which is to be constructed by the end of the decade.

Electra's investors include BHP, Rio Tinto, Roy Hill, Yamato Kogyo Co. Ltd. and Nucor. Nucor also has signed for output from the demonstration plant.

"The advanced purchase commitments with Electra are a clear demonstration of Nucor's belief in their clean iron technology and our dedication to accelerating the adoption of sustainable steelmaking," said Al Behr, Nucor's executive vice president of raw materials. "We're excited to see Electra's demonstration facility become a reality, marking an important milestone in our partnership and in the journey to decarbonize the steel supply chain."

GERDAU

Gerdau expects to complete upgrades to its Midlothian, Texas, bar mill, its largest U.S. facility, no later than the end of June. A US$226 million investment, the project is adding 150,000 metric tons of meltshop capacity. Gerdau has said the work is designed to cut internal billet transfers, lift productivity, broaden product mix and lower unit costs.

Adjacent investments include a 90,000-metric-ton downstream solar pile facility — hot commissioning occurred in the third quarter of 2025, with full ramp-up expected by the end of 2026 — and a new heat treatment facility for wind products.

HYBAR LLC

In November, rebar startup Hybar cut the ribbon on its inaugural mill, formally marking the company's entrance into the construction steel market.

Hybar's greenfield facility is producing Nos. 3 to 18 rebar in straight lengths and Nos. 3 to 8 in spools of up to 8 tons. It is capable of producing 700,000 tons annually, and output can be shipped via barge on the Mississippi, Tennessee, Ohio and Arkansas rivers; via rail; and via truck on east-west and north-south corridors.

Led by steel financier David Stickler, Hybar was formed in 2023, and by June 2025, had rolled its first

lengths of rebar using third-party billets. Its 105-ton DC furnace produced its first heat in September 2025.

The facility is located in Osceola, Ark., and features what's said to be the largest behind-the-meter solar and battery electrical energy facility in the U.S. According to Hybar, it is the only steel producer in North America to use 100% renewable energy — when the sun is shining. To supplement its energy generation, Hybar executed a special-rate electrical power contract with Entergy Arkansas.

"Our plan was to build the world's most technically advanced environmentally sustainable rebar steel mini-mill, along with our own Mississippi River port, and the largest behind-the-meter solar and battery storage facility in the United States," said Dave Stickler, who also serves as chief executive officer of Hybar. "I am extremely proud to say, 'mission accomplished!'"

HYUNDAI STEEL

Hyundai Steel expects to start construction of its US$5.8 billion Louisiana sheet mill later this year.

The EAF-based facility, its first in the U.S., is intended to supply Hyundai and Kia's U.S. auto plants with 2.7 million metric tons of steel annually and will create more than 1,300 permanent jobs. It's one of the largest industrial investments in Louisiana history and is a major step toward a fully U.S.-based automotive supply chain.

Hyundai has said the mill will give its U.S. vehicle plants a secure a stable, domestic supply of high-quality automotive steel, supports expansion of U.S. vehicle production by 1.2 million units per year by 2028, and reduces reduce supply chain emissions by producing steel closer to final assembly.

The mill is part of a broader, three-year, US$26 billion U.S. investment that includes modernization of auto assembly plants in Alabama and Georgia; expansion of electric vehicle charging infrastructure; partnerships in battery technology, hydrogen, and advanced mobility; and a state-of-the-art robotics facility with an annual capacity of 30,000 units, serving as a U.S. hub for design, manufacturing, testing and deployment.

The mill is to be built on approximately 1,700 acres in Donaldsonville, La., anchoring the RiverPlex MegaPark on the West Bank of the Mississippi River in Ascension Parish. At approximately 17,000 acres, RiverPlex is the largest undeveloped tract along the deepwater Mississippi River.

Hyundai is not going it alone on the mill, however. South Korea's largest steelmaker, POSCO, is taking a 20% ownership stake in the facility.

JSW STEEL USA

JSW Steel USA will commission key upgrades to its Mingo Junction, Ohio, and Baytown, Texas, mills this year.

At Mingo Junction, the upgrades include installation of a 230-metric-ton vacuum tank degasser (VTD), the largest in North America, and the addition of dynamic soft reduction (DSR) on one of its caster strands.

According to JSW USA, the upgrades will allow the facility to produce both 9- and 12-inch slabs, equipping it to better compete in the hot-rolled coil (HRC), API pipe and tube markets. Also, by producing slabs that are fully melted and poured in the U.S., the company will benefit from greater supply chain independence, it said.

"It strengthens JSW's competitive position by enhancing reliability, supporting Buy American initiatives and reinforcing its commitment to the U.S. steel market," the company said.

Mingo Junction slabs will support JSW USA's Baytown plate and pipe mill, which itself is undergoing a range of improvements. The upgrades are on schedule, the company said, and will expand its ability to sell into high-growth markets, including offshore wind and energy infrastructure.

"With the ability to roll 6-inch plate up to 156 inches wide, Baytown will offer one of the broadest heavy-plate plate ranges available from a U.S. producer," the company said.

MESABI METALLICS

The Essar Group company is preparing to start operations at what will be the first new iron ore operation in Minnesota in more than 50 years.

An investment of more than US$1.8 billion, the project includes a taconite mine and direct reduction–grade pellet plant. Ground was broken for the facility, then called Essar Steel Minnesota, in 2008, but the project has faced many challenges since, including bankruptcies, legal disputes with competitors, changes in ownership and the loss of state mineral leases.

However, under new leadership and a restructured Essar Group, the project is again moving forward. In February, it announced that it had placed an order for fully electric drill rigs to work the mine. The first rig is to be delivered this summer, with additional deliveries planned for the first quarter of 2027. The order follows a July 2025 announcement that Mesabi had ordered a US$110 million mining equipment fleet from Komatsu. The fleet includes 400-ton autonomous haul trucks.

"We're not building Mesabi for yesterday's mining industry — we're building it to lead the future. That

requires investing in cutting-edge technology, partnering with industry leaders and utilizing world-class equipment, and these new Epiroc drills are a clear example of that commitment," said Joe Broking, Mesabi Metallics president and chief executive officer.

METALLUS

Metallus is nearing completion of a USD$120 million upgrade that will boost its capacity and help meet the increased demand for artillery shells. Supported by funding from a U.S. Army initiative to develop a reliable and resilient industrial supply chain, the projects in Canton, Ohio, include a new bloom reheat furnace at the company's Faircrest facility, a new thermal treatment roller furnace at its Gambrinus facility, and two new saw lines at the company's Harrison facility. The new bloom furnace will allow for the reheating of blooms from the company's jumbo bloom vertical caster prior to rolling. The roller heat treat furnace will double Metallus' heat-treating capacity for specialty grades primarily used in defense-related products. Metallus has begun commissioning the bloom furnace and work on the roller furnace is nearing completion.

"We expect to light the bloom reheat furnace toward the end of the first quarter or early second quarter," Metallus chief executive officer Mike Williams told investors during the company's most recent earnings call. "These state-of-the-art assets will strengthen our ability to serve all our customers with high-quality specialty metals, enhanced production capability, and improved quality," Williams said.

Additionally, the company announced it has completed the production ramp-up of a new automated grinding line at its Harrison small bar plant in Ohio, which demonstrates the company's focus on continuous asset enhancements. "Utilizing robotic technology, this new asset supports growing demand from our customers for high-quality special bar quality products," Williams said.

NEMO INDUSTRIES

The startup announced in October 2025 a plan to invest US$3 billion in a Gulf Coast granulated pig iron plant.

The plant would pair direct reduction with electric smelting technology to produce 2.3 million metric tons of granulated pig iron to domestic and global customers. The plant would be built along the Mississippi River in Ascension Parish, La. The company said it plans to make a final investment decision in 2027, contingent upon several factors, including the completion of required commercial agreements, receipt of necessary permits and securing project financing.

The company said it is partners so far include Cargill, Lowercarbon Capital, BoxGroup, 776 and cofounding investor Vivek Ramaswamy.

"As European markets accelerate their decarbonization commitments, reliable, sustainable iron production from the U.S. will be essential to meeting demand with maximum carbon efficiency. Cargill is proud to support NEMO Industries' new project in Louisiana, which will play a pivotal role in catalyzing more efficient steelmaking. This project is exactly the kind of forward-looking investment our industry needs," said Lee Kirk, Cargill Metals managing director.

NORTH STAR BLUESCOPE STEEL

Following the US$735 million expansion of its meltshop, North Star BlueScope Steel has embarked upon an effort to debottleneck the hot strip mill's production flow.

Under the project, North Star Blue Scope is modernizing the plant's original runout table laminar cooling system and adding a third downcoiler downstream of the plant's original two units. The upgrades are expected to lift plant capacity to 3.3 million metric tons annually.

The project contractor has said the cooling system installation will be carried out in two phases, while the downcoiler installation will be executed mostly during the course of routine plant operations. These projects are expected to be complete by the end of first quarter 2027, utilizing three scheduled outages.

The project represents a US$130 million investment.

NUCOR

Construction of the company's US$4 billion West Virginia sheet mill remains on pace for an end-of-year start-up.

"West Virginia will be done at the end of this year, and that team is doing a fantastic job moving that project forward," Nucor president and chief financial officer Steven Laxton said recently.

The mill is Nucor's single largest investment in its history, and, when completed, will produce 3 million tons for the automotive, industrial, appliance and construction markets. It will be capable of producing sheet in widths up to 84 inches. It also will be equipped with a 76-inch tandem cold mill and galvanizing lines.

The mill is intended to meet demand in the automotive, construction and industrial sectors. About 1 million tons

of annual output will be directed to the automotive market, with some of that intended for exposed applications.

"We've recently gotten qualified on exposed automotive through another route to our mills, and that will really open the door for us to expand our business into the highest-quality automotive production," said Nucor executive vice president Noah Hanners.

Elsewhere, Nucor's new galvanizing line at its Berkeley facility in South Carolina is set for commissioning by mid-year. The line is capable of processing approximately 500,000 tons annually and will be able to produce galvanized steel up to 72 inches wide.

In 2025, Nucor started its new rebar micro-mill in Lexington, N.C. The mill is currently in the production ramp-up phase, with initial melt-cast-roll operations having started in July. An investment of US$350 million, the facility is designed to annually produce 430,000 tons of steel bar and rebar.

A separate US$20 million rebar fabrication facility is being built adjacent to the mill.

Additionally, Nucor in October celebrated the start of a US$100 million meltshop serving its Kingman, Ariz., bar mill. The facility adds 600,000 tons of annual melt capacity. The meltshop is supported by a separate 50 MW battery energy storage system, said to be the largest behind-the-meter storage system in Arizona and among the five largest in the United States.

The storage system is meant to help stabilize the electric load from the new furnace and reduce strain on the local grid. The system was activated in October, and it is to be paired with a 25 MW solar farm that is scheduled to enter service this year.

Also, Nucor brought its new galvanizing line and coating complex on-line at its sheet mill in Crawfordsville, Ind. The expansion added 300,000 tons of construction-grade galvanizing capacity and 250,000 tons of prepaint capabilities.

"Since 2020, we have invested approximately US$20 billion (in capital projects and acquisitions) to grow our core steelmaking capabilities and expand into downstream businesses while returning nearly US$14 billion of capital to shareholders and improving our credit profile," Nucor chair and chief executive officer Leon Topalian said.

"With the majority of our recent investments largely complete, I'm confident it sets up Nucor to enter its next phase of growth from a position of strength, focused on disciplined capital allocation while driving long-term value for our shareholders."

ORION STEEL

The company's Rocky Mountain plant in Colorado last year began hot commissioning of its universal long-length rail mill.

Nucor Steel West Virginia construction.

Orion Steel's Rocky Mountain Steel rail mill.

The new mill is designed to annually produce 650,000 tons of flat-bottom and thick-web rails, up to 88 kg/m, in lengths of up to 100 m. The rails produced meet American Railway Engineering and Maintenance-of-Way Association specifications and are suitable for heavy-haul and high-speed rail applications.

OUTOKUMPU

The Finnish specialty metals producer is investing US$45 million in a pilot-scale ferrochrome plant aimed at advancing what it describes as a breakthrough, coke-free reduction process.

Announcing the project in October 2025, Outokumpu said the plant is intended to demonstrate the scalability and industrial feasibility of the proprietary technology unveiled last year. The process eliminates the need for coke and decouples ore quality from final product quality, enabling the production of chrome metal from lower-grade ore.

Outokumpu executives said the technology could also be applied to other metals.

"With this technology, enriched ferrochrome is produced with a lower carbon footprint and can be used in meltshops or sold externally at higher prices compared to current offerings," the company said. "The process also enables new production pathways for high-purity metals, such as chromium metal, which is applicable to high-value markets including aerospace, defense and energy sectors. Chromium metal is extremely hard and highly heat-resistant, making it suitable for demanding applications such as fighter jet engines."

The pilot plant is being built in New Hampshire and is scheduled for completion in the first half of 2027. It will produce both 65% enriched ferrochrome and chromium metal. Outokumpu aims to scale production from 1 kg/day to 1 ton/day at the facility.

If the pilot phase proves successful, the company plans to build an industrial-scale plant with an annual production capacity of approximately 10,000 tons. Outokumpu expects the industrial facility to be operational in 2029 or 2030, with full commercial potential of the proprietary technology realized from 2030 onward.

PACIFIC STEEL GROUP

The rebar fabricator last year formally broke ground on its California micro-mill, the first steel mill to be built in the state in more than 50 years.

Groundbreaking at Pacific Steel Group.

"(The groundbreaking) represents a culmination of nearly five years of work and is the first tangible step toward full vertical integration of our reinforcing steel operations. I could not be more proud of the team that we have assembled. Their collective efforts in achieving this milestone is truly an extraordinary accomplishment," Pacific Steel chief executive officer Eric Benson said at the time.

"As we move forward with this exciting project, I am confident it will further strengthen our position as the market leader and ensure our competitiveness for many years to come."

A net investment of US$630 million, the mill is designed to annually produce 380,000 tons of rebar in both straight lengths and spools. It will feature a continuous scrap charging system, automated overhead cranes, melting platform robotics and a single-strand caster.

The mill will be capable of converting liquid steel to finished products in 10 minutes. It also is being designed to allow for a direct connect to renewable energy sources, leveraging California's abundance of renewable energy.

The mill is to enter service in the second quarter of 2027.

SSAB

The Swedish steelmaker last spring announced a US$74 million investment in its Mobile, Ala., plant, a project that will expand its heat-treating capabilities.

The project entails installation of a new tempering furnace along with infrastructure improvements.

"This expansion will bolster our capacity to produce high-strength steel brands such as Hardox and Strenx and will also increase SSAB Alabama's truck shipping capacity," said SSAB Alabama general manager Andy Bramstedt. "This investment underscores our dedication to our customers and the industry, and we are excited about the opportunities it will bring to our facility and the community."

Construction is underway, and the project is scheduled for completion in 2027.

"We have been working on this investment for a long time, and it is very gratifying to see it come to fruition. This investment will not only expand our capacity for niche products, which are in high demand, but also enable us to offer a broader product range from our Alabama facility. This will enhance our offerings to customers primarily in North and South America," said Kjell Baeckman, SSAB's head of sales for special steels.

Also in 2025, SSAB invested US$10 million in its Houston Value+ facility to boost performance and reliability with key equipment on the temper-level line.

The centerpiece of the project was the installation of a new rotary shear system, replacing an aging shear and stacker commissioned in 1999. The upgrade provides critical improvements as the facility continues to process high-strength steels and premium products like Grade 65, 100XF and Green Plate.

STEEL DYNAMICS INC.

Steel Dynamics Inc. (SDI) continued to spin up its new aluminum sheet operations in 2025 and began producing biocarbon at its newly constructed facility in Columbus, Miss.

A US$2.7 billion investment, Aluminum Dynamics aims to annually produce 650,000 metric tons of aluminum sheet for the beverage can, automotive, construction and industrial markets.

The operation consists of a rolling mill in Columbus, Miss., and two 150,000-metric-ton satellite slab-casting facilities in Mexico and Arizona.

According to SDI, the Columbus hot mill produced its first coils in June 2025. It has since been fully commissioned. The facility's cold reversing mill is also producing material and the first of two tandem cold mills is being commissioned. The second tandem cold mill and the first of two continuous annealing and solutions heat treating lines were to have come on-line by the end of March 2026.

In addition, three of the four melt-cast houses have been fully commissioned and are producing 3,000-,

First coil at Aluminum Dynamics.

Steel Dynamics Inc.'s biocarbon plant.

5,000-, and 6,000-series ingots. SDI said it is receiving customer certifications faster than anticipated, which will allow it to shift its output focus on a higher-margin mix of materials this year.

"As the industry already knows, the 650,000-metric-ton project is no longer a vision. It's clearly here and clearly having a positive impact in the industry," said SDI chairman and chief executive officer Mark Millett.

"The customer base is excited to have a new market entrant that is known to be innovative, customer-focused and responsive to their needs. For us, business relationships are long term, founded on trust with a continuous goal of creating mutual value. And that's not just simply financial value, but new supply chain solutions, new products, better quality and better service. And we are seeing (customers) react with surprising speed."

Elsewhere in Columbus, SDI in September 2025 shipped the first batches of biocarbon produced at its joint-venture facility. A US$300 million investment, the facility will produce 228,000 metric tons for internal use.

SDI estimates the use of biocarbon has the potential to reduce Scope I emissions from its steel mills by as much as 35%.

STERLING STEEL

Leggett & Platt

The Illinois-based wire rod maker last year issued the final acceptance certificate on a modernization of its rolling mill.

Through the project, 16 DC mill stand drives were upgraded and two more were added to support a future coil-size expansion and ensure access to spare parts. The new drives were integrated with Siemens PCS7 automation, improving system support and long-term maintainability, according to the project contractor.

The upgrade was prompted by the obsolescence of Sterling Steel's previous DC drives platform, which had become a risk factor due to the lack of spare parts and diminishing technical support, the contractor said.

TERNIUM

Ternium

The company is barreling toward a late-year start of a 2.1-million-ton direct reduction furnace and 2.6-million-ton electric arc furnace meltshop at its Pesquería, N.L., Mexico, facility.

A US$2.7 billion investment, the meltshop is intended to capture increasing North American demand for steel that is made in USMCA member countries.

The mill will include a 300-ton Tenova Consteel EAF, two secondary metallurgy furnaces with a capacity of 300 tons of liquid steel, one RH vacuum degasser system, and one continuous casting machine with two lines.

It will be highly automated and allow operators to work fully remotely. With respect to sustainability, the facility incorporates carbon capture technology developed by Tenova and will be the fourth module in Ternium's entire operation to be so equipped. The mill will also be ready to run off green hydrogen.

"This new plant will allow us to produce high-quality automotive steel with the lowest CO_2 emissions per ton in the industry," Ternium chief executive officer Máximo Vedoya told investors during the company's fourth-quarter earnings call.

Meanwhile, Ternium is ramping up components of a US$1 billion, downstream investment package at Pesquería. The package includes a 1.6-million-metric-ton cold rolling mill, a 600,000-metric-ton hot-dip galvanizing line, a 550,000-metric-ton push-pull pickling line and other new finishing lines.

The push-pull pickling line and finishing lines are all operational. The galvanizing line was started in December 2025, and the pickling line tandem cold mill ran its first coils in January. Both are now ramping up.

"This achievement completes our downstream expansion at the site made possible by outstanding teamwork," Vedoya said.

UNITED STATES STEEL CORPORATION

U. S. Steel

After being acquired by Japan's Nippon Steel Corp. in 2025, U. S. Steel is preparing for an extensive modernization of its fleet, an overhaul being made possible by Nippon's promised investment of more than US$11 billion into the steelmaker.

Among the projects announced so far are a US$350 million reline of the No. 14 blast furnace at the Gary Works in Indiana. The furnace is the largest of the four at Gary Works, and U. S. Steel has said the project is considered critical maintenance that will allow the mill to continue to meet customer commitments.

According to Nippon Steel, the reline is scheduled to take place during a 100-day period between May and August of this year.

Also, approximately US$200 million is being allocated for upgrades to the hot strip mill. The company said the project will optimize production costs and expand premium product offerings, including heavy-gauge line pipe and automotive steel.

U. S. Steel submitted air permit and stormwater construction plans in December. The work is scheduled to take place during the third quarter of this year. In the meantime, U. S. Steel is advancing plans to upgrade the steel shop, an effort that would improve productivity and enhance product flexibility.

In Pennsylvania, U. S. Steel is planning to install a new hot strip mill at its Edgar Thomson plant, enabling production of higher-quality coils and improving downstream efficiency. Also on tap for the mill is a US$100 million slag recycler.

"This is an opportunity to reduce air emissions and waste that would have otherwise gone to a landfill, while also generating additional revenue through the sale of byproducts," U. S. Steel has said.

Construction is scheduled to wrap in early 2028.

In Arkansas, U. S. Steel is looking at building a direct reduction plant to supply its mini-mill operations there. As U. S. Steel has said, a DRI plant would "enhance raw material flexibility, reduce carbon intensity and support long-term strategic growth."

Additionally, U. S. Steel has said it will look to advance capabilities in electrical steel facilities, enabling production of high-performance materials for energy-efficient transformers and electrification applications.

In Alabama, U. S. Steel is investing US$75 million in a premium oil country tubular goods threading line at its Fairfield plant. The line would expand U. S. Steel's threading capabilities and capacity and improve production efficiency through advanced automation and process upgrades.

"We have a robust pipeline of growth projects, ranging from the modernization of our Gary Works hot strip mill to the new slag recycler at Mon Valley Works and the development of new product capabilities. These initiatives are already delivering real results," said U. S. Steel chairman and chief executive officer David Burritt.

"With world-class technology, extraordinary engineering capabilities, and the best steel industry employees in the world, we are on a great path to forging the future of steelmaking in America. I'm confident that our employees' grit, dedication and commitment, coupled with Nippon Steel's investments in our business, will position U. S. Steel for greatness," he said.

VINTON STEEL

KYOEI STEEL GROUP VINTON STEEL Spirit of Challenge

The Texas rebar manufacturer is to begin major construction on a US$327 million mill modernization project this month.

First announced in 2024, the project entails replacement of the mill's meltshop and significant enhancements to its rolling mill. The work is to add 360,000 tons each of rolling and melting capacity.

The project scope includes an electric arc furnace equipped with continuous scrap preheating, an in-line ladle metallurgy furnace, a multistrand continuous casting machine, walking hearth reheat furnace and a fully automated material handling system.

The project also will include an advanced fume treatment plant with a quenching tower and pulse-jet baghouse, a zero-water-consumption water treatment plant, and a new electrical distribution system, all designed to maximize efficiency and sustainability.

The new meltshop is to enter service in March 2027, and work on the rolling mill is set for completion in October 2027. ✦