Take a walk through a North American steel mill, and these days, there’s one thing you’re likely to notice: construction cranes. In 2019, few were the mills that didn’t have at least one parked somewhere on-site. But it’s not terribly surprising, given the plethora of investment announcements that came in 2017 and 2018. In 2019, many of those projects moved from the boardroom to the drawing board and finally to construction. Some of those projects have already been put into service and are ramping up. Others are set for completion this year. And still others will be brought up next year. Here’s a look at some of the projects that will help define a new generation of steelmaking.

**ALTOS HORNOS DE MEXICO (AHMSA)**

Mexico’s largest integrated producer last year put a new RH vacuum degasser into service at its Monclova, Coah., works.

The 150-ton twin unit (pictured above) is allowing AHMSA to produce steels with very low hydrogen content, necessary for high-strength steels as well as steels used in the oil and gas industry. The degasser, which utilizes a dry mechanical pump, has the capacity to process 50 heats per day, or about 2 million metric tons annually.

Primestals Technologies supplied the degasser, which was installed at the Monclova facility’s No. 2 steel shop.

**ALGOMA STEEL INC.**

The Canadian flat-rolled producer in October 2019 began overhauling the 166-inch plate mill at its Sault Ste. Marie, Ont., facility.

Through the project, Algoma is installing new process equipment, a new automation system and digital drives, allowing it to roll thermal-mechanically control-rolled plate for the shipbuilding, energy and bridge building sectors. New equipment features a primary descaler, hot leveler, divide shear, piler, cooling bed and an automated, top-and-bottom inspection system.

The overhaul, scheduled for completion in the summer of 2021, is part of a broader CA$300 million investment Algoma is making in its facility.
The investment entails improvements to its Direct Strip Production Complex and installation of a second ladle metallurgy furnace, in addition to the plate mill overhaul.

Primary improvements to the Direct Strip Production Complex include a segment upgrade with additional water-cooling capabilities which were completed last spring. The project adds about 300,000 metric tons of capacity to the line, taking it to about 2.4 million tons annually once the second ladle furnace comes on-line.

The second ladle furnace is expected to add 100,000 metric tons of refining capacity. The furnace is on track to enter service in the summer of 2020.

AK STEEL CORP.

AK Steel completed a substantial maintenance project at its Dearborn Works in Michigan last fall. The work included shotcrete to the blast furnace interior as well as replacement of or upgrades to the gearbox, downcomer, gas bleeder stack, vessel hoods and runways. Environmental compliance equipment was also upgraded. AK Steel estimates that the project will reduce the facility's steelmaking costs by US$10/ton.

ALLEGHENY TECHNOLOGIES INC.

The stainless steel manufacturer announced last June that its Shanghai STAL Precision Stainless Steel joint venture in China commissioned a new precision stainless strip line, the facility’s third such line.

ATI said the new line includes a 48-inch-wide cold rolling mill, a bright anneal line and associated auxiliary finishing equipment. The line increases the joint venture’s capacity by approximately 65%, ATI said, and allows it to make ultrathin, ultraflat and ultra-hard stainless strip.

Located in Shanghai, STAL produces precision stainless strip products mainly for the Asian electronics, communication equipment, computer and automotive sectors. ATI owns a 60% stake in the business.

ARCELORMITTAL

ArcelorMittal Mexico continued to progress on its new 2.5-million-metric-ton hot strip mill at its Lázaro Cárdenas facility along the Mexican Pacific coast. Crews completed the deep foundations last year, and equipment is being installed.

The project, which includes a 650,000-ton skinpass mill, will allow the plant to roll slabs on-site and take advantage of an anticipated increase in demand from domestic sheet users. It also will allow the company to incorporate more value-added products to its line-up and to realize the full production potential of its Mexican facilities.

The project is set for completion later this year.

In Canada, ArcelorMittal Dofasco awarded a contract to SMS group to replace the facility’s 320-ton KOBM converter, the largest converter in North America. The unit is reaching the end of its service life, and the project aims to replace the converter vessel, trunnion ring, the vessel suspension system. New trunnion bearings, gear reducer, hydraulic torque compensator system are also to be installed.

In addition, ArcelorMittal Dofasco is moving toward completion of its hot strip mill modernization project. Through the project, the company is replacing three end-of-life downcoilers with two new state-of-the-art units, a new inspection and sampling line to reduce manual interactions and save yield, and laminar cooling sprays.

The project is intended to improve coil quality for customers, increase the reliability of the coiler area and reduce conversion costs.

In Quebec, ArcelorMittal commissioned new walking beam reheat furnaces at its Contrecoeur-East and the Contrecoeur-West bar mills. The walking beam furnaces have capacities of 130 metric tons per hour and were fired up in July and December 2019.

Together, the furnaces represent an investment of CA$63 million, part of a broader CA$160 million investment at the long products mills.

In the U.S., the company’s Burns Harbor plant facility in Indiana continued to progress installation of two new walking beam furnaces at its 80-inch hot strip mill. The ANDRITZ-supplied furnaces are replacing pusher-style furnaces and have a design capacity of 500 tons per hour. Foundation work was completed last spring, and equipment installation began not long after.

Start-up is expected to occur in the fourth quarter of this year, and the furnaces should be at full production by the first quarter of 2021, the company said.

BIG RIVER STEEL

The Phase II expansion of Big River’s Osceola, Ark., USA, flat-rolled mill is on budget and ahead of schedule, the company has said. According to a spokeswoman, foundation work is substantially complete, and equipment installation is well underway. All nine of the Phase II cranes have all been installed and tested, and are either being used to enhance the mill’s operational efficiency or expedite equipment installation work, Big River said.

Big River is doubling down on the mill’s initial capabilities, adding a second EAF, twin-ladle metallurgy furnace, caster strand and tunnel furnace, as well as
another downcoiler. SMS group is the primary technology supplier to the project.

As it is, Big River can produce approximately 1.65 million tons annually; the expansion would lift that capacity to around 3.3 million tons.

In addition to increasing hot-rolled capacity, the expansion might allow Big River to add to its electrical steel offerings. It can make motor laminations now, but is looking to produce oriented and non-oriented electrical steels, which it may do either through the expansion or another project.

Meanwhile, company executives are continuing to explore the feasibility of building a second flat-roll facility at the Port of Brownsville in Texas, where it has an option on 800 acres. That facility, if built, would represent an estimated investment of US$1.6 billion.

CARPENTER TECHNOLOGY CORP.

The specialty alloys manufacturer expects to commission a specialized, US$100 million hot strip mill at its Reading, Pa., USA, plant this summer.

The Primetals Technologies mill is designed to produce soft magnetics, materials that can be easily magnetized and demagnetized and are used in modern electrical engineering and electronics. Making these grades requires sophisticated equipment, special processes and highly controlled atmospheric conditions.

The company said work is on schedule, and key process equipment and large components have been delivered. Installation began in January.

Systems review and development also has been completed, and training for employees is ongoing.

CLEVELAND-CLIFFS INC.

The iron ore miner and steelmaker is nearing completion of its hot briquetted iron (HBI) plant in Toledo, Ohio, USA, and expects to be producing commercial-grade product by the end of June.

Cliffs is building the US$940 million plant to displace imported pig iron and supply Great Lakes electric arc furnaces looking to move up the value chain with a domestic, high-grade metallic input.
The project has proceeded largely ahead of schedule, and in September construction crews topped out the plant’s 457-foot reactor tower.

Cliffs is already supplying the plant with low-silica iron ore pellets from its Northshore mining operation in Minnesota, where it has installed equipment to support a large-scale commercial upgrade to capacity. Cliffs plans to produce 3.5 million tons of direct-reduction-grade pellets annually, and began building stocks at the HBI plant last year.

EVRAZ NORTH AMERICA

The Russian steelmaker’s North American subsidiary is in the pre-construction stages of its proposed US$512 million Colorado rail facility.

The mill, to be built at EVRAZ North America’s Rocky Mountain Steel plant, is intended to maintain the company’s technical leadership in rail — it’s one of only three suppliers in the U.S. — and move up the value chain by allowing it to produce 100-m lengths.

The project took a big step forward last September, when EVRAZ secured a long-term power supply agreement with electricity utility Xcel Energy and solar developer Lightsource BP. Under the agreement, Lightsource will build and operate a US$250 million solar farm at Rocky Mountain Steel and will then sell the electricity it generates to the utility.

The 20-year agreement offers EVRAZ a long-term fixed rate, and with it, predictable electricity prices. But it also gives the mill a source of renewable electricity. According to the company, the solar farm will be the largest on-site solar facility dedicated to a single customer in the country. The farm is to be completed by the end of next year.

EVRAZ also has chosen Danieli as the technology supplier for the rail mill, which will be able to make flat-bottom rails and thick-web rails in densities up to 88 kg/m for heavy-haul and high-speed railways and for other applications.

The mill will feature flexible rolling processes both in the breakdown and reversing mills, achieving very low roll consumption and precise geometrical tolerances, the technology supplier said. The mill is being designed with a capacity of 670,000 short tons annually.
GERDAU

The steelmaker will complete its US$70.3 million meltshop project at its Monroe, Mich., USA, special steel plant in the fourth quarter of this year, rounding out a complete overhaul of the facility.

Through this last round of work, Gerdau is installing a new twin-ladle metallurgy furnace, material handling system, a new EAF transformer and furnace controls. The upgrades will improve the plant’s hot metal capacity, allowing it to fully capitalize on previous investments.

These investments were made to better support the automotive industry’s demand for lightweight steel parts with longer fatigue life, in turn necessitating production of cleaner steels. Altogether, the improvements will increase the plant’s shipping capacity to 725,000 tons.

Elsewhere, Gerdau is upgrading the rolling equipment at its heavy sections mill in Petersburg, Va., USA, and its medium sections mill in Cartersville, Ga., USA, installing five new rolling stands.

Two of those stands are being installed at the Petersburg mill, which is looking to boost productivity and improve performance and section control. The Compact Cartridge Stands, which will be set after the breakdown mill, also will allow for future production range increases, according to the project contractor.

In Cartersville, Gerdau is setting three additional CS-type stands between the breakdown mill and the finishing mill, as well as adding a cold saw to the finishing section. As with the Petersburg project, the goal is to increase productivity and improve section control.

SMS group is performing the upgrades, and the work is to be completed by the end of this year.

JSW STEEL

The Indian steelmaker’s U.S. subsidiary last fall commissioned the first phase of an upgrade to its plate mill in Baytown, Texas, USA. The work entailed installation of a new primary descaler, hot plate leveler and shearing line.

More extensive upgrades are to come in a second phase of work, through which the company will replace the reversing rolling mill and install a pre-leveler as well as replace the cooling beds and equip the mill with direct quenching and accelerated cooling capabilities. Danieli is performing the modernization.

The company has plans to install a new electric arc furnace and caster at the mill, but those plans have been put on hold.

LIBERTY STEEL GROUP

Just over a year after reopening its shuttered wire rod mill in Georgetown, S.C., USA, U.K.-based Liberty Steel last fall announced its intent to install a new electric arc furnace there and make other improvements.

Liberty Steel said the investment will help to lift wire rod production to more than 400,000 tons annually. As the mill is configured now, the capabilities of the meltpshop lag those of its rolling mill, it said.

The project will include new electrical systems, improvements to water and natural gas supply, and ancillary equipment to support improved meltshop operations.

Furnace installation and other upgrades to melting and casting facilities are expected to take between six and nine months. The meltpshop will be out of service during construction, and Liberty intends to roll externally sourced billets during that time, including billets from its sister plant in Peoria, Ill., USA.

GROUP SIMEC

Pacific Steel, a Grupo Simec subsidiary, started up a new 4-strand billet caster in early 2019. The investment is intended to improve overall plant performance and expand its product lineup to include specialty steel grades. The Danieli-built caster is capable of producing 115-mm, 136-mm, 160-mm, and 165-mm squares at speeds up to 4 m/minute.

The caster, which utilized the existing civil works, features in-mold stirring, stopper rods that can cast in open- and closed-stream mode, and an on-the-fly nozzle change device.

NORTH STAR BLUESCOPE STEEL

In August, the U.S. subsidiary of Australia’s BlueScope Steel greenlighted a US$700 million expansion of its Delta, Ohio, sheet mill. Through the project, the company is adding a third electric arc furnace and a second caster, lifting its capacity by about 850,000 metric tons. Further debottlenecking work could increase that capacity by an additional 500,000 metric tons.

The expanded meltpshop, which is being supplied by Danieli, will include a 195-ton EAF, two ladle metallurgy furnaces and a Pulse-Jet fume treatment plant, and two electric overhead traveling cranes.

SMS group holds the contract for the single-strand, thin-slab caster, which will produce slabs in thicknesses of 95 mm to 110 mm and in widths of 900 mm to 1,595 mm.
The first heat is expected to occur at the end of next year and ramp-up is to occur over the following 18 months.

The company has placed orders for the major pieces of equipment — the furnace, caster, tunnel furnace, cranes and high-voltage yard. Also, construction on the new meltshop building as well as the tunnel furnace shuttle car foundations has begun.

Construction of a new administration building and consumables warehouse was, as of press time, nearly complete, the company said.

**NUCOR CORP.**

With more than US$3.5 billion in projects on the books, the country’s largest steelmaker is in the midst of what is the largest capital expansion in its history. The company is managing about a dozen projects at the moment, each in various stages.

At the top of that list is its US$1.7 billion greenfield plate mill in Brandenburg, Ky., USA. The mill, which will be capable of producing 1.2 million tons, was announced in early 2019 with site selection coming about three months later. Nucor has a team on-site and has begun excavation work.

The mill is Nucor’s single largest investment ever. It is being optimized to produce thermomechanical rolled plates, API grades and wear-resistant grades. It will make cut-to-length, coiled, heat treated and discrete plate in widths ranging from 60 inches to 160 inches and in gauges ranging from 3/16-inch to 14 inches.

The mill, which will feature Danieli technology, includes an EAF with eccentric bottom tapping, a twin-station LMF and a twin-station vacuum tank degasser equipped with mechanical pumps. The plate rolling mill will consist of two stands — a roughing mill and a Steckel mill. The roughing mill also will be designed for the rolling of 36-inch ingots.

Start-up is scheduled for late 2022.

Nucor has two other greenfield projects on the books, a rebar micro-mill in Sedalia, Mo., and another in Frostproof, Fla. Nucor struck the first arc at the Sedalia plant in January, and was within hours producing ready-to-ship bundles of rebar.

The mill has a rated capacity of 380,000 tons per year and can produce No. 4 to No. 11 rebar in straight lengths and in spools.

The plant includes a side-charge, 40-ton AC EAF and a single-strand, high-speed continuous casting machine connected to a 16-stand ultracompact rolling mill.

The Frostproof mill will be similar to the Sedalia mill, and is set to come on-line in the second half of this year. Combined, the mills represent an investment of US$485 million. Danieli is building both of those mills.

Also this year, Nucor expects to wrap up the expansion of its Kankakee bar mill in Illinois, where it is adding a US$185 million merchant bar mill capable of producing 500,000 tons annually. Its products will include equal and unequal angles from 3 to 7 inches, channels from 3 to 10 inches, flats up to 12 inches, rounds up to 3 3/8 inches and No. 14 to No. 18 rebar.

That project isn’t all, however, at that mill. Nucor and local Kankakee officials revealed an additional US$40 million investment in a new caster and ladle metallurgy station. The 4-strand caster will...
produce commercial grades, low-carbon, peritectic and medium-carbon grades.

Elsewhere in the company’s footprint, a US$520 million investment is proceeding at its Arkansas sheet mill. In October, Nucor cut the ribbon on a specialty cold mill complex designed to produce lighter-gauge and higher-strength steels. Its product roster includes high-strength, low-alloy; motor lamination; and advanced high-strength steel grades.

The mill is ramping up production and qualifying grades.

The cold mill will be complemented by a third-generation continuous galvanizing and annealing line, now under construction. Representing an investment of approximately US$275 million, the line will have a capacity of approximately 500,000 tons annually and will process cold-rolled substrate from the cold mill. Start-up is scheduled for next year.

There is, however, a third investment in the works at the Arkansas mill. In December, Nucor said its board OK’d installation of a 250,000-ton paint line. The line will be able to process sheet in thicknesses of 0.010 to 0.065 inch and in widths of 35 to 72 inches.

In Kentucky, Nucor is investing US$850 million in its Gallatin sheet mill. The two-part investment is made up of a 72-inch pickling and galvanizing line and an expansion of hot band capacity from 1.6 million tons to about 3 million tons. The project also will take its maximum coil width to 73 inches.

The galvanizing line is operating and was ramping up in the fourth quarter of 2019, but the hot band expansion isn’t set for completion until 2021.

Company executives recently reported that utilization of the Gallatin galvanizing line was, as of late January, already more than 50% and that the Arkansas cold mill was running 24/7. In fact, about one-third of the cold mill’s capacity was under contract, they said, adding that they were expecting to receive a key automotive certification by the middle of this year.

In Mexico, production has begun at Nucor’s joint-venture galvanizing line in Mexico with partner JFE Steel. Output from the 400,000-ton line is intended for the Mexican automotive market. Nucor will supply half of the steel to be coated in the facility. The mill is estimated to cost US$360 million.

Other recent investment announcements include a vacuum tank degassing system for its Darlington, S.C., USA, bar mill. The addition of the system will enable the mill to produce engineered bar products meeting some of the most stringent quality specifications in the industry, Nucor has said. The system is scheduled for start-up late this year.

SSAB AMERICAS

The company in December started up an accelerated cooling system at its Mobile, Ala., USA, mill. Installation of the system is meant to increase the mill’s capacity to make premium steels and reduce the need for alloys. It also is a precursor for the potential installation of direct quenching technology similar to what SSAB uses in its mills in Finland and Sweden.

The cooling line is part of a US$110 million package of improvements SSAB is making to the Mobile facility. The upgrades would eliminate production bottlenecks and lift the plant’s quench and temper capacity 33% to about 440,000 tons annually.

SSAB has said the work is proceeding according to schedule and the ramp up toward 440,000 tons is to begin next year.

STEEL DYNAMICS INC.

Steel Dynamics Inc. (SDI) received the necessary environmental permits for its greenfield flat-roll mill in Sinton, Texas, USA, and construction is underway.

The project represents a US$1.9 billion investment. With an annual capacity of about 3 million tons, the mill is expected to lift Steel Dynamics’ flat-roll capability by 25%. Production will target the energy and construction sectors in the U.S. and the appliance and automotive sectors in northern and mid-central Mexico.

Its products would include advanced high-strength steels, hot-rolled and cold-rolled grades, galvanized sheet, Galvalume®, and painted steel.

Steel Dynamics contracted SMS group to build the mill, which is being outfitted with two DC electric arc furnaces; two twin-ladle furnaces and a double vacuum tank degasser; a Compact Strip Production thin-slab caster and 8-stand rolling mill; a 5-stand pickling line/tandem cold mill; a skinpass mill; and a continuous galvanizing line. It also includes a Danieli paint line.

It expects to begin producing hot band by June 2021.

Elsewhere within the company’s footprint, Steel Dynamics is eyeing a mid-year start-up of a US$140-million galvanizing line at its Columbus, Miss., facility. Steel Dynamics built the line to satisfy new value-added outlets. As the mill added new painting and Galvalume coating capability and began making more complex grades of flat roll, it diverted output that would have otherwise been sold to standing galvanized customers.
The Fives-built galvanizing line will produce sheet in thicknesses of between 0.013 inch and 0.160 inch and in widths of between 36 inches and 72 inches.

Concurrent with that project, SDI is undertaking a US$90 million investment to further increase the range of complex grades it can make, including advanced high-strength steels for both the automotive and energy sectors. These upgrades will be completed by the end of 2020. In addition to the new galvanizing line, SDI is upgrading both existing galvanize lines for the expanded product offering and productivity improvements. In addition to process line improvements, SDI Columbus is installing Liquid Core Reduction (LCR) on both casting machines along with hot strip mill improvements to fully utilize the LCR capability.

Also during the year, Steel Dynamics ramped up an US$82 million expansion at its structural and rail mill in Columbia City, Ind. The expansion gives it the ability to produce 240,000 tons of rebar in sizes from No. 3 to No. 8. This expansion includes cut-to-length and coiled rebar capability.

Among the main equipment: a 70-m conveyor connecting the existing medium section mill to the new spooler line, a 3-MW induction furnace to heat the stock coming from the existing mill, six housingless SHS 180 roller stands complete with quick stand-changing table, a 6-pass Delta-type finishing block driven by a low-voltage 2.5-MW motor, and finishing services.

STELCO INC.

The Canadian steelmaker last November announced its intention to enter the merchant pig iron business, revealing plans to install a pig iron caster at its Lake Erie Works. The company said the caster, which will have a nameplate capacity of more than 1 million metric tons, would lower costs and give it an entirely new product to add to its lineup.

And demand so far seems to be strong, it said, given that it has already received a two-year commitment for a significant portion of the new product.

Installation of the casting machine will coincide with a planned CA$100 million reline of the Lake Erie Works blast furnace, which is set to occur in the second half of this year. Stelco said the reline is expected to lift the company's hot-rolled coil capacity by about 300,000 metric tons annually. It also expects to begin shipping pig iron in the fourth quarter.

Also in 2019, Stelco commissioned a CA$30 million batch annealing facility at its Hamilton Works and began shipping annealed coils of cold-rolled sheet. That project, coupled with the restart of an upgraded temper mill, has given Stelco the ability to annually produce 200,000 tons of fully processed cold-rolled steel for the automotive, appliance and service center markets, as well as the architectural pre-painted steel market.

Additionally, the company is exploring development of a co-generation facility at the Lake Erie Works. A co-gen plant would run off the mill’s excess industrial gases and reduce its exposure to peak electricity pricing. Stelco has contracted DTE Energy Services to conduct detailed design and engineering work.

TENARIS

The pipe and tubemaker last summer announced a CA$36 million (US$27.2 million) investment at its seamless and welded mills in Canada. Much of the investment is being put toward its AlgomaTubes operation in Sault Ste. Marie, Ont., Canada, where the company will install a new premium connections line.

The new premium connections line will thread TenarisHydril proprietary Wedge and Blue® Series connections, offer sour service grades capacity for all the products Canada demands, and add capacity to produce a more complete diameter range. The infrastructure upgrades are projected for completion by the end of 2020. Once operating and at full capacity, Tenaris will add nearly 90 full-time jobs.

Additionally, Tenaris announced an improvement project at its Prudential welded pipe mill in Calgary, Alta., Canada. The company said it would upgrade ultrasonic equipment for line pipe testing to supply customer orders with increased inspection requirements.

Meanwhile, in Mexico, Tenaris’ Tamsa facility in Veracruz started up a Danieli roller hearth annealing furnace. The furnace is designed to treat hot- or cold-processed tubes and is able to perform different heat treatment cycles, including normalizing, annealing, tempering and stress relieving.

The furnace has the ability to treat pipe under different protective atmospheres — reducing, 100% N₂ and air. It has the capacity to treat 5 tons’ worth of tube per hour. It can handle diameters ranging from 15 mm to 120 mm, thicknesses from 1.5 to 20 mm and lengths up to 16 m.

TERNIUM

The Latin American steelmaker is eyeing a November start-up of its greenfield hot strip mill at its Pesquería, N.L., Mexico, facility. The project represents an investment of US$1.1 billion and is expected to lift the company’s hot-rolled coil capacity by 50%.

The mill, which will be fed slabs from Ternium’s Rio de Janeiro facility and from third parties, will have
an initial capacity of 4.1 million tons, but it can be increased up to 4.8 million tons.

The mill will provide for a broader range of dimensions and advanced grades and is aimed at taking market share back from imports into the automotive, home appliance, machinery, energy and construction sectors.

In addition to the strip mill, Ternium has invested an additional US$280 million in a new galvanizing line and pre-painting facilities in Pesquería. The new lines will enable Ternium to produce additional value-added products for the home appliance, HVAC and automotive sectors.

Both facilities were, at press time, being ramped up. The paint line was to have reached full capacity at the end of 2019 and the galvanizing was to have reached full capacity in the first quarter of 2020.

The galvanizing line has a capacity of 350,000 tons and the paint line has a capacity of 120,000 tons.

**UNITED STATES STEEL CORPORATION**

United States Steel Corporation last May unveiled a US$1.5 billion plan to upgrade its Mon Valley Works in Pittsburgh, Pa. The project entails three main components — a continuous cast-roll strip mill and new ladle at its Edgar Thomson plant, and construction of a co-generation facility at its Clairton coke works.

The cast-roll mill, which links the caster directly with the strip mill, will have a nameplate capacity of 2.5 million metric tons annually and will produce strip in widths up 77 inches and in thicknesses ranging from 0.8 mm to 6 mm.

Primetals Technologies is the primary equipment supplier for mill, which will utilize its Arvedi ESP technology. The mill will be the first Arvedi ESP reference plant in the U.S.
The new ladle metallurgy facility is intended to support production of advanced high-strength steels and maintain the plant’s highly competitive cost structure. Edgar Thomson Plant is U. S. Steel’s lowest-cost liquid steelmaking facility. The company said the project will further reduce conversion costs through improved process efficiencies, yield and energy consumption.

The co-generation facility will be equipped with state-of-the-art emissions control systems and will convert a portion of Clairton’s coke oven gas into electricity to power the steelmaking and finishing facilities throughout U. S. Steel’s Mon Valley operations.

The company has completed detail engineering and is awaiting receipt of environmental permits. The new line is scheduled to enter service in 2022.

When completed, the Edgar Thomson Plant will become the primary source mill for U. S. Steel’s XG3-branded advanced high-strength steels. XG3 coils produced at Mon Valley will be shipped westward to U. S. Steel’s PRO-TEC galvanizing facility in Ohio.

The facility, a joint venture with Japan’s Kobe Steel, is now commissioning a US$400-million hot-dip galvanizing line, capable of coating third-generation advanced high-strength steels. The line will be equipped with advanced heating and quenching capabilities, enabling production of high-formability, ultrahigh-strength steel with tensile strengths of at least 780 MPa.

Meanwhile, the company is investing US$500 million at its Gary Works to upgrade the hot strip mill and to make other improvements. The work is intended to expand the line’s competitive advantages and further differentiate itself as a leader in heavy-gauge products, U. S. Steel has said.

As part of the work, U. S. Steel has scheduled a major 48-day outage on the mill’s No. 4 blast furnace. The outage, set to take place in the second quarter, includes skip incline improvements and shotcrete work.

Elsewhere, the company is nearing completion of previously postponed project — the new electric arc furnace at its Fairfield Works in Alabama.

The company has said the furnace is in place and construction on supporting components, such as the vault that will house the EAF transformer and the air separation plant, is underway. The furnace has a nameplate capacity of 1.6 million tons and is expected to start up in the second half of 2020, U. S. Steel has said.

Also during 2019, U. S. Steel began work on a new electrical steel line at its integrated facility in Slovakia. The US$130 million line was to have entered service at the end of this year; however, U. S. Steel has postponed the project, citing a slowdown in the European market. Completion is now set for the end of 2022.

The line will produce silicon grades of non-oriented electrical steels to support increased demand in vehicles and generators. It will have an annual capacity of approximately 100,000 metric tons.

ZEKELMAN INDUSTRIES

The Canadian and American pipe and tubemaker announced plans last year to build what it says will be the world’s largest continuous electric-weld tube mill in Blytheville, Ark., USA, next to its existing Atlas Tube facility.

The US$150 million project will allow the company to produce a full range of jumbo-size hollow structural sections (HSS) to win back market share from imports.

With the mill, the company will be able to manufacture square, rectangular and round shapes. Squares will range in size from 8 inches with 0.750-inch walls to 22 inches with 1-inch walls.

The largest rectangular section produced at the mill will be 30-by-14-inch with 1-inch walls, and the largest round section will be in diameters of 28 inches with 1-inch walls. The mill also will produce pipe piling.

SMS group has been chosen to provide the equipment.