US Steel announces electric arc furnace in Alabama as crisis mounts in global steel industry

Jessica Goldstein
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US Steel announced last week that it plans to build a low-carbon electric arc furnace at its Fairfield Works mill in Birmingham, Alabama. According to the Northwest Indiana Times, the furnace will be partly fianced with $63.4 million in Environmental Improvement Revenue Bonds that were secured by US Steel from Hoover, Alabama's Industrial Development Board.

Electric arc furnaces are charged with recycled scrap metal, which is then melted down to make crude steel. As opposed to traditional blast furnaces, it allows steel to be made from 100 percent scrap metal, freeing producers from relying on supplies of raw ores, which in the US naturally occur most abundantly in the northern regions of Michigan and Minnesota.

Developed in the late 19th century, electric furnaces for steelmaking only expanded in Europe after the Second World War because they provided a highly cost-effective alternative to the blast furnaces that dominated steel production in the US, its global economic rival. The expansion of electric furnace mills, or “minimills,” began in 1969 within US borders with Nucor, the largest steel producer in the United States today.

Electric steel production is extremely lucrative compared to blast furnace production. Producing steel from scrap metal significantly lowers energy costs, compared to production primarily from raw ores although they are added to enhance quality. Blast furnaces must remain in production for years at a time, while electric mills can be started and stopped to adjust to demand, increasing their capability for “just-in-time” delivery demanded by purchasers in manufacturing sectors. The ability to rapidly start and stop also significantly lowers the amount of labor needed to operate them.

The operation of electric furnace mills allows corporate management to take advantage of cheaper electricity costs at off-peak hours. Fewer workers spread out over multiple shifts engaged in the production of steel has placed electric steel producers at a competitive advantage in their ability to extract surplus value from workers. Nucor and its competitor, Steel Dynamics, recorded profits of $2.68 billion and $1.53 billion respectively in 2019, compared to US Steel’s $855 million.

Once the world’s leading steel producer, America has declined in recent decades and today is vastly outpaced by China, which now produces over 50 percent of the world’s steel supply. Domestically, American steelmakers are shifting to electric steel production because of the high profits and lower production costs. According to S&P Global Platts, 67 percent of the 83.8 million metric tons of crude steel produced in the US in 2018 was made in minimills.

US Steel’s aggressive entry into the electric steelmaking arena signals an historic shift for the Pittsburgh-based corporation, as it increasingly shifts away from traditional blast furnaces. It has postponed its proposed $750 million investment in its Gary Works integrated mill in Gary, Indiana and $1.5 billion investment in Clairton Coke Works and Edgar Thomson Steel Works in Braddock, Pennsylvania.

In addition to the 2019 closure of its Great Lakes Works , US Steel carried out thousands of job cuts in the past year after markets crashed when the COVID-19 pandemic exposed the mounting contradictions of the US capitalist economy. These cuts were not opposed in any significant way by the United Steelworkers union, which collaborated with management to force through sellout contracts at both US Steel and ArcelorMittal in 2018 which included no job protections for workers.

Recently the corporation spent $700 million to acquire a 49.9 percent stake in Big River Steel, the Osceola,

Arkansas-based electric steel mill which it has been in the process of acquiring since October 2019. Big River has billed itself as a technology company that makes steel and uses artificial intelligence in its production processes, in addition to electric furnaces that melt scrap to produce steel rather than by the traditional blast furnace method of combining the raw materials of iron ore, carbon and other elements.

Big River recently completed the second phase of a $716 million expansion project two months ahead of schedule. The company brought in a second electric arc furnace, a ladle metallurgical station, a thin-slab continuous caster, a tunnel furnace, and a hot mill downcoiler. The new capital is expected to increase production capacity to 3.3 million tons per year.

Thus far, no new jobs have been announced for Big River in light of the expansion. In reality, the introduction of this technology is a way to cut labor costs. According to the *Northwest Indiana Times*, the mill is expected to produce 5,000 tons of steel per worker, up from 3,000 tons, as a result of the expansion project.

The significant investments that the corporation has made in electric production come as profits and production for the American steel industry declined across the board in 2019, after a brief upsurge when Trump's 25 percent tariffs on imported steel went into effect in March 2018. The following year, retaliatory tariffs took effect and demand dropped on a global scale, causing prices to drop.

Production of steel took a hit worldwide after the shutdown of industries in response to the pandemic. The global ruling class is now seeking to recoup the losses as quickly and as cheaply as possible, now that most manufacturing plants have been forced back online. According to the World Steel Association, global steel demand is expected to rebound by 3.8 percent in 2021 after falling by 6.4 percent in 2020.

However, the expected rise in demand is not enough to resolve the inherent contradictions in the world economy, which will explode again in the coming months as millions of workers remain unemployed and cannot afford new goods.

In June of this year, S&P Global Platts pointed to the economic crisis caused by the pandemic as a precursor to heightened trade war measures: "The breakdown in supply chains and logistics has sparked debates about whether countries and companies should be more self-sufficient by repatriating manufacturing—or conversely whether they should diversify their supply bases to spread out the risk. … More antidumping measures are inevitable. ... Exports act as a release valve when domestic demand cannot absorb enough domestic production."

US workers can expect more layoffs, wage and benefit cuts, and utter neglect to safety measures as the crisis of the ruling class deepens in the coming year. All of these attacks will go unchallenged by the United Steelworkers union, which like the United Auto Workers union has been exposed as a company union through and through.

The USW vocally supported the Trump administration's anti-China rhetoric and trade war measures, a betrayal which led thousands of steelworkers to lose their jobs while sowing toxic national divisions. The USW has only criticized Trump when his trade war measures were not punitive enough and supported President-elect Joe Biden in the 2020 elections on the pretext that his administration would take a harder economic line against China and ensure that the US corporate ruling elite would be able continue its assault on the working class for its profit interests.

The way forward for steelworkers in the US is not the embrace of nationalism, but the fight to build an independent, international working class movement against global capitalist rule and all of its agents in the trade unions and Democratic Party. To ensure the rights of every worker to a job and a safe workplace, the global steel industry must become a public entity, controlled democratically by the global working class to harness all of the benefits of modern technology and production to meet the needs of society, not the profit interests of a wealthy few.