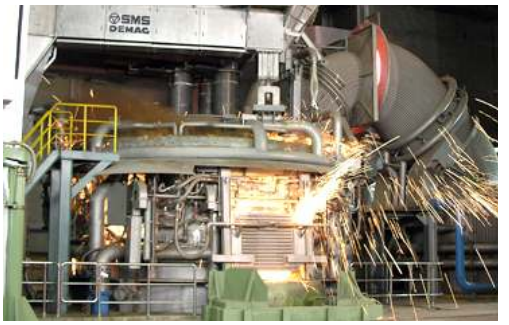
US Steel Orders EAF and Vacuum Tank Degasser with SMS

The company United States Steel Corporation, recently made the strategic investment to build an electric arc furnace at its Fairfield Works outside of Birmingham, Ala. Fairfield Works is comprised of both steelmaking and finishing facilities for both flat-rolled and tubular markets. SMS USA was selected as the supplier of the1.6 million net ton EAF.



The order includes engineering and supply of the furnace, gas cleaning and material handling equipment, including electrics and automation. Additionally, a vacuum tank degassing facility, equipped with advanced mechanical pumps, is included in the supply. The pumping system will be designed and assembled in Tarcento, Italy by SMS Concast. Several safety-related technologies will be incorporated into both operating facilities.

ArcelorMittal Partners with LanzaTech and Primetals

ArcelorMittal, a Luxembourg-based steel and mining company; LanzaTech, a carbon recycling company with offices in Skokie, Illinois and Shanghai; and Primetals Technologies, a London-based technology and service provider to the iron and steel industry have entered into a letter of intent to construct Europe's first-ever commercial scale production facility to create bioethanol from waste gases produced during the steelmaking process. The resulting bioethanol can cut greenhouse gas emissions by over 80 per cent compared with conventional fossil fuels. It will predominantly be used in gasoline blending, but it can also be further processed into other products such as drop in jet fuel.

The 47,000 ton ethanol per year project, sufficient to fuel half a million cars with ethanol blended gasoline, will demonstrate the added value of recycling waste streams, not only by reducing emissions at source, hence reducing ArcelorMittal's direct carbon footprint, but by keeping fossil fuels in the ground through the production of commodity chemicals and fuels that would otherwise be made from oil.

Approximately 50 percent of the carbon used in the chemistry of steelmaking leaves the process as carbon monoxide. Today, this waste gas stream is either flared or used to heat and power the steel mill. In either case, the carbon monoxide is combusted and the resulting carbon dioxide is emitted. LanzaTech's technology, however, recycles the waste gases and ferments them with a proprietary microbe to produce bioethanol. Every ton of bioethanol produced, displaces 5.2 barrels of gasoline as well as reducing ArcelorMittal's CO2 emissions by 2.3 tons, the companies say.

LanzaTech's carbon recycling technology was recently awarded the United States' highest green chemistry honor, the Environmental Protection Agency (EPA) Presidential Green Chemistry Award. LanzaTech says it is collaborating with companies across multiple sectors including U.S. aircraft manufacturer Boeing and Japanese industrial conglomerate Mitsui.

Construction of the $95 million (€87 million) flagship pilot project, which will be located at ArcelorMittal's steel plant in Ghent, Belgium, is anticipated to commence later this year, with bioethanol production expected to start mid-2017. Construction will be in two phases, with phase one providing an initial capacity of 16,000 tons of ethanol per annum by mid 2017 and phase two, which will be completed in 2018, bringing the total capacity to 47,000 tons of ethanol per annum.

ArcelorMittal, which has been working on this project since 2011, has signed a long-term partnership agreement with LanzaTech. Hence, once construction of the Ghent flagship plant is complete and the commercial viability of the project is proven, the intention is to construct further plants across ArcelorMittal's operations. If scaled up to its full potential in Europe, the technology could enable the production of around 500,000 tons of bioethanol a year.

"This partnership is an example of how we are looking at all potential opportunities to reduce CO2 emissions and support a transition to a lower carbon economy," says Carl De Maré vice president, innovation, ArcelorMittal.

"ArcelorMittal and Primetals Technologies have consistently stayed on the cutting edge of innovation in the steel industry and have demonstrated their commitment to reducing their carbon emissions," says Jennifer Holmgren, CEO of LanzaTech. "We are tremendously excited to announce this partnership and our first production facility in Europe at a time when it is abundantly clear that we need all solutions and the commitment of large corporations, cities and countries around the world, to help us stay within our 2 degree carbon budget and keep fossil reserves in the ground."

Primetals Technologies will be responsible for part of the engineering, automation, key equipment and commissioning. "We are excited to be a partner in this leap-frog project with LanzaTech and ArcelorMittal. Once in operation, it will become a game changer within the industry and a benchmark for low-carbon footprint steelmaking," says Karl Purkarthofer, senior vice president of Primetals Technologies.