

### Industry Sector Industry Solutions Division

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#### **Siemens Receives Several-Hundred-Million-Euro Contract from Zaporizhstal, Ukraine – New Steel Mill to Replace Open-Hearth-Furnace and Ingot-Casting Route**

**The Ukrainian steel producer Zaporizhstal Integrated Iron & Steel Works JSC (Zaporizhstal JSC) awarded Siemens VAI Metals Technologies a major contract for the supply of hot-metal desulphurization stations, LD steelmaking converters, ladle furnaces, a vacuum oxygen decarburization plant, dedusting facilities and slab casters for a new steel mill under construction in Zaporizhzhya, a city in southeastern Ukraine. This metallurgical complex will be capable of producing 4.7 million tons of carbon steel grades per year for a wide range of industrial applications. Following start-up of the oxygen steelmaking facilities scheduled to begin in late 2010, Zaporizhstal JSC will eventually terminate its open-hearth-steelmaking production and ingot-casting route, resulting in significant cost savings, product quality and environmental advantages.**

For the new steel works under construction on the Dnieper River in the city of Zaporizhzhya in southeastern Ukraine, Siemens VAI will provide basic engineering for the steel bay and plant layout in addition to detailed engineering and the supply of key process equipment. This includes two hot-metal desulphurization stations, two 250-ton-capacity LD (BOF) oxygen steelmaking converters, two twin-station ladle furnaces, a VOD (vacuum oxygen decarburization) plant, two 2-strand slab casters, primary and secondary dedusting facilities and the related electrical and Level 1 and Level 2 automation systems. For this project Siemens VAI will also supply two hot-metal ladle-transport lines, twelve 300-ton torpedo cars for transporting hot metal, ladles, a laboratory, and various auxiliary facilities and spare parts.

The LD (BOF) converters will be outfitted with the VAI-Con Link suspension system, oxygen lance systems, sublances and VAI-Con slag stoppers to minimize slag carry-over during tapping. Converter doghouses will be provided to reduce converter emissions within the steel bay and to improve operational safety. The dry-type primary dedusting systems will be supplied with round-

type electrostatic filters characterized by a low energy consumption and high degree of efficiency. The offgas cooling stack is designed as a waste-heat boiler for the generation of steam. A gas-recovery system and secondary-dedusting systems will also be supplied, the latter of which are equipped with pulse-jet filter technology.

The two 2-strand slab casters with straight molds are bow-type casters with bow radii of eight meters and maximum metallurgical lengths of 27.8 meters. The machines will be capable of casting a total of 4.7 million tons of slabs per year at thicknesses of 150, 165 and 220 millimeters and in widths between 900 and 1,550 millimeters. A broad range of technological packages will be provided to optimize production performance, casting flexibility and product quality. These include LevCon automatic mold-level control with fully automatic start of casting operations, MoldExpert for strand-break-out prevention, DynaWidth for the automatic adjustment of the slab width during casting and DynaFlex for the on-line adjustment of the mold-oscillation parameters. Furthermore, SmartSegments will be installed for the remote adjustment of the roller gap settings for casting different slab thicknesses, which, in combination with DynaGap SoftReduction technology, will compress the slab thickness in the area of final strand solidification to improve the internal slab quality. Level 2 process models include the Dynacs secondary cooling model, YieldExpert for optimization of the cut-slab length as well a VAIQ slab-quality control.

Advisory services for erection, start-up and commissioning as well as training round off the Siemens VAI scope of supply.

Zaporizhstal JSC is one of the largest industrial enterprises in the Ukraine. In the year 2007, the company produced approximately 4.5 million tons of crude steel comprising carbon, low-alloyed, alloyed and stainless steel grades. The company's products are sold to some 100 countries worldwide and are used by welded-tube producers, for domestic appliances and in the automotive, machine-building, agricultural and transportation industries.

Further information on solutions for steel works, rolling mills and processing lines is available at <http://www.siemens.com/metals>

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