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## Primetals Technologies to supply EAF Quantum to Acciaieria Arvedi

- **First deployment of new furnace type in Europe**
- **Annual production capacity up to 1.57 million metric tons**
- **Integrated dedusting and heat recovery system improves environmental balance**

Italian steel producer Acciaieria Arvedi S.p.A. has ordered an EAF Quantum from Primetals Technologies. This new type of electric arc furnace, to be installed in the Cremona steel works, reduces specific conversion costs of electric steel production by around 20 percent and will have an annual production capacity of up to 1.57 million metric tons of crude steel. The order also includes a complete dedusting system for primary, secondary and auxiliary emission sources with a heat recovery system to reuse the thermal power from the furnace offgas to produce steam for the pickling lines. The new EAF Quantum is scheduled to go on stream in the summer of 2016.

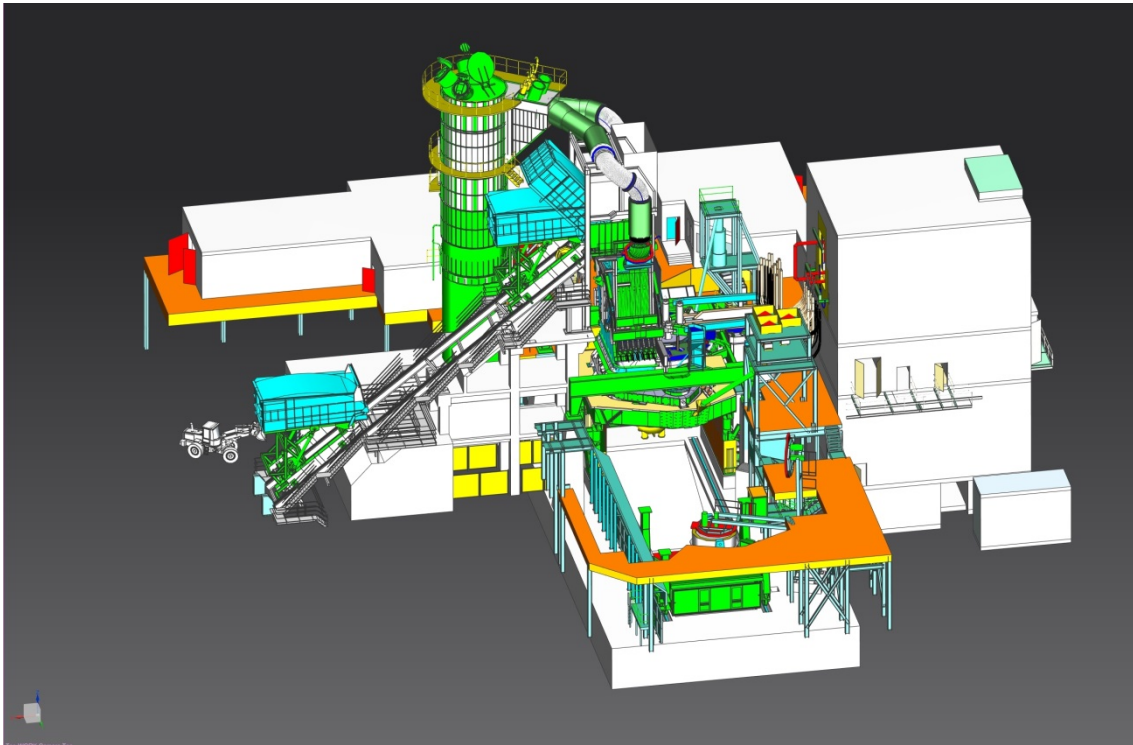
Acciaieria Arvedi S.p.A. is part of the Arvedi Group based in Cremona, Italy. The steel works has two fully equipped plants for producing flat steel products in coils. Each plant consists of a meltshop for producing liquid steel and a casting-rolling line. One of these plants operates on the Arvedi ESP principle (endless strip production) and was implemented together with Primetals Technologies. Production focuses mainly on special steels, in particular high-strength steels and dual-phase steel (DP), as well as thin and ultra-thin sheet metal sheets which can replace cold-rolled products in many applications.

The new EAF Quantum from Primetals Technologies will have a tapping weight of 125 ( $\pm 10$ ) metric tons and replace an existing, conventional 120 ton electric arc furnace, expanding the production capacity of Acciaieria Arvedi as well as reducing conversion costs. The new electric arc furnace combines proven elements of shaft furnace technology with a new scrap charging process, an efficient preheating system, a new tilting concept for the lower vessel, and an optimized tapping system, enabling tap-to-tap times of between 36 and 40 minutes. Electricity consumption, being as

low as 280 kilowatt-hours per metric ton, is considerably less than that of a conventional electric arc furnace. An additional advantage of the new EAF Quantum is an increase of the yearly production by 20 percent - from 1.1 to 1.35 million metric tons per year - without changing the tapping weight or the power input. Together with the reduced consumption of electrodes, this produces an overall conversion cost benefit of some 20 percent. Overall CO<sub>2</sub> emissions can also be cut by up to 30 percent per metric ton of crude steel in comparison to conventional electric arc furnaces. The scope of supply also includes three refining combined burner (RCB) systems, a Lomas gas analysis system to optimize process control, and a LiquiRob robot system for taking samples and measuring temperatures. This feature allows for manless operation on the spot, thus increasing working safety.

The dedusting system of the existing electric arc furnace will be modified and redeployed on the EAF Quantum furnace. The total extraction volume will also be increased by installing an additional filter for both the secondary and auxiliary emission sources for the EAF Quantum. In the final stage, the total suction volume is planned to be around 1.8 million cubic meters per hour. The dedusting system will meet the strictest European environmental requirements, achieving a residual dust content of less than five milligrams per standard cubic meter of air.

The heat extracted from the water cooled hot gas line will be used to generate steam, and thus further minimize the energy requirements of the steel plant in Cremona. Some 17 metric tons of steam will be generated every hour and used in the two pickling lines of the rolling mill. The steam produced in the heat recovery plant will replace the gas burners in the existing boiler system at Acciaieria Arvedi, reducing the consumption of fossil fuels in the sheet steel production in the Cremona plant by the equivalent of approximately 17 megawatts of thermal power.



Computer animation of an EAF Quantum from Primetals Technologies. An electric arc furnace of this type will be installed at Acciaieria Arvedi in Cremona, Italy.

This press release and a **press picture** is available at

[www.primetals.com/press/](http://www.primetals.com/press/)

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