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Abinsk Electric Steel Works starts up minimill modernized by Primetals Technologies

- **Billet production rises from 1.2 to 1.5 million metric tons per annum**
- **More quality steel grades can be produced**
- **New technology ensures higher availability and lower maintenance costs**
- **Conversion costs are substantially reduced**

Recently, the minimill modernized by Primetals Technologies was started up at Russian long product producer Abinsk Electric Steel. The modernization included the company's electric arc furnace, ladle furnace and 6-strand continuous billet caster. The aim of the project was to increase the production capacity of billets with cross sections of 130 and 150 millimeters from 1.2 to 1.5 million metric tons per year. Additionally, Abinsk is now able to produce more quality steel grades, such as high carbon steel for wire and spring steel. Moreover, the new technology not only increases the availability of the steel works, but also decreases maintenance costs. Conversion costs also are substantially lowered. The energy requirement of the electric arc furnace is reduced from 410 to 370 kilowatt hours per metric ton. Primetals Technologies had received the order in early 2016.

Abinsk Electric Steel Works is one of Russia's leading producers of reinforcing bars and other long products. The company runs an electrical steel works and two rolling mills in Rajon Abinsk, located in the South Russian region of Krasnodar. Primetals Technologies was responsible for the basic and detail engineering, the production and supply of the new equipment, and supervised their construction and commissioning. Also, the electrical steel works was equipped with new cross-plant process automation.

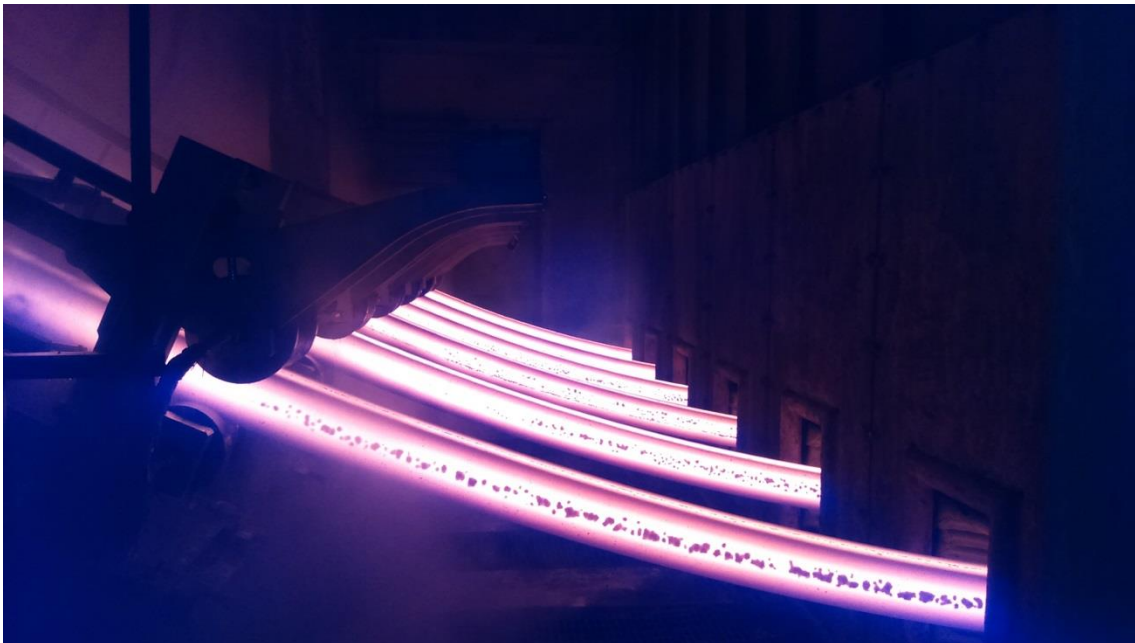
The modernization also involved installing a PLC-Based electrode control system and a new oxygen injection system for the electric arc furnace in the steel works. In addition, high-current cables and the complete high-current busbar system after the furnace transformer were replaced. The off-gas elbow was re-engineered, and a new furnace pressure control system with Direct Evacuation Damper after the hot gas duct of the furnace primary suction line was installed.

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The main hydraulic system of the electric arc furnace was modified to improve furnace movements and minimize the power off times, approximately by 20 seconds per each scrap charging. In addition to the electric arc furnace also the ladle furnace was modernized and equipped with a new, four strand wire feed and a new lime injection system.

For the modernization of the 6-strand continuous billet caster, Primetals Technologies supplied stopper casting equipment, consisting of stopper mechanisms with electromechanical actuators, shroud manipulators, emergency cut-off gates and automatic mold powder feeders. For casting at higher speeds, the maximum casting speed being 5 meters per minute for the 130 x 130 millimeter casting format, new DiaMold tube molds, DynaFlex mold oscillators, electromagnetic stirrers, roller blocks and secondary cooling spray headers were installed. A new billet marking machine was installed in the run-out area of the plant. The existing turnover cooling bed was modernized, new hydraulic cylinders installed, and the cooling bed hydraulic system modified.



At the minimill of Abinsk Electric Steel Works in the South Russian region of Krasnodar, Primetals Technologies has modernized the electric arc furnace, the ladle furnace and the 6-strand continuous billet caster. The image shows a 6-strand continuous billet caster from Primetals Technologies.

This press release and a press photo are available at

www.primetals.com/press/

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Primetals Technologies, Limited headquartered in London, United Kingdom is a worldwide leading engineering, plant-building and lifecycle services partner for the metals industry. The company offers a complete technology, product and service portfolio that includes integrated electrics, automation and environmental solutions. This covers every step of the iron and steel production chain, extending from the raw materials to the finished product – in addition to the latest rolling solutions for the nonferrous metals sector. Primetals Technologies is a joint venture of Mitsubishi Heavy Industries (MHI) and Siemens. Mitsubishi-Hitachi Metals Machinery (MHMM) - an MHI consolidated group company with equity participation by Hitachi, Ltd. and the IHI Corporation - holds a 51% stake and Siemens a 49% stake in the joint venture. The company employs around 7,000 employees worldwide. Further information is available on the Internet at www.primetals.com.

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