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## Level-2-system from Primetals Technologies digitalizes know-how for Jindal Stainless AOD converter

- **New Level-2-system replaces existing solution of a third-party AOD converter**
- **Hot Commissioning completed successfully in just two weeks**
- **Existing level-1-system also optimized by Primetals Technologies**
- **Valuable production know-how successfully digitalized**

Jindal Stainless Ltd. issued the final acceptance certificate for the new level-2-process automation on AOD converter #1 to Primetals Technologies in April 2019. The AOD converter was equipped with a level-1-system and brought into operation by a third party in 2010. Jindal Stainless Ltd. subsequently developed its own solution to optimize the implemented level-2-system. This has now been replaced by a new, comprehensive level-2-system from Primetals Technologies that includes a dynamic process model. After running the old and new systems in parallel, the hot commissioning of the new level-2-system from Primetals Technologies was successfully completed in just two weeks. Process stability has been substantially increased, and accuracy for the calculation of the development of carbon and temperature in real time during production has been improved. Furthermore, the system offers greater insights and a better overview of the production process.

### **Rapid modernization and integration of the level-2-system**

After a number of years of operation, Jindal Stainless Ltd. decided to modernize the level-2-system it had developed for AOD converter #1 at its steel works in Jajpur, Odisha. The AOD converter was brought into operation with a level-1-system by a third party in 2010. The level-2-system for AOD converters from Primetals Technologies offers a large number of interfaces as standard. These were adapted to the existing IT environment at Jindal Stainless Ltd prior to commissioning. Peter Juza, head of Electrical Systems & Automation at Primetals Technologies in Linz, expressed his satisfaction with the result, "The professional preparation and constructive cooperation between experts from Jindal Stainless Ltd., Primetals Technologies India and Primetals Technologies Austria enabled the hot commissioning to be completed successfully in just two weeks." During the commissioning and integration of the level-2-

system into the plant, several optimization measures were carried out on the existing level-1-system to enable Jindal Stainless Ltd. to enjoy efficient, trouble-free operation.

### **Advantages achieved in production**

Initial experience in operation show lived up to expectations. Production processes are now running considerably more stably. The standard functions of the level-2-solution from Primetals Technologies together with the coupling to level 1 and to level 3 (production planning system) and the laboratory now allow a great deal more valuable and relevant data to be saved, and more reports to be generated. This improves the overview for the plant operator and offers a broader basis for analyses to improve the process.

### **Real-time calculations by dynamic process models**

The heart of level 2 process automation is the dynamic process model, which allows both advance calculation and online simulation of the process. Calculating the melts in advance enables errors to be avoided, because the input materials are prepared in good time. The dynamic process model is based on dozens of metallurgical equations, which use a cyclic online calculation to calculate the chemical reaction in the AOD converter both currently in real time and at a point in the future. The precise, real-time calculation of the development the temperature and carbon during production improves both process accuracy and the quality of the stainless steel produced.

### **Valuable know-how successfully digitalized**

One of the important advantages of the modernization of the level 2 process automation of the AOD converter is that all significant process data is collected by the digital twin from Primetals Technologies, which creates a valuable knowledge database for use in future optimizations and new developments. This digitalizes the know-how of many experts at Jindal Stainless Ltd., and this digitalized knowledge is now equally available to all levels, thus making a major contribution toward maintaining the stainless steel produced by Jindal Stainless Ltd. at a consistently high quality.

Jindal Stainless Ltd. was founded in 1970 by Shri O.P. Jindal and is one of the largest stainless steel producers in India. The company is one of the world's top ten stainless steel conglomerates. The Jindal Stainless Group has an annual crude steel capacity of 1.6 million metric tons, and annual sales of US\$ 3.4 billion (as at March 2019).



The team from JSL, Primetals Technologies India and Primetals Technologies Austria completed the hot commissioning of the new level 2 process automation of AOD converter #1 of Jindal Stainless Ltd. in Jajpur, Odisha in just two weeks.

This press release and a press photo are available at [www.primetals.com/press/](http://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, digitalization 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](http://www.primetals.com).