

PRESS RELEASE

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Tenova's Flameless SmartBurner: Enabling hydrogen-based decarbonization of industrial furnaces

Tenova is ready to supply megawatt-size flameless combustion system burning any mixture of natural gas and hydrogen, up to 100% hydrogen, integrated with Tenova's advanced digital solutions.

Castellanza, November 25, 2020 – Tenova, a leading company specialized in innovative solutions for the metals and mining industries, marks a new milestone in the **decarbonization** of steel production: its **TSX SmartBurner for reheating furnaces** is now ready to be installed in industrial plants with potentially zero carbon dioxide emissions, working in a full range of hydrogen and natural gas mixtures. **It is the first flameless burner of a megawatts family that has been tested with 100% of hydrogen successfully.**

The long tradition of Tenova in flameless leading-edge combustion technology allows to maintain NOx emissions well below the next future strictest limits – releasing less than 80 mg/Nm³ @ 5% of oxygen with furnace at 1250°C – also working with 100% hydrogen and maintaining an optimal heat transfer uniformity within the furnace. The quantity of hydrogen can be simply regulated through the burner control logic, allowing steel producers to adapt the fuel mixture to contingent needs without any mechanical intervention.

Tenova's hydrogen flameless combustion system is equipped with the novel **Smart Burner Monitoring System (SBMS)**, which permits to monitor and optimize the burner's performance, operation and maintenance thanks to a network of embedded sensors connected to the **Tenova Digital infrastructure**, through secure connection protocols and intrinsic system reliability.

The data collected are post-processed locally on an edge computing unit and remotely on Tenova Cloud, to monitor the status of the burner and implement breakthrough approaches to inspection, maintenance and tuning, also **reducing safety risks** related to on-site operations.

“This outstanding achievement paves the way to a significant reduction of the carbon footprint of hot rolling processes without compromising productivity, while leaving steel producers total flexibility to modify the percentage of hydrogen through a simple change in the control software settings. This is not the only reason why we call our burners “smart”: thanks to our sensor system technology, we will be able to support our customers remotely to guarantee optimal performances for each burner”, affirmed **Antonio Catalano**, Tenova EVP and Head of Digital Transformation. *“Moreover, the SmartBurner Industrial IoT platform represents the cornerstone of the next generation of industrial combustion systems. The most cutting-edge, sustainable technology based on solid experience and extensive know-how: this is what we offer to our customers”.*

About Tenova

Tenova, a Techint Group company, is a worldwide partner for innovative, reliable and sustainable solutions in metals and mining. Tenova, including its TAKRAF affiliates, leverages a workforce of over 2,500 forward-thinking professionals located in 19 countries across 5 continents, who design technologies and develop services that help companies reduce costs, save energy, limit environmental impact and improve working conditions.

For more information, visit www.tenova.com