

# Hindustan Zinc Deploys AI to Streamline Zinc Production and Enhance Efficiency



[themachinemaker.com/news/hindustan-zinc-deploys-ai-to-streamline-zinc-production-and-enhance-efficiency](https://themachinemaker.com/news/hindustan-zinc-deploys-ai-to-streamline-zinc-production-and-enhance-efficiency)

MM Desk

July 16, 2025



[Hindustan Zinc Limited](#), India's largest and the world's leading integrated zinc producer, has introduced a cutting-edge AI-driven automation system to improve production processes and resource efficiency. The advanced solution harnesses artificial intelligence and machine learning to fine-tune the use of critical consumables—such as zinc dust, sodium sulphate, lime, and cement—ensuring optimal material consumption and consistent product quality.

The system, built in collaboration with deep-tech startup Ripik.AI under the Vedanta Spark accelerator program, is designed to automate dosing operations, reducing manual intervention and boosting overall plant efficiency. This innovation is part of Hindustan Zinc's broader initiative to integrate next-generation technologies—including AI/ML, computer vision, drones, IoT, and AR/VR—into core operations to enhance productivity, metal recovery, and sustainability.

AI-powered analytics have been deployed across the company's three major smelting sites—Chanderiya, Dariba, and Debari. These units now operate with real-time data integration across Laboratory Information Management Systems (LIMS), Distributed

Control Systems (DCS), and Programmable Logic Controllers (PLCs), allowing for adaptive process control and agile decision-making.

Commenting on the company's digital push, Arun Misra, CEO of Hindustan Zinc, said, "Technology and automation are at the heart of our growth strategy. By embracing emerging innovations, we are not only improving operational agility but also reducing environmental impact and enhancing resource utilization. This transformation helps us stay ahead of global industry standards."

Hindustan Zinc is currently collaborating with more than 40 startups across 60 projects through Vedanta Spark. These partnerships focus on real-world use cases—ranging from industrial diagnostics and equipment monitoring to digital twin solutions—all aimed at boosting safety, efficiency, and reliability across the business.

As part of its commitment to sustainability and innovation, Hindustan Zinc recently introduced *EcoZen*—Asia's first low-carbon zinc, produced using renewable energy and carrying a 75% smaller carbon footprint than conventional zinc. Recognized by the S&P Global Corporate Sustainability Assessment 2024 as the world's most sustainable company in the metals and mining sector for the second consecutive year, the company is also certified as 3.32 times water positive and is on track to achieve net-zero emissions by 2050 or earlier.

Watch Video: <https://youtu.be/mTfsAum3T4o>

[Hindustan Zinc Limited](#), a subsidiary of Vedanta Group, is the world's largest integrated producer of zinc and ranks among the top five global silver producers. Holding a dominant 77% share in India's primary zinc market, the company is a leader in sustainable mining practices. Hindustan Zinc is transforming the lives of 1.9 million people through impactful social development initiatives and ranks among India's top 10 CSR contributors. Through its focus on innovation and sustainable growth, the company plays a key role in supplying essential metals for the global energy transition.