



HINDUSTAN ZINC
Zinc & Silver of India

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Q What's your roadmap to reach Net Zero by 2050? Are technologies like hydrogen or electrification really practical?

At Hindustan Zinc, our commitment to achieving Net Zero by 2050, or sooner, is deeply rooted in science-based targets and a strong sense of environmental stewardship. Our decarbonization roadmap centres on the pragmatic adoption of advanced technologies across our mining and smelting processes. Strategic investments in renewable energy are at the heart of this journey. Our power delivery agreement with Serentica Renewables will supply 530MW of renewable capacity, putting us on track to meet approximately 70% of our energy needs from renewables by 2028 and significantly lowering our greenhouse gas emissions by ~3.5 million TCO₂e.

Alongside this, we are accelerating electrification, digitalization, and exploring the potential of green hydrogen-powered equipment. Our collaborations with Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru and IIT Madras are advancing zinc-based battery storage solutions while our partnership with AESir Technologies drives next-generation zinc battery development. These strategic alliances and innovations reinforce our leadership in the clean energy transition.

Our progress is evident. We have deployed ten electric vehicles and 180 LNG vehicles for inbound and finished goods logistics. At Sindesar Khurd Mine, amongst the top 5 silver producing mine globally, we became the first in India to introduce underground battery electric vehicles, with three already in operation and plans to expand both EV and LNG fleets. In 2024, we launched Asia's first low-carbon 'green' zinc product, EcoZen, supporting our customers in reducing Scope 3 emissions.

Recently, our memorandum of understanding with Greenline marks another step forward as we pursue new horizons in sustainable mobility and fuel solutions. Through these integrated and future-ready actions, Hindustan Zinc continues to

set new standards for responsible, impactful operations.

Q Hindustan Zinc is 3.32 times water positive. That's a big number. How did you actually do it?

Achieving 3.32 times Water Positive status in the water-stressed heartland of India is a reflection of our rigorous commitment to responsible operations and environmental consciousness. Our strategy blends advanced sewage water treatment, zero liquid discharge technologies, and extensive rainwater harvesting, drastically curbing reliance on freshwater and maximizing internal reuse. By embedding a circular economy ethos, we ensure that each drop is recycled and repurposed. We work closely with communities on water body rejuvenation and watershed management, elevating rural resilience and proactive climate adaptation. Real-time digital water monitoring equips us to not just manage but continually optimize our water stewardship practices. Hindustan Zinc's journey to water positivity is not merely a milestone but a replicable blueprint for industrial resilience and responsible growth in water-challenged geographies.

Further, we have enhanced water recycling through the installation of zero liquid discharge and dry tailings plants, leading to a substantial reduction in freshwater consumption and improved water use efficiency. By lowering freshwater reliance and generating community water credits, Hindustan Zinc continues to lead responsible water management, ensuring long-term water security for both our operations and the communities we serve.

One notable example of industry-community synergy is our sewage treatment plant in Udai-pur, Rajasthan which treats and reuses municipal sewage water. Treated sewage accounts for 34 percent of the total water consumed in our operations, demonstrating a successful partnership between urban ecosystems and industry. Further underscoring our commitment to the community, we have established a groundwater recharge po-

tential exceeding 8.7 million cubic meters annually at Rampura Agucha Mine in Bhilwara, Rajasthan, significantly enhancing regional water security and supporting sustainable water management for the future. Hindustan Zinc's journey to water positivity is a scalable model of how industry can drive resilient, sustainable growth while securing vital water resources in water-scarce regions.

Q You launched EcoZen, India's first low-carbon zinc. What's been the response, and where does this go next?

EcoZen, Asia's first and the world's fourth low-carbon 'green' zinc, symbolizes our drive for innovation and sustainability. Produced with renewable energy and featuring a carbon footprint 75% lower than the global average, EcoZen is enabling leading global and domestic brands in automotive, infrastructure and consumer durables to decarbonize their supply chains. The response from customers has been overwhelmingly positive; many are eager to align with the credibility and sustainability credentials EcoZen offers their brands. Looking ahead, we are continuously expanding our product portfolio, exploring value-added alloys tailored for diverse industries seeking bespoke solutions.

Q What role does digitalisation or AI actually play in mining and smelting? Isn't this still a very physical industry?

At Hindustan Zinc, operational excellence is inseparable from digital transformation. We have integrated advanced automation, artificial intelligence and machine learning (AI/ML), and sophisticated digital control systems throughout our mines and smelters (metal production plant). From smart drilling empowered by real-time ore analytics to AI-driven predictive maintenance, digitalisation is boosting recovery rates, throughput, and safety standards. Drone-based mine surveying, autonomous fleet management, and solutions like the Zinc Freight Bazaar have streamlined our logistics and operations, driving cost efficiency and im-

proved customer service. Most importantly, these digital innovations attract top industry talent and foster a forward-thinking culture. Far from being constrained by traditional practices, our digitally enabled operations demonstrate how data and technology empower our teams to seamlessly oversee and optimize complex mining and smelting activities. This approach delivers smarter, safer and more agile performance, all from the comfort of their desks.

Q What's the story behind your value-added zinc products? Why do they matter?

Our value-added product (VAP) portfolio is foundational to India's critical sectors such as construction, infrastructure and electric vehicles. Through customer-focused innovation, we deliver zinc alloys designed for steel galvanizing and custom specifications, essential for building robust, enduring infrastructure and ensuring mobility safety. Products like Hindustan Zinc Die-Casting Alloy (HZDA 3 and HZDA 5) provide specialized anti-corrosion solutions for applications like automotive seat belts and sanitary fixtures where reliability is non-negotiable. With VAP products accounting for a significant share of our sales, we help realize India's Make-in-India goals, empowering industries that fuel the nation's growth. Our relentless research & development (R&D) focus ensures these offerings evolve in step with the changing needs of tomorrow's India.

Q How do you see Hindustan Zinc contributing to India's push for critical mineral security?

Hindustan Zinc plays a pivotal role in India's mineral security agenda, seamlessly aligning with the Atmanirbhar Bharat vision and National Mineral Policy. As the world's largest integrated zinc producer, we are actively expanding into rare earth elements and potash, which are critical for electronics, renewable energy, and food security. Our drive for domestic value addition, circular econo-

my practices, and local sourcing reduces import dependencies and strengthens India's economic resilience. Through strategic partnerships, policy advocacy and rigorous sustainability initiatives, we are setting new standards for responsible mineral operations and positioning India as a global hub for sustainable and secure metal supply chains in the era of green industrialization.

Q What's next for Hindustan Zinc in the next five years? Where are you placing your bets?

Hindustan Zinc's trajectory over the coming five years is shaped by a commitment to growth, inno-

vation, and sustainable leadership. We have earmarked ₹12,000 crore for strategic investments to double our zinc, lead, and silver capacity, underpinned by the development of a 250kt integrated smelter and forays into new mining zones. Concurrently, we are accelerating our investments in green technologies, broadening our metal portfolio, and unlocking new verticals in minerals. Strategic advances in digital leadership are also reinforcing efficiencies in logistics and operations. Each initiative is designed to secure our long-term position as a future-ready, sustainability-focused metals and mining leader, supporting India's nation-building and fostering global transformation. **CM**

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