



# The Thinking Behind the Tonnes

Our approach to innovation is anchored in advancing operational excellence while embedding sustainability across the value chain. Through focused investments in research and development, we are enhancing resource efficiency, reducing environmental impact and building future-ready capabilities that support responsible growth, strengthen resilience and create long-term value for all stakeholders.

### Material Issues Impacted

- ▾ Climate Change
- ▾ Integrated Technology and Digital Innovation

### Strategic Linkages

S6 Sustainable Operations Integration

### Stakeholder Associated with

Customers



### UN SDGs Impacted



## Key Highlights FY 2025-26

**₹ 6.21 crore**  
Spent on R&D

**₹ 491.46 crore**  
Invested towards sustainability

### Investing in R&D

Our R&D priorities are focused on beneficiation-led value creation, low-carbon mining, alternative fuels and efficient logistics to enhance resource utilisation, optimise costs and reduce environmental impact. A key initiative is the beneficiation of BHQ to produce high-grade iron ore, improving downstream efficiency, reducing coke consumption and enabling energy savings of up to 41% while also creating potential for carbon credit generation.

### Promoting Sustainability

To complement beneficiation, we are advancing R&D in sustainable logistics by deploying conveyor-based systems, including overland belt conveyors to replace diesel truck haulage. This transition is expected to lower emissions, reduce operating costs and enhance reliability and throughput, particularly when integrated with renewable energy sources. We are also participating in green hydrogen initiatives led by the Ministry of New and Renewable Energy in collaboration with leading research institutions, exploring hydrogen-based DRI technologies to reduce emissions intensity. In parallel, we are adopting alternative fuels such as biomass, including bamboo dust to partially substitute coal and lower carbon footprint. Additional innovations include waste-to-energy solutions such as dolochar utilisation, biogas generation and increased renewable energy integration. Together, these initiatives enhance energy efficiency, optimise costs and reinforce our commitment to building a sustainable and resilient operating model.



### Sustainable Mining

We have undertaken a range of in-house and collaborative R&D initiatives to advance sustainable mining and enhance environmental performance. A key study conducted with a reputed institution evaluated green interventions at Surjagarh, highlighting reduced fossil fuel consumption, lower emissions and improved efficiency, thereby validating our sustainable mining approach. In parallel, the in-house development of BHQ beneficiation has progressed successfully from pilot to commercial scale. We are also developing a carbon credit methodology to accurately measure and monetise emission reductions. At the Thriveni Rebuild Centre, diesel-based excavators are being re-engineered into electric machines, significantly lowering emissions. Collectively, these initiatives strengthen data-driven decision-making, support decarbonisation and reinforce our commitment to innovation-led, environmentally responsible growth.