

# Forging a Sustainable Future: ESG Integration in India's Precious Metals Refining Industry

India is witnessing a silent ESG revolution in the precious metals industry. The Bureau of Indian Standards (BIS) hallmarking, SEBI's ESG disclosure mandates, and India's participation in global green finance movements are driving refiners to think beyond the melting pot.

In an age of climate urgency, social accountability, and investor scrutiny, ESG—Environmental, Social, and Governance—has emerged as more than a compliance tool. For India's precious metal refiners, ESG is now a strategic priority, a competitive differentiator, and a critical enabler of long-term resilience.

As global supply chains demand ethical sourcing and responsible operations, Indian refiners—custodians of purity, value, and trust—stand at a pivotal crossroads. The challenge: to preserve the sanctity of gold, silver, and platinum, while ensuring our operations uplift communities, respect the planet, and uphold transparency. India aspires to become a global bullion hub, with initiatives like the International Bullion Exchange and the Gold Monetisation Scheme laying the groundwork. For this vision to succeed, Indian refiners must align economic ambition with ethical responsibility.

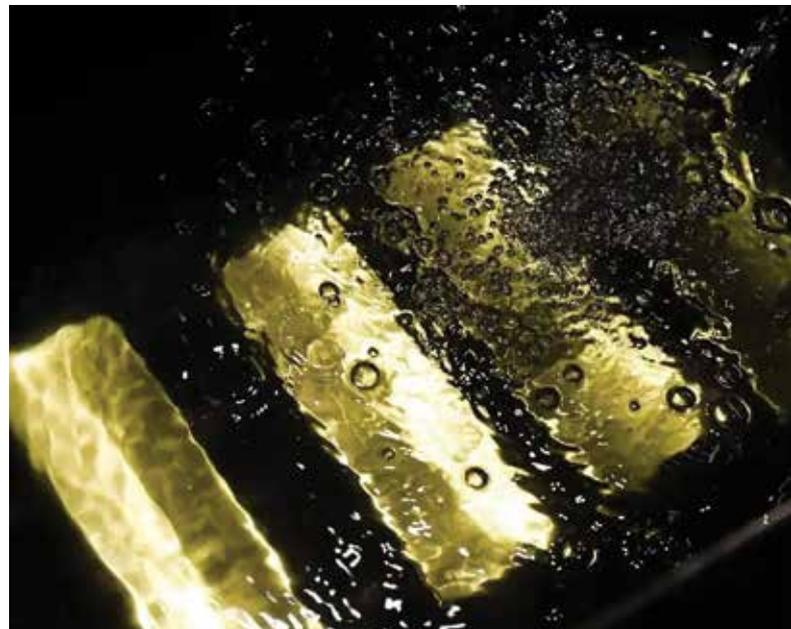
By embracing ESG, we can ensure that the gold we refine today does not tarnish the planet or our conscience tomorrow. It's time to go beyond refining metals and refine our values.

## 1. Environmental (E) Aspects

Precious metals refining—especially gold, silver, and platinum group metals (PGMs)—involves several processes that have significant environmental impacts. Indian refiners are increasingly under pressure from regulators, investors, and consumers to minimize these impacts.

### Key Environmental Concerns:

- **Energy Consumption:** Refining requires high temperatures and chemical processing, leading to significant energy use—often from fossil fuels.
- **Water Use and Effluent:** Water is used in acid-based processes and cooling systems. Wastewater may contain heavy metals, acids, and cyanide residues.
- **Air Emissions:** Refining releases particulates, sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NOx), and volatile organic compounds (VOCs).
- **Solid Waste:** Refining generates slag, tailings, and other hazardous residues.





**Best Practices and ESG Interventions:**

- **Adoption of Clean Technologies:** Use of electro-refining, pyro-metallurgy with emission controls, and chemical recovery systems.
- **Renewable Energy Integration:** Installation of solar panels, use of green power purchase agreements (PPAs), and RECs to lower carbon footprint.
- **Water Management:** Implementation of Effluent Treatment Plants (ETPs), Zero Liquid Discharge (ZLD) systems, and rainwater harvesting.
- **E-waste Recycling:** Extracting precious metals from urban waste (electronics, old jewellery) as part of a circular economy approach.
- **Environmental Compliance:** Alignment with the Ministry of Environment, Forest and Climate Change (MoEFCC), Central Pollution Control Board (CPCB), and State Pollution Control Boards (SPCBs) guidelines.

**2. Social (S) Aspects**

The social pillar of ESG focuses on how refining companies treat employees, contribute to society, and manage their supply chain responsibly. In India, the informal sector, artisanal miners abroad, and local communities are deeply intertwined with the precious metals value chain.

**Key Social Concerns:**

- **Labour Rights:** Health and safety, fair wages, and working conditions, especially for contract workers and informal sector participants.
- **Sourcing Ethics:** Risks of child labor, unsafe working conditions, and conflict financing in gold sourced from high-risk areas.
- **Community Impact:** Pollution, displacement, and lack of consultation with local communities during setting up of refining facilities.
- **Diversity and Inclusion:** Underrepresentation of women and marginalized communities in leadership and technical roles.

**Best Practices and ESG Interventions:**

- **Worker Welfare:** Implementing OHS (Occupational Health and Safety) programs, skill development, and benefits such as insurance and pensions.
- **Supply Chain Due Diligence:** Adopting OECD Due Diligence Guidance for Responsible Supply Chains of Minerals and implementing KYC and conflict-free sourcing policies.
- **Community Engagement:** CSR initiatives focused on education, water, sanitation, and livelihood generation in nearby communities.

- **Fair Trade & Artisanal Support:** Partnering with certified fair trade organizations and supporting responsible ASM (Artisanal and Small-scale Mining) gold initiatives abroad.
- **Employee Development:** Promoting diversity, training programs for upskilling, and inclusive hiring policies.

### 3. Governance (G) Aspects

Governance refers to how a company is managed and how it ensures compliance, transparency, and ethical decision-making. For Indian refiners, robust governance frameworks are crucial to managing reputational risk and gaining global market access.

#### Key Governance Concerns:

- **Traceability and Transparency:** Risk of sourcing conflict gold or money laundering through informal channels.
- **Anti-Corruption:** Exposure to illegal trading, under-invoicing, and bribery in procurement or licensing processes.
- **Regulatory Compliance:** Adhering to BIS hallmarking, SEBI guidelines, Companies Act, 2013, and international norms like LBMA and RJC.
- **Board Oversight:** Weak ESG oversight at the board level can lead to greenwashing and reactive decision-making.



#### Best Practices and ESG Interventions:

- **Responsible Sourcing Policies:** Formal policies, due diligence systems, and regular supplier audits to ensure ethical procurement.
- **ESG Reporting:** Disclosure aligned with SEBI's BRSR framework, GRI Standards, or SASB metrics.
- **Blockchain for Traceability:** Use of blockchain platforms for end-to-end metal tracking—from mine to market—ensuring authenticity and transparency.
- **Whistleblower Protection:** Establishing safe and confidential mechanisms for reporting ethical violations.
- **Board-Level ESG Committees:** Dedicated committees overseeing sustainability, risk, and compliance performance.

#### Emerging Trends in ESG for Indian Refiners:

- **LBMA Accreditation and Compliance:** A growing number of Indian refiners are aiming for LBMA Good Delivery status, which mandates rigorous ESG adherence.
- **Green Finance Access:** ESG-compliant refiners may access sustainable finance or green bonds through Indian banks and international investors.
- **Carbon Accounting:** Increased interest in GHG Scope 1, 2, and 3 emissions tracking and setting science-based targets.
- **AI and IoT in ESG Monitoring:** Use of smart sensors, AI analytics, and real-time dashboards for emissions, energy, and water use optimization.
- **Investor & Customer Expectations:** ESG credentials are increasingly influencing decisions by institutional investors, jewellery brands, and global supply chain partners.

## Conclusion

For India's precious metals refiners, ESG is more than a regulatory checkbox—it's a business imperative. As India emerges as a global bullion hub, the refiners who lead in sustainability, ethics, and governance will shape the future of the industry—ensuring that every gram of gold, silver, or platinum refined contributes not just to economic growth, but to a cleaner, fairer, and more responsible world.