Hard-to-Abate Industries

Source Metadata

Field	Value
source	cpi
source_version	GLCF 2025
source_id	CPI-IN-001
sector	Industry
subsector	Hard-to-Abate Industries
mitigation	Y
adaptation	N
last_checked	2026-05-26

CPI Definition & Scope

Hard-to-Abate Industries in CPI's GLCF framework tracks climate finance directed at decarbonizing heavy industrial sectors where emissions are intrinsically tied to chemical processes, not just energy use. CPI captures investment in low-carbon steel production (hydrogen direct reduction, electric arc furnaces), low-carbon cement and concrete (alternative clinker, carbon capture), green chemicals (electrification of crackers, bio-based feedstocks), and carbon capture, utilization and storage (CCUS) applied to industrial point sources. CPI notes that industry investment remains at low levels despite significant mitigation potential.

Subsectors & Examples

- **Low-Carbon Steel** — hydrogen DRI, electric arc furnaces, scrap-based production
- **Low-Carbon Cement** — alternative clinker chemistries, supplementary cementitious materials, CCS
- **Green Chemicals** — electric crackers, bio-based feedstocks, green methanol
- **Industrial CCS/CCUS** — carbon capture on cement kilns, steel furnaces, chemical plants
- **Aluminum Decarbonization** — inert anode smelting, renewable-powered production

Mitigation & Adaptation Classification

Hard-to-abate industries are classified as **mitigation** in CPI's framework. These sectors produce process emissions (CO2 from calcination in cement, CO2 from reduction in steel) that cannot be eliminated solely through energy switching, requiring fundamental process innovation. CPI tracks both direct process emission reductions and energy-related emission reductions in these industries.

LATAM Relevance

Latin America has significant heavy industry presence. Colombia's cement industry (Argos, Cemex operations) is a major emitter with growing interest in alternative fuels and CCS. Peru's mining and metals sector is a core economic driver where decarbonization is increasingly demanded by international buyers. Costa Rica has smaller industrial emissions but participates in regional circular economy initiatives. Brazil's steel industry is the largest in the region and a key target for hydrogen-based decarbonization.

Cleantech Taxonomy Crosswalk

Maps to Cleantech Taxonomy sector **IN** (Industry) for heavy industry decarbonization. Cross-references with **ES** (Energy Systems) for hydrogen supply and industrial electrification, and **XS** (Cross-Sectoral) for CCUS infrastructure and carbon markets.

Revisión #2
Creado 2026-05-27 03:38:48 UTC por Gideon Blaauw
Actualizado 2026-05-27 03:50:30 UTC por Gideon Blaauw