Waste (WA)

Waste management, circular economy, materials recovery

- CPI GLCF 2025 — Waste (WA) Index
- Solid Waste Management & Recycling
- Wastewater Treatment
- Waste-to-Energy

CPI GLCF 2025 — Waste (WA) Index

source	cpi
source_version	GLCF 2025
source_name	CPI GLCF 2025 — Waste (WA)
sector	WA
origo_nodes_mapped	TBD
last_verified	2026-05-26
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Description

CPI Global Landscape of Climate Finance 2025 coverage for: Waste management, circular economy. Populate with specific CPI sub-sector and activity nodes during Phase 0.

Cleantech Taxonomy Mapping Notes

[To be populated during Phase 1 schema alignment — document how this source node maps to Cleantech Taxonomy IDs, including convergences, divergences, and gaps.]


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Solid Waste Management & Recycling

Source Metadata

Field	Value
source	cpi
source_version	GLCF 2025
source_id	CPI-WA-001
sector	Waste
subsector	Solid Waste Management & Recycling
mitigation	Y
adaptation	N
last_checked	2026-05-26

CPI Definition & Scope

Solid Waste Management and Recycling in CPI's GLCF framework tracks climate finance directed at reducing greenhouse gas emissions from waste disposal and material recovery. CPI captures investment in sanitary landfills with methane capture, composting facilities, material recovery and recycling infrastructure, extended producer responsibility programs, and waste collection modernization. CPI notes that the waste sector has historically received low levels of climate finance despite its significant mitigation potential, particularly for methane reduction.

Subsectors & Examples

- **Landfill Methane Capture** — gas collection systems, landfill-to-energy, flaring
- **Recycling Infrastructure** — material recovery facilities, sorting technology, reverse logistics
- **Composting & Organics** — industrial composting, anaerobic digestion of organic waste
- **Waste Collection Modernization** — source separation programs, collection route optimization
- **Extended Producer Responsibility** — packaging take-back, e-waste recovery systems

Mitigation & Adaptation Classification

Solid waste management is classified as **mitigation** in CPI's framework. The primary benefit is methane emission reduction from avoided open dumping and landfill gas capture. Methane has 80x the warming potential of CO2 over 20 years, making waste management a high-impact mitigation opportunity tracked by CPI as part of the Global Methane Pledge framework.

LATAM Relevance

Waste management is a critical climate issue for Latin America where many cities still rely on open dumps. Colombia's Doña Juana landfill in Bogota and other major disposal sites are targets for methane capture investment. Peru's waste management sector is undergoing reform with new recycling mandates and formalization of waste picker cooperatives. Costa Rica's National Decarbonization Plan includes waste reduction targets. The region's large informal recycling sector creates opportunities for inclusive climate finance approaches.

Cleantech Taxonomy Crosswalk

Maps to Cleantech Taxonomy sector **WA** (Waste) for solid waste management. Cross-references with **ES** (Energy Systems) for waste-to-energy generation and **IN** (Industry) for recycled material inputs to manufacturing.

Wastewater Treatment

Source Metadata

Field	Value
source	cpi
source_version	GLCF 2025
source_id	CPI-WA-002
sector	Waste
subsector	Wastewater Treatment
mitigation	Y
adaptation	Y
last_checked	2026-05-26

CPI Definition & Scope

Wastewater Treatment in CPI's GLCF framework tracks climate finance directed at reducing emissions from wastewater management while improving water quality. CPI captures investment in energy-efficient treatment processes, biogas recovery from anaerobic digestion of sewage sludge, nutrient recovery (nitrogen, phosphorus), constructed wetlands and nature-based treatment solutions, and on-site treatment for industrial effluents. CPI groups this with the waste sector given the methane and nitrous oxide emissions from untreated or poorly treated wastewater.

Subsectors & Examples

- **Municipal Wastewater Treatment** — new treatment plants, process upgrades, tertiary treatment
- **Biogas Recovery** — anaerobic digesters at treatment plants, sludge-to-energy
- **Industrial Effluent Treatment** — sector-specific treatment for mining, food processing, textiles
- **Nature-Based Solutions** — constructed wetlands, treatment lagoons, bio-filtration
- **Water Reuse** — treated wastewater for irrigation, industrial reuse, aquifer recharge

Mitigation & Adaptation Classification

Wastewater treatment is classified as **dual-benefit** in CPI's framework. Mitigation benefits come from methane capture during treatment and reduced nitrous oxide emissions. Adaptation benefits arise from improved water quality, water reuse for drought resilience, and protection of ecosystems that provide climate adaptation services.

LATAM Relevance

Wastewater treatment coverage is a major gap in Latin America. Colombia treats only a fraction of its municipal wastewater, with major investment needed in secondary cities beyond Bogota and Medellin. Peru's Lima discharges partially treated wastewater into the Pacific, and its water-stressed coastal desert environment makes reuse critical. Costa Rica has improving but still incomplete wastewater treatment infrastructure. IDB and World Bank climate finance frequently targets wastewater projects in the region.

Cleantech Taxonomy Crosswalk

Maps to Cleantech Taxonomy sector **WA** (Waste) for wastewater. Cross-references with **WW** (Water) for integrated water management and **AF** (AFOLU) for treated water reuse in agriculture.

Waste-to-Energy

Source Metadata

Field	Value
source	cpi
source_version	GLCF 2025
source_id	CPI-WA-003
sector	Waste
subsector	Waste-to-Energy
mitigation	Y
adaptation	N
last_checked	2026-05-26

CPI Definition & Scope

Waste-to-Energy (WtE) in CPI's GLCF framework tracks climate finance directed at technologies that recover energy from waste streams that would otherwise decompose and release methane in landfills. CPI captures investment in incineration with energy recovery, gasification, pyrolysis, landfill gas-to-electricity, and biogas production from organic waste. CPI applies climate eligibility criteria requiring that WtE projects demonstrate net emission reductions compared to alternative waste disposal methods and avoid disincentivizing waste reduction and recycling.

Subsectors & Examples

- **Landfill Gas-to-Electricity** — methane capture and combustion for power generation
- **Anaerobic Digestion** — biogas from food waste, agricultural residues, sewage sludge
- **Thermal WtE** — incineration with combined heat and power, moving grate technology
- **Advanced Thermal** — gasification and pyrolysis of non-recyclable residual waste
- **Refuse-Derived Fuel (RDF)** — processing waste into fuel for cement kilns and industrial heat

Mitigation & Adaptation Classification

Waste-to-energy is classified as **mitigation** in CPI's framework. The mitigation benefit is twofold: avoided methane emissions from landfill decomposition, and displacement of fossil fuel-generated electricity or heat. CPI applies careful accounting to ensure that tracked WtE finance genuinely reduces net emissions rather than simply incinerating waste that could have been recycled.

LATAM Relevance

Waste-to-energy is a growing opportunity in Latin America as countries modernize waste management. Colombia has several landfill gas capture projects registered under carbon credit mechanisms, and cities are exploring larger WtE facilities. Peru's waste sector reforms create space for biogas and WtE investment, particularly for Lima's massive waste volumes. Costa Rica's focus on circular economy aligns with biogas from agricultural waste streams. Regional cement companies increasingly use RDF as an alternative fuel, creating market pull for waste processing.

Cleantech Taxonomy Crosswalk

Maps to Cleantech Taxonomy sector **WA** (Waste) for waste-to-energy. Cross-references with **ES** (Energy Systems) for biogas/biomass energy generation and **IN** (Industry) for RDF use in industrial processes.