Wastewater Treatment

Source Metadata

Field	Value
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sector	Waste
subsector	Wastewater Treatment
mitigation	Y
adaptation	Y
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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.

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