Waste-to-Energy

Source Metadata

Field	Value
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sector	Waste
subsector	Waste-to-Energy
mitigation	Y
adaptation	N
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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.

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