CT-EN-010 — Biomass & Biogas

origo_id	CT-EN-010
origo_label	Biomass & Biogas
sector	EN
source	origo
cpi_aligned	Renewable energy generation — bioenergy
eu_taxonomy_aligned	Partial — EU Taxonomy covers bioenergy under D35.11 with strict sustainability and GHG savings criteria
cbi_eligible	Y — Bioenergy criteria under CBI with feedstock sustainability requirements
iea_aligned	Y — IEA ETCS bioenergy (biogas and biomass power)
col_gf_sector	Energía
col_gf_activity	Generación de energía a partir de biomasa residual y biogás
col_gf_aligned	Y
col_ndc2030_aligned	Y — biomass waste-to-energy supports both mitigation and waste management NDC targets
col_sisclima_relevant	Y
col_ley2169	Y — Art. 7 renewable energy; Art. 3 mitigation
latam_colombia	Y
cth_clp_coverage	Y — 3 CLP companies in biomass valorisation and biogas production
cth_data_coverage	Y
schema_version	1.1
last_updated	2026-05-27

Description

Energy generation from biomass residues (agricultural, forestry, municipal waste) and biogas (anaerobic digestion of organic waste). Covers cogeneration (CHP), direct combustion, gasification, and anaerobic digestion. Colombia has abundant biomass resources from its agro-industrial sector, particularly palm oil residues, sugarcane bagasse, coffee pulp, and municipal organic waste.

Colombia Context

Colombia produces approximately 72 million tonnes of agricultural residues annually, with major streams from sugarcane (17M t bagasse), palm oil (12M t empty fruit bunches, POME), coffee (4M t pulp/mucilage), and rice (3M t husks). The sugar sector in Valle del Cauca already cogenerates approximately 400 MW from bagasse. Palm oil mills in Magdalena Medio, Meta, and Santander generate biogas from POME (Palm Oil Mill Effluent) with growing adoption of biodigester technology. Ley 2099 classifies biomass-to-energy as non-conventional renewable, granting full tax incentives. CREG regulates biogas injection into natural gas networks under Resolución 045 de 2022. MinAmbiente's NAMA (Nationally Appropriate Mitigation Action) for the palm sector promotes methane capture from POME. Municipal waste-to-energy is regulated under Ley 1715 and the Plan Nacional de Gestión Integral de Residuos Sólidos (PGIRS). TVC explicitly lists residual biomass energy as an eligible green activity.

EUDR Relevance

Direct EUDR relevance for palm oil residue-based biomass: palm oil is a core EUDR commodity (Regulation 2023/1115). While residue utilisation (empty fruit bunches, POME) does not directly constitute palm oil trade, EUDR due diligence applies to the originating plantation. Biomass from palm residues must demonstrate deforestation-free sourcing for the underlying palm commodity. CTH's EUDR data platform (data.cleantechhub.net) tracks geolocation hashes for palm supply chain traceability.

CTH Data Coverage

Three CLP cohort companies work in biomass: one in palm POME biodigestion, one in coffee pulp valorisation, and one in municipal organic waste biogas. Sustenttia diagnostics assess waste management and biomass utilisation in agro-industrial enterprises. REIN Hub data from Santander and Meta documents palm residue volumes and current disposal/valorisation practices in PDET territories.

Green Finance Alignment

TVC-aligned for residual biomass energy generation. CBI-eligible with feedstock sustainability verification (no purpose-grown energy crops without certification). EU Taxonomy alignment is partial — strict GHG savings thresholds (80% reduction vs. fossil comparator) and sustainability criteria for biomass sourcing under RED III. IDB Lab has funded biodigester pilot programs in Colombia's palm and livestock sectors.


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