CT-EN-005 — Grid Modernisation

origo_id	CT-EN-005
origo_label	Grid Modernisation
sector	EN
source	origo
cpi_aligned	Low-carbon electricity systems — transmission and distribution
eu_taxonomy_aligned	Y — NACE D35.12 transmission; D35.13 distribution of electricity
cbi_eligible	Y — Grid infrastructure enabling renewable integration under CBI criteria
iea_aligned	Y — IEA ETCS electricity networks and smart grids
col_gf_sector	Energía
col_gf_activity	Modernización y expansión de redes eléctricas para integración de renovables
col_gf_aligned	Y
col_ndc2030_aligned	Y — grid expansion is a prerequisite for achieving NDC renewable capacity targets
col_sisclima_relevant	Y
col_ley2169	Y — Art. 7 enabling infrastructure
latam_colombia	Y
cth_clp_coverage	N — grid infrastructure is beyond CLP SME scope; large utility domain
cth_data_coverage	N
schema_version	1.1
last_updated	2026-05-27

Description

Modernisation of electricity transmission and distribution networks, including smart grid technologies, advanced metering infrastructure (AMI), demand-side management, and grid digitalisation. In Colombia, grid modernisation is essential to accommodate the influx of variable renewables from La Guajira and Cesar into the Interconnected National System (SIN) operated by XM.

Colombia Context

XM operates Colombia's wholesale electricity market and system dispatch. UPME's Plan de Expansión de Transmisión 2024-2038 identifies over $5 billion in required grid investments, including the critical Colectora transmission line connecting La Guajira wind/solar to demand centers. CREG Resolución 015 de 2018 established the smart metering framework (AMI), targeting 75% smart meter penetration by 2030. The SIN serves approximately 98% of the population, but Zonas No Interconectadas (ZNI) require off-grid solutions. Grid losses average 13.5% nationally (up to 25% in Caribe region), representing a major efficiency opportunity. ISA (Interconexión Eléctrica S.A.) is the dominant transmission operator, with Grupo Energía Bogotá and Celsia as key distribution players.

EUDR Relevance

This node has no direct EUDR commodity relevance.

CTH Data Coverage

Grid modernisation falls outside the CLP cohort scope (large utility infrastructure). CTH monitors grid expansion via UPME and XM public data for market intelligence purposes. No direct Sustenttia or REIN Hub data on grid assets.

Green Finance Alignment

TVC-aligned for grid infrastructure supporting renewable integration. CBI-eligible under enabling infrastructure criteria. EU Taxonomy aligned under NACE D35.12 and D35.13 with lifecycle emissions thresholds for grid infrastructure. IDB and World Bank have been primary financiers for Colombia grid modernisation, including the ongoing $500M IDB-backed grid strengthening program.


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