

# Heating, Cooling & HVAC

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## Source Metadata

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Field	Value
source	cpi
source_version	GLCF 2025
source_id	CPI-BU-003
sector	Buildings & Infrastructure
subsector	Heating, Cooling & HVAC
mitigation	Y
adaptation	Y
last_checked	2026-05-26

## CPI Definition & Scope

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Heating, Cooling and HVAC in CPI's GLCF framework tracks climate finance directed at decarbonizing thermal comfort systems in buildings. The 2025 edition added heat pumps as a specifically tracked energy transition technology. CPI captures investment in electric heat pumps (air-source, ground-source, water-source), district heating and cooling networks, efficient air conditioning with low-GWP refrigerants, and solar thermal systems. This subsector addresses both space heating/cooling and domestic hot water production.

## Subsectors & Examples

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- **Heat Pumps** — air-source, ground-source, water-source heat pumps for heating and cooling
- **District Energy** — district heating networks, district cooling systems, combined heat and power
- **Efficient Cooling** — high-efficiency air conditioning, low-GWP refrigerant systems
- **Solar Thermal** — solar water heaters, solar-assisted HVAC, solar cooling
- **Natural Refrigerants** — CO<sub>2</sub>, ammonia, and hydrocarbon-based cooling systems

## Mitigation & Adaptation Classification

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Heating, cooling and HVAC is classified as **dual-benefit** in CPI's framework. Mitigation comes from electrification of heating (replacing gas/oil boilers with heat pumps) and improving cooling efficiency. Adaptation is critical

because rising temperatures from climate change are driving exponential growth in cooling demand, making efficient and accessible cooling a direct adaptation measure for protecting human health and productivity.

# LATAM Relevance

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Cooling is the dominant HVAC concern in tropical Latin America and represents a rapidly growing source of electricity demand and emissions. Colombia's Caribbean coast cities (Barranquilla, Cartagena) face extreme heat that drives air conditioning demand. Peru's coastal cities are experiencing rising temperatures with growing cooling needs. Costa Rica's tropical climate makes efficient cooling essential. The Kigali Amendment to the Montreal Protocol, which phases down HFC refrigerants, creates both regulatory and investment momentum for low-GWP cooling in the region.

# Cleantech Taxonomy Crosswalk

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Maps to Cleantech Taxonomy sector **BU** (Buildings) for HVAC systems. Cross-references with **ES** (Energy Systems) for heat pump electricity integration and **IN** (Industry) for industrial heat processes.

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