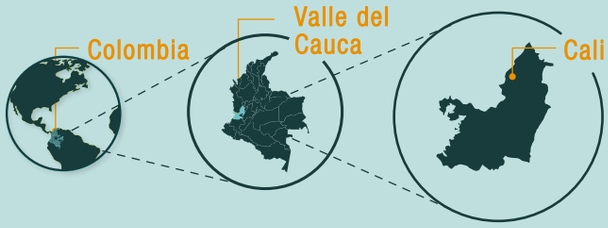
TECHNICAL AND FINANCIAL FEASIBILITY ANALYSIS OF AN ENERGY DISTRICT PROJECT

AT "DIAN" FACILITIES IN CALI, COLOMBIA

DISTRITOS TÉRMICOS
COLOMBIA



GENERAL DESCRIPTION/BASELINE SCENARIO

The "DIAN Customs" building has a centralized cooling system with a chiller and multiple direct expansion systems using HFC 410A. The centralized chilled water system has 20TR capacity, and 136 TR capacity are provided with mini split systems.

The "DIAN Taxes" building has a centralized cooling system with a chiller and multiple direct expansion systems using HFC 410A. An installed capacity of 90 TR in the centralized system, and 95 TR in independent systems, for a total of 185 TR.

Equipment works with a low load factor, between 30 and 35%. Some of the systems are obsolete and others are not accessible for maintenance. The assessment study recommends an immediate replacement of the current systems.

COOLING AS A SERVICE (CAAS) PROJECT IN PUBLIC INSTITUTION

Energy District service end-users: Two office buildings of national public institutions:

- "DIAN Customs" building.
- "DIAN Taxes" building.

Energy District Application: Outsourcing business model for thermal energy services in two institutional buildings of a national public institution – Cooling as a Service (CaaS).

Type of Energy District project: Cooling as a Service solution in existing buildings (brown-field).

Energy District Status: Report presented to DIAN. Currently under analysis.

Proposed Energy District scenario: Improve energy efficiency of the chilled water plant in both buildings, 122 TR for "DIAN Taxes" building and 137 TR for "DIAN Customs" building.

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PROJECT BENEFITS

Environmental Benefits: The project could have a GHG emissions reduction of 23% for the "DIAN Customs" building and 37% for the "DIAN Taxes" building. In both cases, a 10% saving in the cost per unit of cooling energy is estimated.

ECONOMIC INDICATORS

- CAPEX for the developer: COP $2,248 million (USD $562.000) for the "DIAN Customs" building and COP $2,086 million (USD $ 521,000) for the "DIAN Taxes" building.
- The study presents economic viability for a scenario of 10 years of operation of the outsourced cooling service business model with a 10% cost-savings for DIAN.

This generates points of analysis regarding the current capacity of public companies to stablish contracts only during administrative terms much shorter than 10 years.

*COP: Colombian Pesos

PROJECT SWOT ANALYSIS

Strengths: DIAN is aware about the need of replacing the cooling systems.

Weaknesses: There is no current solution to short term CaaS contracting by public institutions. Private developers may not be encouraged to present commercial proposals.

Threats/Challenges: Consolidate the contracting model between a cooling service outsourced operator and the public institution, to break the barrier of short-term budget periods.

Opportunities: 20 cooling service provider companies interested in the project (8 of them provided information to be part of a public bidding process), which guarantees the viability of the service applied to public institutions.

Three business model alternatives for DIAN:

1. Partnership with a public service company that is already a supplier.
2. Inclusion of a third-party for high-consumption private clients to reduce contractual risk.
3. General work to adjust the efficient procurement policy for public entities at national level in Colombia.

NORMATIVE FRAMEWORK

The study produced the standard documentation for the public office to develop its bidding process, and formats for public procurement bidding under Law 80 and its decrees.

NEXT STEPS

Support and encourage DIAN and potential developers to identify legally and administrative feasible contractual models for the institution.

CONTACT INFORMATION

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