Part I: Project Information

GEF ID
10917

Project Type
FSP

Type of Trust Fund
GET

CBIT/NGI
CBIT **No**
NGI **No**

Project Title
Energy Efficiency for the Transition to Carbon Neutral Cities in Colombia

Countries
Colombia

Agency(ies)
CAF-CAF-GEF-035, IADB-IDB-000

Other Executing Partner(s)
Colombian Sustainable Construction Council (CCCS)

Executing Partner Type
CSO

GEF Focal Area
Climate Change

Sector
Energy Efficiency

Taxonomy

Focal Areas, Climate Change, Climate Change Mitigation, Energy Efficiency, Influencing models, Convene multi-stakeholder alliances, Transform policy and regulatory environments, Strengthen institutional capacity and decision-making, Stakeholders, Civil Society, Academia, Community Based Organization, Non-Governmental Organization, Type of Engagement, Participation, Partnership, Consultation, Information Dissemination, Indigenous Peoples, Private Sector, Financial intermediaries and market facilitators, SMEs, Individuals/Entrepreneurs, Communications, Public Campaigns, Awareness Raising, Behavior change, Education, Gender Equality, Gender Mainstreaming, Gender-sensitive indicators, Beneficiaries, Sex-disaggregated indicators, Gender results areas, Participation and leadership, Access to benefits and services, Knowledge Generation and Exchange, Capacity Development, Capacity, Knowledge and Research, Knowledge Generation, Workshop, Learning, Theory of change, Adaptive management, Indicators to measure change, Innovation

Rio Markers

Climate Change Mitigation

Principal Objective 2

Climate Change Adaptation

No Contribution 0

Biodiversity

No Contribution 0

Land Degradation

No Contribution 0

Submission Date

10/31/2023

Expected Implementation Start

8/30/2024

Expected Completion Date

8/30/2029

Duration

60In Months

Agency Fee($)

714,162.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CCM-1-1	Promote innovation and technology transfer for sustainable energy breakthroughs for decentralized power with energy storage.	GET	1,983,784.00	15,910,593.00
CCM-1-3	Promote innovation and technology transfer for sustainable energy breakthroughs for accelerating energy efficiency adoption.	GET	5,951,351.00	47,731,769.00
		Total Project Cost($)	**7,935,135.00**	**63,642,362.00**

B. Project description summary

Project Objective

Contribute to a reduction of CO2 emissions by increasing energy efficiency in the construction sector in Barranquilla, Cali, and Pasto through the development of actions that involve the different stages of the life cycle of buildings and interventions in public space.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 1: Governance for Energy Efficiency in Buildings and Public Spaces	Technical Assistance	Outcome 1.1: Capacity of national and local institutions strengthened with technical, normative, and methodological tools to implement strategies for enhanced energy efficiency in buildings and public spaces. Indicators: *# And frequency of verification reports on implementation of standards and protocols for energy efficient buildings and public spaces* **Target**: *3 annually by government*	Output 1.1.1: National standard developed and adopted for energy efficiency in buildings and public spaces. Output 1.1.2: Monitoring, reporting, and verification mechanism to guarantee the implementation of the norms, standards and protocols for energy efficient buildings and public spaces. Output 1.1.3: Plans for energy efficient buildings and public space in Barranquilla, Cali, and Pasto formulated and under implementation.	GET	1,294,647.00	9,614,563.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
		3 annually by the private sector *# Of public and private institutions that have institutionalized the national standard for energy efficiency* **Target**:	Output 1.1.4: Capacity Building Program inclusive of technical assistance and training for the implementation of energy efficient buildings, public space and green infrastructure developed and implemented.			
		At least 3 public *At least 3 private* *# Of financing mechanisms for the replication of project results* **Target**: *2 financing mechanisms*	Output 1.1.5: Virtual platform for the evaluation of projects, works or activities of energy efficient buildings in public space designed and implemented. Output 1.1.6: Financing strategy for energy efficiency projects with both public			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
			resources and financial mechanisms through a triple alliance between the National Government, the construction sector, and the financial sector.			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 2a: Pilots of Energy Efficient Buildings and Public Spaces	Technical Assistance	Outcome 2.1: GHG emissions reduced, and improved energy efficiency associated with buildings and public spaces in the project intervention areas. **Indicators**: *tCO2-e reduced or avoided in energy efficient buildings and public spaces by 2030.* **Target**: *1,541,374* *% Reduction in GHG emissions by energy efficient buildings because of project interventions* **Target**: *40%*	(TA) Output 2.1.1: Design of (9) projects (in phase I Profile or in phase II Pre-feasibility), on new energy efficient buildings and renovations in public spaces in Barranquilla, Cali, and Pasto.	GET	565,304.00	4,562,761.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 2b: Project Management, Dissemination, and Knowledge Management	Investment	Outcome 2.1: GHG emissions reduced, and improved energy efficiency associated with buildings and public spaces in the project intervention areas. Indicators: *tCO2-e reduced or avoided in energy efficient buildings and public spaces by 2030.* Target: *1,541,374* *% Reduction in GHG emissions by energy efficient buildings because of project interventions*	(INV) Output 2.1.2: Projects implemented to demonstrate sustainable energy intervention model in public spaces in Barranquilla, Cali, and Pasto and in 11 additional cities in Colombia. (INV) Output 2.1.3: Three (3) co-financed pilot projects to demonstrate energy efficient buildings in Barranquilla, Cali, and Pasto	GET	4,933,271.00	41,736,186.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
		Target: *40%*				

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 3: Project Management, Dissemination, and Knowledge Management	Technical Assistance	Outcome 3.1: Informed and adaptive project management *# Of PIRs that reflect project performance and lessons learned* *# Of annual reflection meetings to track progress against work plan and results framework* Target: *5 PIRs* *4 Annual Performance Meetings* Outcome 3.2: Knowledge Management communications and dissemination *# Of Knowledge*	Output 3.1.1: Project M&E plan implemented and PIRs developed and completed. Output 3.1.2.: Annual Project Performance Meeting with stakeholders to track progress against work plan and results framework for effective adaptive management. Output 3.2.1: Cross-sectoral communication strategy and knowledge products developed (web page, podcasts, social media, webinar, information-sharing events, workshops).	GET	764,049.00	5,083,804.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
		Management (KM) strategies developed and implemented. *# Of exchange programs* Target: *1 KM Strategy implemented.* *At least 4 exchange programs*	Output 3.2.2: Exchange visits to promote upscaling of project results and lessons learned across other cities of Colombia, and internationally where feasible.			
				Sub Total ($)	**7,557,271.00**	**60,997,314.00**

Project Management Cost (PMC)

GET	377,864.00	2,645,048.00
Sub Total($)	**377,864.00**	**2,645,048.00**
Total Project Cost($)	**7,935,135.00**	**63,642,362.00**

Please provide justification

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Ministry of Environment and Sustainable Development	In-kind	Recurrent expenditures	67,080.00
Recipient Country Government	Pasto Municipal Government	Public Investment	Investment mobilized	2,675,000.00
Recipient Country Government	Cali Municipal Government	Public Investment	Investment mobilized	10,318,991.00
Recipient Country Government	EMCALI	Public Investment	Investment mobilized	2,604,479.00
Recipient Country Government	Barranquilla Municipal Government	Public Investment	Investment mobilized	25,601,812.00
Civil Society Organization	Colombia Green Building Council	In-kind	Recurrent expenditures	375,000.00
GEF Agency	Development Bank of Latin America - CAF	Loans	Investment mobilized	2,000,000.00
GEF Agency	Inter-American Development Bank - IDB	Loans	Investment mobilized	20,000,000.00
			Total Co-Financing($)	**63,642,362.00**

Describe how any "Investment Mobilized" was identified

Projects under the BiodiverCiudades initiative will complement this GEF project and are considered counterpart by the local governments of the 3 beneficiary cities: Barranquilla, Cali, and Pasto. The resources of these counterparts are public investment, except for the loan made by the IDB to the city of Barranquilla for the Urban BiodiverCity and Equity Program in Barranquilla, which aims to promote the sustainable use of strategic ecosystems; increase equitable access to public spaces and community centres with a focus on social inclusion; and promote the integration of the migrant and vulnerable host population in Barranquilla. New co-financing from the Municipal Government of Cali includes upcoming public investments, mostly for the acquisition of land for sustainable and energy efficient social housing construction projects, and the installation of lighting and smart infrastructure based on renewable energies

for the Pance Environmental Park. The Cali Municipality Companies (EMCALI) co-financing will cover studies for the development of characterization, prioritization and detailed engineering studies for the implementation of the Sustainable Homes project, and to cover acquisition, installation, and start-up costs. The CAF 2MM co-financing loan will be executed through energy efficiency credit lines from demand oriented to buildings and urban services in Colombia. The co-financing resources initially described in the PIF have changed compared to the co-financing reported in PRODOC, mainly due to the change of the city benefiting from the project. Initially, the cities of Barranquilla, Pasto and Monter?a had been selected; however, the latter city was replaced by Cali following a review of the project carried out by the new administration of the incoming National Government. On August 7, 2022, Colombia began a new period of government led by the President of the Republic, Dr. Gustavo Petro Urrego, whose roadmap for the next four years in the country focuses on the current National Development Plan PND 2022-2024 ?Colombia World Power of Life?. With this new period, a new administration was also initiated within the Ministry of Environment and Sustainable Development. This change was accompanied by a splicing and revision of projects that had been carried out by the previous administration. Among these projects was GEF 7: Energy Efficiency for the Transition to Carbon Neutral Cities in Colombia. One of the recommendations made by the new Deputy Minister of Environmental Policy and Standardization of the Ministry of the Environment, was the review of the cities benefiting from the GEF project, so that their selection could be validated on the basis of technical criteria that included the reduction of emissions achieved by each counterpart project, the representativeness of the regions mentioned in the climate classification of Resolution 549 of 2015, where specific considerations on energy efficiency are made for each type of climate in the country (Humid, Dry, Temperate or Cold), a census of buildings in each city and developments that cities are taking on projects with certifications in sustainable construction. For this new technical analysis, the list of cities previously analysed during the elaboration phase of the PIF was considered, and new cities that have been leaders at the national level on issues of energy efficiency and sustainable construction were included. The result of this analysis was the prioritisation and selection of Barranquilla, Pasto and Cali; therefore, the counterpart and co-financing projects had to be adjusted according to this change. In this case, the co-financing projects identified and prioritised by Cali total USD 10,389,991. Also, another change in the counterpart is due to projects for Pasto. The same city decided to select another co-financing which is now USD 2,675,000.

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
CAF	GET	Colombia	Climate Change	CC STAR Allocation	6,122,786	551,051	6,673,837.00
IADB	GET	Colombia	Climate Change	CC STAR Allocation	1,812,349	163,111	1,975,460.00
			Total Grant Resources($)		**7,935,135.00**	**714,162.00**	**8,649,297.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments?**No**

Includes reflow to GEF?**No**

F. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount ($)

137,614

PPG Agency Fee ($)

12,386

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
CAF	GET	Colombia	Climate Change	CC STAR Allocation	137,614	12,386	**150,000.00**
			Total Project Costs($)		**137,614.00**	**12,386.00**	**150,000.00**

Core Indicators

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)	51998	55808	0	0
Expected metric tons of CO?e (indirect)	1184355	1485565	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)				
Expected metric tons of CO?e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)	51,998	55,808		
Expected metric tons of CO?e (indirect)	1,184,355	1,485,565		
Anticipated start year of accounting	2023	2023		
Duration of accounting	20	20		

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	992,617	2,043,008		
Male	913,535	1,820,620		
Total	1906152	3863628	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

For the calculation of the reduction of greenhouse gas emissions of the GEF project "Energy Efficiency for the Transition to Carbon Neutral Cities in Colombia ", the following considerations were used: ? The project implementation period is 5 years between 2022 and 2026. ? The capitalization period for each of the project activities is 15 years for the sectorial mitigation sectors, to complete a total calculation time of 20 years. ? In the case of housing projects, all types of houses were considered for the calculation. OUTPUT 2.1.2 ENERGY EFFICIENCY BUILDINGS IN BARRANQUILLA, CALI, AND PASTO AND 11 ADDITIONAL CITIES IN COLOMBIA. Within the framework of the project activities, the activities under the output 2.1.2 are the activities that will produce most of the GHG emissions reductions, therefore, an important amount of the resources will cover these activities. It is planned to directly support the adoption of efficient central and decentralized systems for energy and water use in 6,615 new households in Barranquilla, Cali, and Pasto, or 3046, 3319 and 250 households correspondingly, under the guidelines of resolution 0549 of 2015. Additionally, and since the implementation of the resolution 0549 will be nationwide, all the 11 additional cities that are also part of the Biodiverciudades Initiative, are also considered for the calculation but as an indirect GHG mitigation, with a total of 31,575 households. The calculation of the emissions mitigation baseline was made based on the projections of resolution 0549 of 2015 for new buildings, however, in the case of existing buildings, given that the resolution to date does not contemplate them, there is a possibility to aim for higher goals. OUTPUT 2.1.3 ? PROJECTS TO DEMONSTRATE THE SUSTAINABLE ENERGY INTERVENTION MODEL IN PUBLIC SPACES IN BARRANQUILLA, CALI, PASTO AND IN 11 ADDITIONAL CITIES IN COLOMBIA. The calculations correspond to the implementation of solar energy that will serve to supply a part of the electricity demand in public spaces, but

it will also have a small percentage of energy generation that could be used to supply energy to electric vehicle charging systems. Batteries are also considered to be used as backup to these systems, the use of batteries will support the power supply for night lighting, as is the case in parks and other public spaces. The following considerations apply to all photovoltaic system designs described below: ? The calculations of all the systems are made in a period of 17 years, assuming these projects will be implemented 3 years after the GEF implementation begins. ? For all the period until 2041, an emission factor of the Colombian grid published by UPME (Unidad de Planeaci?n Minero energ?tica) is assumed equal to the average for the period between 2017 and 2020. Additionally, some photovoltaic installations will be calculated in the cities, to comply with laws 1715 of 2014 and 1931 of 2018. With these regulations, energy efficiency and the installation of renewable energy in buildings and public spaces are mandatory. These installations will report additional indirect GHG reductions. Calculations are summarized below, and a description of the assumptions, considerations, and methodologies used is presented in the Technical Note in Annex K and the respective calculations in Excel are presented in Annex L as a separate file. Mitigation Action 6.2 Emissions avoided.(20 years) (metric tons of CO2e) Project Output / Mitigation Activity // Direct / Indirect Output 2.1.2: energy efficiency buildings in Barranquilla, Cali, Pasto and 11 additional cities / Energy efficiency and water use according to Resolution 0549 /2015 // 52,124 / 1,065,253 Output 2.1.3 ? projects to demonstrate the sustainable energy intervention model in public spaces in Barranquilla, Cali, Pasto and 11 additional cities. / Renewable energy, energy efficiency. // 3,684 / 420,312 55,808 / 1,485,565 TOTAL 1,541,374 The nature of this public project (public buildings and public spaces) will result in direct benefits to the general populace of targeted cities with a total of 1,820,620 men and 2,043,008 women, consistent with the most recent population census. The project assumes that the general populace will benefit directly, since project interventions will target public buildings and public spaces.

Part II. Project Justification

1a. Project Description

describe any changes in alignment with the project design with the original pif

Table 1. Changes from PIF

TEXT IN PIF	TEXT in CEO ENDORSEMENT REQUEST	REASON FOR CHANGE
Executing Agency. Ministry of Environment and Sustainable Development Colombian Sustainable Construction Council (CCCS)	Executing Agency. Colombian Sustainable Construction Council (CCCS)	The Ministry of Environment and Sustainable Development will only accompany CCCS in decision-making processes and in the role of Chairperson of the Project Steering Committee. The daily operational execution of the project will be by the CCCS.
Project Objective: Contribute to a reduction of CO_2 emissions by increasing energy efficiency in the construction sector in Barranquilla, **Monteria,** and Pasto through the development of actions that involve the different stages of the life cycle of buildings and interventions in public space.	**Project Objective:** Contribute to a reduction of CO_2 emissions by increasing energy efficiency in the construction sector in Barranquilla, **Cali**, and Pasto through the development of actions that involve the different stages of the life cycle of buildings and interventions in public space.	The City of Monteria has been replaced by the City of Cali, based on a decision made by the Government of Colombia.

Output 1.1.3: Plans for energy efficient buildings and public space in Barranquilla, **Monteria**, and Pasto formulated and under implementation.	Output 1.1.3: Plans for energy efficient buildings and public space in Barranquilla, **Cali**, and Pasto formulated and under implementation.	The Ministry of Environment and Sustainable Development of Colombia validated the selection of the three cities proposed in the PIF, based on technical criteria that included, representativeness of the regions that are mentioned in the climate classification of Resolution 549 of 2015 where specific considerations are made on energy efficiency for each type of climate of the country (warm humid, warm dry, temperate or cold), census of buildings in each city, and development carried out by cities with projects with certifications in sustainable construction. In this regard, Cali has more than 30, while Monteria has less than 10, providing Cali with a better enabling baseline and coherence with the objectives of the GEF project. The result of this validation process was the prioritization and selection of Barranquilla, Pasto, and Cali as the cities to benefit and where the GEF project will intervene. Barranquilla and Pasto were already prioritized within the PIF, and Cali was the new city that was included in the project, instead of Monteria.
(TA) Output 2.1.1: Design of (6) projects (in phase I Profile or in phase II Pre-feasibility), on new energy efficient buildings and renovations in public spaces in Barranquilla, **Monteria**, and Pasto.	**(TA)** Output 2.1.1: Design of **(9)** projects (in phase I Profile or in phase II Pre-feasibility), on new energy efficient buildings and renovations in public spaces in Barranquilla, **Cali**, and Pasto.	Consultations with the municipalities of the three target cities during the PPG resulted in 9 projects on new energy efficient buildings and renovations in public spaces instead of 6 as follows: 2 in Baranquilla, 4 in Cali, and 3 in Pasto.

The project will support the adoption of efficient central and decentralized systems for energy and water use in 6,024 new households (public and private) in Barranquilla, **Monteria**, and Pasto, or 3,044, 1,696 and 1,284 households correspondingly. It is assumed that after the project finishes its 5-year implementation period, the project will be able to influence indirectly a percentage as minimum the double (40%) in the rest of the future houses to be delivered in each of the cities for the next 15 years.	The project will support the adoption of efficient central and decentralized systems for the use of energy and water in **6,715** homes (public and private) in Barranquilla, Cali, and Pasto, or **3,046, 3,419** and **250** homes respectively. It is assumed that after the project ends its execution period of 5 years, the project will be able to indirectly influence a percentage of at least double **(44%)** in the rest of the future homes to be delivered in each of the cities for the next 15 years.	During the PPG the specific circumstances on the ground in each city, the change from Monteria to Cali, and details of pilot projects in each city resulted in a different distribution of houses per city and the total number of households to benefit. The change of number of households to benefit from 6,024 to 6,715 resulted in a slight increase in the percentage from 20% to 22%.

TA) Output 2.1.3: Projects implemented to demonstrate sustainable energy intervention model in public spaces in Barranquilla, Monteria, and Pasto and in 11 additional cities in Colombia.	**TA)** Output 2.1.3: Projects implemented to demonstrate sustainable energy intervention model in public spaces in Barranquilla, Cali, and Pasto and in 11 additional cities in Colombia. Note: The initial investment of the project only contemplates building public space or intervening in social housing in the 3 cities of Barranquilla, Cali, and Pasto.	Note was added to clarify that the demonstration of sustainable energy intervention in 11 additional cities will occur post-project.
Greenhouse Gas Emissions Mitigated (metric tons of CO2e) Total: 1,236,354 Direct: 51,998 Indirect: 1,184,355	**Greenhouse Gas Emissions Mitigated** (metric tons of CO2e) **Total: 1,541,374** Direct: 55,808 Indirect: 1,485,565	With the inclusion of Cali in the project, the addition of 3 more pilot projects, and more specific details on the characteristics of each pilot defined during the PPG, the final calculations revealed an increase in the value for the Core Indicator from the amount originally proposed in the PIF.
Number of **direct beneficiaries disaggregated by gender** as co-benefit of GEF investment. Men: 913,535 Women: 992,617	Number of **direct beneficiaries disaggregated by gender** as co-benefit of GEF investment. Men: **1,820,620** Women: **2,043,008**	With the inclusion of Cali in the project, the total number of beneficiaries has substantially increased, with more women benefitting than men.

Total co-financing: US$100,905,560	Total co-financing: USD 63,642,362	. Substantial text has been added to explain the reduction in co-financing in the Section "Describe how any Investment Mobilized was identified?.

1a. ***Project Description*****.**

National Context for Energy Efficiency in Colombia

The residential, public, and commercial sectors can be considered as the sectors with the highest impact and relevance in terms of energy efficiency in Colombia. According to the Colombian Energy Balance (BECO), these sectors have a final energy consumption that represents approximately 25% of final energy consumption nationwide. 44% of this energy corresponds to electricity from the National Interconnected System, 28% to firewood, 21% to natural gas and 6% to liquefied petroleum gas. Building construction in Colombia is responsible for approximately 30% of global energy consumption and is one of the main generators of greenhouse gas (GHG) emissions.

The country for more than thirty years has been a leader in the development of bioclimatic projects with very significant achievements. Recently the awareness of both individuals and companies of the importance of minimizing the environmental impact of the sector and of contributing to the international environmental and sustainable development commitments acquired by the country has grown.

Energy is an essential resource for the construction of buildings and public spaces in Colombia. A general look at the energy sector reflects the productive and economic transformation that the country has undergone in the last fifty years. According to the National Energy Plan 2020-2050, the country has almost doubled its population from 1975 to 2019, from 24 million to almost 49 million inhabitants. In line with this trend and with the productive and economic transformation of the country, final energy consumption in this same period has also almost doubled, from 728 PJ (Petajoule) to 1,346 PJ. (UPME, 2020). The country has policies, norms, guidelines, and programs that help transform the energy matrix into a more sustainable, resilient, equitable and accessible one, in line with international commitments.

The construction of buildings has played a fundamental role in the final consumption of energy in the country for several years. It is important to highlight that between 1975 and 2019 the only sector that has

a considerable decrease is the residential sector, going from being the most energy-intensive subsector to considerably reducing its energy consumption, mainly due to the substitution of traditional low-efficiency fuels such as bagasse and firewood, by fuels, that are more efficient such as electricity and natural gas. The above shows how consumer habits and technologies can be critical drivers for transformational change.

According to Strategy 2050, electricity is the main energy source with which carbon-neutrality can be achieved if it is supplied in a clean way. For this, the country must use its water resources for generation up to its technical capacity and the remaining energy must be obtained from renewable sources such as solar and wind, among others. Both residential and commercial buildings, as well as the industrial sector, will play a very important role in electricity consumption in 2050. It is urgent to implement strategies to have a clean energy matrix, in addition to implementing energy efficiency strategies in the sector (Government of Colombia, 2021).

According to the National Energy Plan 2020-2050, the residential sector for the year 2018 represented 20% of the final energy consumption in the country. For the residential sector, cooking has a weight of 68% and cooling 15%, followed by other activities such as the use of television, lighting, washing machines and water heating. The tertiary sector represents 5% of final energy consumption in the country, and its activities with the most intense uses are lighting, refrigeration, and the use of indirect heat (UPME, 2020). Although the large energy consumption associated with buildings occurs in the processes of extraction, manufacture, and transport of materials, and during their operation, there are significant consumption that occurs during the construction phase.

The main energy efficiency measures implemented in construction of buildings according to surveyed developers are the shutdown of equipment when there is no use and the awareness of construction employees to avoid wasting energy. There are important changes with respect to the expectation of implementation of efficiency measures in construction in five years. It is expected to increase the implementation of all measures, however, the main priorities of energy efficiency programs will focus on improving the efficiency of equipment and the use of LED lighting. On the other hand, about the use of alternative energies at the construction level, only 11% of the surveyed builders and developers currently use them in all their works and 15% in some of them. However, this percentage is expected to change significantly in five years with 41% of those surveyed who consider that renewable energies will be part of all the works and 30% that some of them will be part.

The main energy consumption that a building has during its operation largely depends on the decisions made during design and construction.

? At the residential level, the main efficiency measures that are being implemented are natural lighting, natural ventilation, the use of LED lights and the orientation of the project in relation to the sun. Which are mostly passive and depend on a good architectural design.

? In the case of commercial and institutional projects, the same measures stand out except for the orientation of the project in relation to the sun, however, the windows with adequate characteristics of thermal transmission, occupancy sensors for lighting and equipment for ventilation and air conditioning are added. efficient. In other words, passive measures are complemented by a greater number of active measures.

? Except for the use of efficient ventilation and air conditioning equipment, hotel projects have a very similar behavior to commercial and institutional projects.

? In industrial projects the use of LED luminaires stands out, however, the other efficiency measures are implemented to a lesser extent.

? An increase in the implementation of all efficiency measures is projected in five years, counting on the use of LED luminaires, natural lighting and ventilation and roofs with adequate characteristics of thermal transmission for the project, such as those of greater use.

The use of renewable energies is becoming increasingly important in the construction of buildings. Most builders, especially for the industrial and residential sectors, still implement renewable energy in less than 10% of their projects; 34% of those surveyed consider that more than 50% of their projects will implement renewable energy within five years. This allows us to see that the sector considers that it will progress gradually. Among building operators, 60% of them affirm that in more than 80% of the buildings they operate, energy savings are sought, while 20% report that between 50% and 80% of their buildings do so.

The main energy efficiency measures that building operators incorporate are natural lighting and the use of LED lights. The most popular measures after these are natural ventilation, use of variable speed drives for pumps, use of efficient ventilation and air conditioning equipment, and shading - vertical or fins. On the other hand, the least implemented measures are shading - horizontal or eaves, orientation of the project in relation to the sun and roofs with high solar reflectance. Finally, less than 10% of the buildings that operate use alternative energies, which reaffirms that renewable energies still have a low use in the building sector.

Governance Context

The governance context relevant for energy efficiency in Colombia contains elements of policies, laws, strategies, programs, and plans at both the national and regional levels, all of which collectively constitute the ?governance framework?. For the policy framework, the starting point is the Paris Agreement adopted on December 12, 2015, in Paris, France. In 2017 this Agreement was adopted as a national policy in Colombia through Law 1844. From this norm derives the National Policy on Climate Change approved in 2017 and Law 1931 on Climate Change of 2018, which establish the guidelines for the climate change management and where the National Plan for Adaptation to Climate Change (PNACC) and the Colombian Strategy for Low Carbon Development (ECDBC) are integrated, among others. Also of relevance is Law 1715 of May 2014 through which the integration of non-conventional renewable energies into the National Energy System is regulated, as well as Law 2169 of December 2022 through which the country's low-carbon development is promoted through the establishment of goals and minimum measures regarding carbon neutrality and climate resilience and other provisions. These framework instruments, which integrate international and national climate change intentions, propose actions in the short, medium, and long term that the Colombian Government has established as a roadmap with goals at the national, sectoral, and territorial levels.

At the sectoral and territorial level, there are Comprehensive Plans for Sectoral and Territorial Climate Change Management (PIGCCS) and (PIGCCT), and particularly that of the Housing, City and Territory Sector (PIGCCS) of August 2020. The latter were recently reviewed and updated to integrate them into the Nationally Determined Contributions (NDC), which are the country's main strategy to achieve the medium-term goals (2030). Likewise, the NDCs, updated in 2020, are articulated with the Long-Term Strategy, E2050, which seeks to define the roadmap towards carbon-neutral development. The construction industry plays a key role in achieving the objectives of these policies, especially considering that many developing countries, such as Colombia, are rapidly constructing new buildings as their populations and incomes increase.

The document CONPES 3919 of 2018 "National Policy for Sustainable Buildings", defines the sustainability criteria, such as efficiency in the use of water, energy, handling of materials and resources, as well as quality of the interior environment. There are seven CONPES documents, which are public policy instruments that generate a frame of reference for the different policies, initiatives and regulations that exist in the country. With special emphasis on CONPES 3919 "National Sustainable Building Policy", the following recommendations stand out:

? Request the Ministry of Housing, City and Territory (MVCT) with the support of the Ministry of Environment and Sustainable Development (MADS) and the Mining and Energy Planning Unit (UPME), to establish sustainability criteria for buildings and issue the standard that allows their regulation.

? Request Colombia Compra Eficiencia to develop a manual to incorporate sustainability criteria for the rental, sale, and construction of buildings for public use and their transitory application.

? Request the Ministry of Mines and Energy (MinEnerg?a) and the UPME to formulate an energy label for buildings that guarantees reductions in energy consumption and GHG.

Additionally, in regulatory terms there is Resolution 549 of 2015 of the MVCT, which establishes the minimum percentages and measures for saving water and energy for new buildings. The issuance of this standard, which is currently in the process of being updated, is one of the most important steps that have been taken by the national government to advance the purpose of highly efficient buildings.

On the other hand, the energy sector has proposed important actions that impact the construction sector. Resolution 41286 of 2016 of the Ministry of Energy establishes the Program for the Rational and Efficient Use of Energy and Non-conventional Sources (PROURE), and develops the Indicative Action Plan (PAI), which establishes energy efficiency goals for all sectors, including that of construction and construction materials. The PROURE has identified some related goals with energy efficiency in the residential and tertiary sectors. In the tertiary sector, with the implementation of the proposed energy efficiency measures, it is expected to achieve a percentage energy saving of 1.13% with respect to the total consumption of the country. For its part, with the measures of the residential sector, a saving of 0.74% would be achieved with respect to the country's total consumption. It is also important to highlight the National Energy Plan, which provides a long-term vision and different scenarios on energy consumption and production in the country.

At the level of interaction with the environment and the contribution to more sustainable cities, the sector is related to CONPES 3819 to consolidate the System of Cities in Colombia, CONPES 3718 of Public Space, Territorial Organization Plans and initiatives such as the NAMA Habitat of the MVCT, the NAMA DOT (Development Oriented to Transport), and the NAMA MoVE (Electric Mobility and Low Emissions) of the Ministry of Transport, which seek to generate sustainable and low-carbon environments, improve air quality, increase indexes of public space and harmonize the relationship of cities with the main ecological structure. Many of these actions are incorporated in both the Housing and Sanitation PIGCCS and the updated NDC.

Tax incentives currently exist within the context of Law 1715 of 2015, which have led to the implementation of actions such as VAT exemption on solar panels and other equipment used in the generation of photovoltaic solar energy. With respect to technical regulations, these refer to aspects of energy systems, and are currently implemented; the same happens with Resolution 030 of the CREG for distributed generation. The Energy Transition Law is recent and is in its initial phase of implementation.

A critical element of the governance framework is Resolution 549 of 2015. This resolution defines the parameters and guidelines by which sustainable construction is regulated in Colombia and the guide for saving water and energy in buildings is adopted. This resolution defined the percentages of water and energy savings that the new buildings must comply with, and which entered implementation of all its content in 2016. This resolution makes provisions for its contents to be adjusted based on the review of new technological conditions available in the country that can adjust the savings minimum requirements for water and energy, a process that began its analysis in 2020 in the Ministry of Housing of Colombia. Consistent with the above, investments by this proposed GEF project in the updating of technologies that increase energy efficiency in buildings and reduce GHG emissions in target cities, will result in the definition of new energy efficiency parameters that the current resolution and associated guidelines do not contain, and will thus require updating as allowed and required by the same resolution. The Resolution 549 of 2015 is currently being updated to better incorporate energy efficiency and monitoring and evaluation. The updating process of this resolution is expected to be completed by December 2023.

Colombia has a regulatory framework related to sustainable construction defined in Decree 1077 of 2015 and Resolution 549 of 2015 and especially Decree 1077 of 2015, defines in its article 2.2.7.1.3. the follow-up that should be conducted, the procedure, and tools for monitoring the implementation of sustainable construction measures in buildings. This process, however, is currently weak and must be strengthened through a verification, monitoring, and follow-up mechanism, which can comply with what is indicated in the decree. Today the source of information available for public use related to data on sustainable construction is the observatory of the DNP system of cities, which does not contain information on all the buildings in Colombia. The monitoring and verification mechanism must rely on the information generated by the various urban projects that are being developed in Colombia, but it must first be applied at a local scale, in this case in three cities of different sizes and urban dynamics, to corroborate its effectiveness in the management of information, for later use at the national level in coordination with the Ministry of Housing, City and Territory. Having a system of this type at the national level will allow the regulatory updating process that the national government currently advances from resolution 549 of 2015 to require less investment in time and resources, by having the information available and updated, which can complement, update, and modify the criteria of sustainability in constructions.

Under the current regulatory framework in Colombia, relevant institutions have not been able to quantify the impact of energy efficiency in buildings. The most significant advances are the statistics generated by the observatory of the system of cities of the DNP of Colombia, which registers 268 building projects certified in sustainable construction, 18 certified facilities and in 49 municipalities, a small figure for the housing market that in 2021 registered the sale of 221 thousand homes sold throughout the country. Another source of information is that collected by the Mining-Energy Planning Unit (UPME) from energy consumption in buildings, which appears in third place with 22.04% of the national share of energy consumption above of mining and agricultural activities, this information was taken in 2018 and

is updated annually, but its consultation is difficult at the time of disaggregating by cities or by projects. However, energy efficiency from the parameters defined in resolution 549 of 2015 is subject to the reduction of energy consumption in homes and equipment, a parameter that is adjusted depending on the climatic region where the project is located. That is why a monitoring, follow-up and verification system becomes a necessity to quantify the impact of the construction sector in reducing GHG from the projects that are being built in the country. A quantitative and informed assessment of the extent to which energy efficiency is being taken in Colombia will be facilitated by a fit-for-purpose monitoring, verification, and reporting system.

Another key element of the governance framework is the Long-Term Strategy of Colombia E2050 and the NDC of 2020. This strategy was announced at the COP26 in Glasgow in 2021, as the route to achieve carbon neutrality in the country in 2050 and the increase in the country's climate resilience, in response to the high vulnerability to climate change of the country. Among the nine goals of the E2050, there is a specific one for cities, in which the country's progress in the construction of a legal framework and technological advances related to energy efficiency in buildings are highlighted. This effort is validated by recognizing that Colombia must continue to advance in the consolidation of follow-up and monitoring mechanisms for sustainable construction in the country. E2050, in its commitment to cities-regions, in the transformation option 28 "Highly Efficient Buildings Adapted to Climate Change," also prioritizes the adjustment and updating of the regulations and technical construction regulations in Colombia to include more robust guidelines on buildings with zero net GHG emissions and adapted to climate change. Likewise, E2050 proposes to develop reporting and verification mechanisms to guarantee the implementation of norms, standards and protocols for sustainable energy efficient buildings and net zero emissions.

As a follow-up from Glasgow in late 2021, the country is now working on developing the E2050 Implementation Plan and the NDC Implementation Plan which must comprehensively address legal and institutional needs to ensure successful plan implementation, as further explained in ?Barrier 1?.

The Financial Sector and Energy Efficiency in Colombia

In Colombia, banks such as Bancolombia, Banco de Bogot?, Davivienda, BBVA, among others, have generated lines of credit associated with the incentive for sustainable construction, doing important work in the implementation of sustainable projects in construction. In addition, there is the work carried out by Financiera de Desarrollo Territorial S.A., (FINDETER) with the Transportation Oriented Development NAMA to finance urban development projects in Colombian cities. For this reason, it will

be essential that the updating of national regulations involve the financial sector in the creation of incentives for sustainable construction, to assist in defining in which phases of the construction of a building or public space project the greatest economic benefits are generated when an incentive is applied.

In Colombia, construction generates 3% of GHG emissions, but the sector is expected to grow 9.8% in 2023, offering significant investment opportunities in green construction[1]1. For example, between 2019 and 2021, there was a substantial increase in the use of certification systems in the country, where more than 45% of construction, developer, and operator companies began to use them.

Also, according to Asobancaria, the financial sector has been a crucial actor in driving sustainable construction programs in the country. One of the most remarkable efforts includes the issuance of green and climate bonds, financial products designed to raise resources for energy and water-saving projects across industries such as transportation, waste, agriculture, industry, and housing. This initiative commenced in 2016 with Bancolombia's issuance of green bonds worth $350 million, followed by operations by Davivienda, Bancoldex, Banco de Bogot?, and Celsia, among others. Thanks to these endeavours, Colombia has accumulated over USD 500 million in green bond issuances, ranking fifth in South America in this category. Around 25% of the total proceeds of Colombian green bonds have been used for low-carbon construction or retrofit projects, demonstrating the potential for green finance to promote sustainable buildings.[2]2 Furthermore, the financial sector has proactively implemented various strategies to contribute to environmental preservation. In 2012, a total of 22 financial entities committed through Asobancaria to implement environmentally responsible practices under the Green Protocol and later the Extended Green Protocol. These initiatives are based on four key pillars: generating green products and services, managing, and evaluating direct environmental impacts, considering environmental risks in processes, and reporting and disclosing strategy results.

It is worth mentioning that the national standard includes tax benefits related to energy efficiency, but as indicated by the Observatory of the DNP System of Cities, only 96 projects related to buildings were reported as beneficiaries of these incentives in 2019, with which the work with banks to analyze together with builders the best financing measures for energy efficiency in construction, would improve the design of incentives, and increase the number of projects reported both for being beneficiaries and for applying measures associated with energy efficiency in buildings. This alliance and strengthening of working relationships with the financial sector will be crucial to the upscaling of the results anticipated under this proposed GEF project.

Socio-economic Context of Project Sites

The city of **Barranquilla**, officially Barranquilla's Special, Industrial and Port District, is the capital of the department of Atl?ntico, located in the north of the country in the Caribbean region on the western bank of the Magdalena River, 7.5 km from its mouth in the Caribbean Sea. It is the fourth most populated city in the country. The population density is 8,274 inhabitants per square kilometer. About 5.1% of the population is of black, mulatto or Afro-American descent and only 0.1% is indigenous. Public services in Barranquilla (electricity connection, sanitary sewerage, aqueduct, gas, and telephone) exceed 90%. However, it does not have an adequate storm drainage system, which is why it is constantly affected by flooding of the roads because of streams overflowing due to the occurrence of rains. Likewise, in terms of vulnerability there are also erosive processes, soil instability, and risks of eventual hurricanes.

Santiago de Cali or Cali is the capital of the Valle del Cauca department, and the most populous city in southwest Colombia, with 2,227,642 residents according to the 2018 census, with 53.2% being females and 46.8% males. According to the 2018 census, 0.52% of the population of Cali is indigenous, 14.62% are of black, mulatto or Afro-American, and 84.82% are classified as not belonging to any ethnic group. Geographically, the city is in the Cauca River Valley, formed by the western mountain range and the central mountain range of the Andean Region, with an average height of 1000 meters above sea level. The city spans 560.3 km2 (216.3 sq. mi) with 120.9 km2 (46.7 sq. mi) of urban area, making Cali the second-largest city in the country by area and the third most populous after Bogot? and Medell?n. As the only major Colombian city with access to the Pacific Coast, Cali is the main urban and economic centre in the south of the country and has one of Colombia's fastest-growing economies.

The city of **Pasto** is the capital of the department of Nari?o, located in the western part of Colombia, in the middle of the Andes Mountain range, in the Atr?z Valley at the foot of the Galeras volcano at 2,599 m.a.s.l. The city is located on the banks of the river that bears its name, which represents the main source of water supply and is a determining element for the structuring of urban life. With a population of 464,967 inhabitants that represents 25% of the total population of the department. The net density of the city is 15,401 inhabitants / km2. The region near the city of Pasto corresponds to the townships and rural areas that make up its natural and landscape heritage, in addition to the areas of source of its rivers, streams and lagoons, such as the Laguna de La Cocha, considered as an important wetland especially as Habitat of Aquatic Birds, with its cultural, tourist and productive character, being this the main environmental asset of the municipality.

The economic development of the municipality of Pasto has been based on the tertiary sector of the economy. The city has a very good coverage of public services. Pasto has a significant population with low incomes, with a poverty rate of 30.5%, extreme poverty of 4.5%. Likewise, the effects of the conflict,

forced displacement and other factors affect the quality of life of the population, thus forming highly vulnerable population groups. Socio-culturally, the municipality of Pasto is configured as a diverse, multi and pluri-cultural territory, made up of a population of migrant past generations and a diversity of communities with values, knowledge, customs, and social manifestations that have determined the coexistence of very human dynamics. typical of the region. Traditionally, indigenous communities have had a preponderant role around the development and configuration of the municipality. The Historic Center of Pasto was declared a National Site of Cultural Interest (BIC) (Law 163 of 1959) and has a close relationship with the Pasto River and with the development of the Carnival of Blacks and Whites as it is crossed by a section of the Carnival Path.

Long-term Solution and Barriers

Although Colombia has made progress on the issue of energy efficiency in the construction of buildings and public spaces, there are still barriers that must be overcome. During the formulation of this project, the following barriers were identified:

Barrier 1 ? Governance of the construction sector. Implementation of the E2050[3]3 which is led by the Ministry of Environment and Sustainable Development is key for creating the enabling framework for improved governance of the construction sector in Colombia. The E2050 initiated the development of its implementation plan in **February 2022**, where it will define in greater detail the times, managers and products required to comply with the 2050 strategy. Concurrently, the country is already advancing with the ?*Net Zero Carbon Building for All Program?*, which aims to achieve new net zero buildings by 2030 and existing net zero buildings by 2050, delivering in the coming months the roadmap to achieve this objective at the national level, being an advance in the implementation of the measures proposed in the E2050, and incidentally being a guiding process for the project presented for financing before GEF. Even though the country is making progress in the formulation of policies and regulations on sustainable and low-carbon buildings, there is much work to be done to upgrade existing regulations and guidelines to make them responsive to requirements for achieving carbon neutrality and energy efficiency, in line with the goals defined in the National Determined Contributions (NDC) and E2050. Current policies for energy-efficient building require a more robust and comprehensive regulatory development that involves the entire life cycle of buildings and there is a lack of appropriate monitoring and verification systems to ensure compliance by the construction sector. At present, there are still gaps in the sustainability criteria addressing energy efficiency in the design, construction, and operation of buildings and public spaces, which prevents builders from knowing in a practical way the recommendations and guidelines for optimizing their processes, promoting the carbon neutrality of the country. In addition, and as mandated in the resolution itself, new energy efficiency parameters for buildings will require updates to Resolution 549 of 2015, to allow for greater certainty about the contribution of the construction sector in the

reduction of GHG emissions and leaving clarity in the norms and standards that must be met in new Colombian buildings. Governance of the construction sector requires reforms to and strengthening of the legal and institutional frameworks and monitoring mechanisms to effectively implement the E2050, and by extension, the achievement of carbon neutrality and energy efficiency in the construction sector.

Barrier 2 ? Lack of incentives for the application of energy efficiency in sustainability criteria in projects, works or activities associated with construction. According to the publication ?State of Sustainable Construction in Colombia 2021?, carried out by the Colombian Council for Sustainable Construction, all members of the value chain, that is, suppliers, manufacturers, operators, designers, consultants, builders, and developers, identify the main barriers as lack of incentives from the government and additional investments in direct project costs, including those associated with energy efficiency. There is regulation to incorporate some aspects of sustainability and energy efficiency in construction projects, but some other aspects of sustainable construction outlined in Annex 1 of Resolution 549 provides opportunities for intervention, such as low-carbon materials, adaptive build reuse, and the mandatory requirements for VIS or VIP buildings. Construction companies and local authorities need to strengthen the human capital, knowledge, and experience to incorporate GHG mitigation and green infrastructure in building design and public space development. It is necessary to enhance the capacities of construction companies, local authorities and even the academy to promote energy efficient buildings, low carbon public space and green infrastructure. One of most prominent barriers for sustainable buildings is the required finance to implement energy efficient initiatives. According to the study carried out by Colombian Council for Sustainable Construction (CCCS), all members of the construction sector value chain identify the lack of incentives from the government and additional investments in the project's direct costs as the main barriers.

Barrier 3 - Lack of knowledge, skills, and capacities for energy-efficient construction at the local level. Builders and developers, for their part, consider the lack of advisory knowledge in the country in the use of advanced technologies as an additional barrier. Designers, consultants, manufacturers, and suppliers agree in their perception of the lack of demand in the market since there are different obstacles to the consolidation of a market for sustainable energy efficient buildings for decarbonization.

Barrier 4 - Lack of evaluation and monitoring mechanisms. Finally, institutional actors at the local level in the cities of Barranquilla, Cali, and Pasto identified as a barrier the lack of tools that would allow the evaluation energy efficiency in sustainable construction projects, works or activities in public spaces or buildings, as well as obtaining data from variation in terms of emission reduction in accordance with the sustainability criteria applied. The lack of information does not allow the correct application of sustainable criteria during the construction life cycle, nor does it allow an adequate evaluation to be made for decision-making for the city in terms of mitigating GHG emissions and reducing environmental impacts. This barrier underscores the challenge posed by the absence of Monitoring, Reporting, and Verification (MRV) mechanisms in effectively implementing Regulation 549 of 2015, designed to drive

progress in energy-efficient construction. The regulation sets forth requirements and standards, yet the lack of a robust MRV system hampers the ability to monitor compliance with these regulations over time, creating a notable implementation gap.

? Regulatory Compliance Monitoring: while Regulation 549 delineates energy-efficient construction standards, the dearth of an MRV mechanism hinders effective monitoring of project compliance.

? Performance Indicators: the regulation likely defines performance indicators for energy efficiency. An MRV system is vital for assessing the extent to which these indicators are met.

? The absence of monitoring creates a disconnection between the intended requirements of Regulation 549 and actual implementation on construction sites, potentially resulting in non-compliance with energy efficiency standards.

? Limited Accountability: without an MRV mechanism, there's a lack of regular assessment for compliance, risking neglect of energy-efficient practices due to insufficient accountability.

? Ineffective Progress Evaluation: Regulation 549 likely establishes goals for enhanced energy efficiency. The lack of an MRV system complicates the evaluation of project progress toward these goals.

? Missed Improvement Opportunities: an MRV system not only monitors compliance but also identifies areas for improvement. The absence of such a mechanism means lost opportunities to continually enhance energy efficiency practices in construction.

2) The baseline scenario and any associated baseline projects

BiodiverCiudades Projects

Since 2019 the National Government has been leading the BiodiverCiudades initiative, which seeks to transform Colombian cities into urban spaces where nature is part of sustainable urban development, and with which a solution is given to the main environmental, social, and economic problems. The national government has managed to form a network with the 14 cities that have ratified, through a memorandum of understanding, their commitment to incorporate biodiversity into the urban development of cities. This memorandum provides a framework of work and understanding with the cities, with which 94 urban development projects have been identified and leveraged with resources from the national government, 2 projects in Barranquilla for USD 50 million and 4 projects of national scale of technical assistance. This commitment of the cities to the initiative has managed to generate coordinated work that has allowed for the formulation of an energy efficiency project with resources from the GEF, which is why the government is committing to guarantee the identification of 6,024 housing pilot projects at the city level, complementary to the projects presented as counterpart to this project, as further outlined below.

It is necessary to clarify that these 6,024 pilot projects will be identified after the presentation of the project to the GEF, being supported in addition to the relationship and work with the cities and the figures provided by the National Department of Statistics (DANE), which between 2015 and 2019 show that Barranquilla, Cali, and Pasto are among the 20 cities with the largest number of square meters of buildings built in the country. In the case of Barranquilla, a construction of more than 6 million m2 of buildings is reported in the aforementioned period, Pasto reports more than 1 million m2 and Monter?a more than 600 thousand m2, this, together with the statistics provided by the Ministry of Housing, which reported the sale of more than 221,000 homes throughout Colombia in 2021, makes it feasible to achieve these pilot projects complementary to those presented as counterpart, which would apply the energy efficiency proposals proposed in the GEF project.

To develop projects within the framework of BiodiverCiudades, five lines of action were established: 1) circular economy, 2) air quality, 3) environmental education, 4) bioeconomy and 5) sustainable infrastructures. The latter is expected to be promoted starting with this proposal, especially with the implementation of energy efficiency criteria that helps in the reduction of GHG emissions.

The cities of Barranquilla, Cali and Pasto have currently prioritized the following projects which may help to form part of this project?s baseline.

Barranquilla:

Eco Park Family District Ci?naga de Mallorqu?n. It is a response to climate change and the urgent need to develop a space for public recreation, an encounter with nature. It proposes a Master Plan where six projects will be executed around the perimeter of the swamp, seeking the landscape adaptation of the southeastern sector of the Ci?naga de Mallorqu?n.

Recovery of the Ca?o de la Ahuyama. This project has contemplated the hydraulic and connectivity adaptation of the Ca?o de La Ahuyama. It will prevent the risk of flooding in the neighborhoods adjacent to the Ca?o de La Ahuyama within the framework of risk management.

Cali:

The GEF Project will complement ongoing efforts in the City of Cali in the promotion of non-conventional renewable energy sources. The city is currently converting 3,740 homes to sustainable

energy sources, has installed 54,000 smart meters between 2010 and 2022, has installed 30,000 LED lamps, has installed seven charging stations for electric vehicles, and has been the venues for several sustainable energy related events including Sustainable Housing Competition promoted by the United States Department of Energy, Solar Decathlon Latin America and the Caribbean 2015 and 2019. Some other key baseline initiatives in Cali includes the following projects.

Energy Sustainable Homes (EMCALI): This project is consistent with the Municipal Development Plan of Santiago de Cali and implemented within the framework of the program: Public Services to Homes and ICT. It is an Energetically Sustainable Homes initiative that seeks to determine the technical and operational conditions for the effective application of residential solar energy generation kits. With the installation of solar panels in homes, users are expected to become generators of their own energy. There are already 3 phases that have been implemented, positively impacting 100 families.

Puerto Mallarino Plant Solar Project: This project involves taking advantage of the water bodies of the reservoirs with the installation of floating systems with panels for energy generation, with the following additional characteristics: implement an automated cleaning scheme to clean the reservoirs; improve supply reliability by reducing the unavailability of reservoirs; lower reproduction rate of algae and other pathogens; and use local unskilled labour in maintenance work on the system and affected areas.

Distributed Generation Project: This project?s objective is to take advantage of the roof infrastructure to develop the distributed generation model in the city of Cali. Progress is currently being made in using the roofs of the MIO mass transportation stations.

Pasto:

Environmental, landscape and architectural recovery of the Pasto River as a structuring and connecting element of development and urban housing in the city of San Juan de Pasto. The project arises from the need to recover the R?o Pasto as a true structuring of development and economic and social activity in the urban sector. The project includes the intervention and recovery of approximately 2 kilometers in length of the river in its urban section, which crosses the city of San Juan de Pasto from southeast to northwest. The project would add about 524 thousand square meters of effective public space, reducing the city's deficit in effective public space. It is made up of 13 sections.

Based on these projects already identified and prioritized in the framework of BiodiverCiudades for the cities of Barranquilla, Cali, and Pasto, this GEF project will contribute to the incorporation and application of energy efficiency strategies such as the use of renewable energies, LED technology and saving measures energy, and the use of efficient construction materials at the level of bioclimatic comfort, as a way of implementing energy efficiency pilots in public spaces and in buildings destined for public use.

Sustainably Constructed Buildings for All Project

In 2019, within the framework of the United Nations Climate Action Summit, the Net Zero Carbon Building for All program was launched, which aims to achieve new net zero buildings by 2030 and existing net zero buildings by 2050. As part of this program two countries were selected to receive technical and financial assistance to develop a two-year project, in which they can advance in these goals, Colombia was one of these two countries.

The project began in April 2021 and is aligned with different public policies created in recent years in Colombia due to the multiple relationships they generate with their environment and with various sectors of the economy throughout their life cycle.

This project promotes the development of net zero buildings in Colombia, however, the pilots were only developed in Cali and Bogot?; for this reason, it is necessary to replicate this initiative in other cities. This proposal seeks to bring net zero buildings to Barranquilla, and Cali, expanding the scope of the project "Net zero buildings for all" to continue advancing in the decarbonization of buildings and the reduction of emissions generated in the construction sector.

Analysis for the definition of alternatives, studies, and preliminary designs for the environmental management of the Ci?naga de Mallorqu?n Ring Road, District of Barranquilla, Colombia (US$253,575)

This project implemented by CAF is ongoing until May 2022 and will provide critical baseline information for this project as indicated in its primary objectives listed below:

? Characterize and contextualize the Ci?naga de Mallorqu?n to define the essential technical elements to structure alternative projects that can promote sustainable development.

? Identify and formulate alternative interventions in accordance with the environmental, social, and urban environments.

? Define evaluation criteria and monitor the prioritization of intervention alternatives based on a multi-criteria analysis that allows generating the instruments for selecting the most appropriate alternative.

? Prepare at the pre-feasibility level the selected alternative for each neighborhood and structure a roadmap to advance in its final design and implementation.

The World Bank funded project ?**Assessment of the Energy Demand Reduction Potential of Public Buildings in Colombia? is currently un**derway in the country and has as its objective, identify the potential for reducing energy consumption in public sector education, health, and administrative buildings. For this, 29 energy audits were carried out where energy consumption, energy used, equipment, deficiencies in the comfort of the facilities and measures to reduce energy consumption were identified. Among the tangible results obtained in the audits, is the construction of a package of energy efficiency and renewable energy measures, the assessment of their potential for energy, economic and financial savings and the identification of financing strategies considering the particularities of the public sector at the national and regional level.

In addition, and complementary to the above baseline, the UPME is advancing a proposal of a roadmap for labelling of buildings, including simulations and goals. The UPME has published the third version of the Indicative Action Plan of the Rational Use of Energy Program PAI-PROURE for the year 2021. This document proposes a long-term vision of energy efficiency as a fundamental resource in energy transformation, as well as indicative energy efficiency goals estimated from cost-efficient measures. This exercise projects the impact of energy efficiency on demand and emissions in the 2021-2030 period and a cost-benefit analysis of the measures studied is carried out. With the results of this exercise, the UPME identifies the measures that require tax incentives to be developed and thereby achieve potential energy efficiency goals. The measures proposed in the PAI-PROURE show a consumption reduction potential of 1,726 PJ in the 2021-2030 period. The foregoing corresponds to a 9.34% reduction compared to a trend scenario. If we consider that the energy consumption for 2020 was 1650 PJ, it can be said that with the implementation of the measures proposed in this plan, Colombia could save 1 year of energy consumption and its associated costs. The distribution of the 9.34% reduction in consumption in the analyzed sectors is as follows: transportation with 3.71%, residential 2.89%, industrial 1.41%, tertiary 0.72% and others with 0.61% remaining. On the side of CO2 emissions, the PAI-PROURE simulation shows a potential of 87.22 MTonCO2 avoided in the period analysed. The foregoing is equivalent to an estimated reduction of 15.2% for the emissions estimated in 2030 for the final consumption sectors.

It was found that in the year 2023 and consequently with the new Development Plan, article 237 thereof establishes a guideline regarding the criteria for the establishment of baselines and energy efficiency methodologies in public buildings that are illustrated in the following legislative acts; *Article 237 of May 19, 2023, and External Circular 000088 of November 20, 2023.*

ARTICLE 237. Modify article 30 of Law 1715 of 2014: Article 30. Buildings belonging to public administrations. The national Government, and the rest of the public administrations, within a period of no more than one (1) year, from the entry into force of this Law, will carry out an energy audit of their facilities, with a periodicity of every four (4) years and will establish energy savings objectives to be achieved through energy efficiency measures and the implementation of Non-Conventional Sources of Renewable Energy -FNCER-. Each entity must implement, in the following year after the energy audits, strategies that allow a saving in energy consumption of at least 15% compared to the consumption of the previous year, and from the second year onwards, sustainable goals defined by the audit and to be achieved. no later than the year 2026.

To this end, it is the responsibility of each entity to allocate the necessary resources to comply with such efficient energy management measures. Public entities that implement energy efficiency measures, as well as self-generation projects with Non-Conventional Sources of Renewable Energy -FNCER-, may use the savings resulting from said projects to pay for investments made and new investments.

The Mining-Energy Planning Unit will determine the methodology for calculating the consumption baseline and estimated savings, which the entities must address in the preparation and implementation of their measures to comply with this article. Each entity must report to the Mining-Energy Planning Unit annually the results of the implementation of energy efficiency measures.

External circular 000088 Date: 11-20-2023: The general director of the Mining-Energy Planning Unit -UPME, presents for the consideration of the interested parties and the general public, the draft Resolution ?By which the methodology of the consumption baseline and estimated savings is adopted, the which must be attended to by the entities in the preparation and implementation of their measures to comply with the provisions of article 237 of Law 2294 of 2023.?

N**et Zero Carbon Building for All Program and Neto Zero Carbon Building Accelerator by WRI** - The Net Zero Carbon Building Accelerator project is financed by the Global Environment Facility (GEF) and is implemented by the World Resources Institute (WRI) and the Colombian Council for Sustainable Construction. The main objective is to accelerate the country's transition towards global goals of net zero carbon in construction. It has a national component that seeks to develop the national roadmap for net zero carbon buildings and begin its implementation process. Likewise, it has a local component that seeks to develop specific action plans for two pilot cities, Bogot? and Cali, and work on other necessary actions to achieve effective implementation.

In 2021, the project began with the launch at the national level, the advisory committee was formed in which MinAmbiente's vision was important to review the key actors and their role in the project, as well as the country's commitments to the climate change. With this committee, a consensus has been reached on what a net zero carbon building is for the country, and the key actors and organizations for discussion at the national and local levels have been identified and integrated. This group of experts is made up of nearly 300 people throughout the country, who represent the construction value chain from the private and public sectors, unions and associations, academia, and cooperation entities. In 2022, the project will publish the recommendations document that synthesizes the transformative actions for net zero carbon buildings in the country, because of the national dialogue with experts. This summarizes for each action: the gap with respect to the current state, the enabling policies for its implementation, actors involved, expected result, scalability recommendations, and relationship with the regional and local context. This document, in turn, integrates the prioritization exercise that was carried out in 2021 and will be a consultation document for public entities.

The National Roadmap for Net Zero Carbon Buildings has a full life cycle approach and therefore proposes major operational carbon reduction and embedded carbon reduction goals staggered between 2030 and 2040, to achieve net-zero carbon buildings by 2050. A total of 67 specific targets are proposed, grouped into 6 categories of action. The project aligns with the following categories and goals**: 1) Corporate practices**, the goal of which is for companies in the construction value chain to achieve decarbonization. To this end, actions must be generated focused on encouraging the design and implementation of decarbonization plans and the development of capacities within companies so that they can formulate and implement these plans, as well as measure and manage their carbon footprint. **2) Urban planning**, (i) green areas and main ecological structure, which mentions including guidelines for sustainable urbanism and nature-based infrastructure, (ii) public space, urban infrastructure and transportation systems, with actions for the generation of clean energy, water management, showing the need to train urban planners and designers, as well as the development of financial mechanisms that enable the financing of sustainable urban development and the implementation and development of the necessary technology. **4) New buildings**, (i) selection and use of materials, focus on the measurement and reduction of embedded carbon in buildings using tools such as LCA and the promotion of the use of materials that demonstrate to be low carbon, (ii) design and construction practices and processes, sets out three goals that are aimed at having best practices and design and construction processes for which strategies are proposed that stimulate and generalize the use of bioclimatic designs, sustainability tools and collaborative methodologies, (iii) licenses and sustainable building code, inclusion of resilience measures and the strengthening of sustainable construction requirements, until reaching a net zero carbon building code in its full life cycle, (vi) labeling, development and implementation of a labeling system for new buildings that integrates operational and embedded carbon footprint. **5) Existing** buildings, (i) use of energy and water during operation, among the strategies identified are the inclusion of sustainability requirements from energy efficiency codes and energy labels; the use of tools for the readaptation of buildings, such as energy audits and retrofit processes; the electrification of systems; and the optimization of water resources with a focus on circularity.

Guide to Sustainability Criteria for Social Housing in Colombia - In 2018, the Conpes 3919 - National Policy for Sustainable Buildings promoted by the MVCT, proposed the definition of sustainability criteria for all buildings, considering their life cycle. In this initiative, the MVCT has been leading the strategy to define the sustainability criteria proposed as the main commitment in Conpes 3919 of 2018. In this regard, since 2019 working sessions have been held with the sectors, unions, academia, among others, to consolidate a proposal of criteria by life cycle stage and environmental, social, and economic component, as well as the structuring of a resume by criteria that allows understanding the scope and regulatory status of each one. Today there is a preliminary proposal of approximately 65 criteria identified for the entire life cycle of buildings, which is being strengthened through additional inputs obtained through the participation of the MVCT in the Triangular Cooperation Project between Mexico, Germany, and Colombia. Within the framework of the project with Mexico, there are two key consultancies: 1. Consultancy on phase 2 sustainability criteria, which focuses on the materials component (in execution). 2. Consultancy on sustainability criteria for the environment (under contract). The information resulting from both consultancies will be used to advance in the fulfilment of commitment 1.1 of CONPES 3919 of 2018 on sustainability criteria for new and existing buildings, considering the life cycle.

Policy and Regulatory Analysis by Universidad de los Andes and UK-PACT Colombia - Low Carbon Cities in Colombia - An Integrated Urban Modelling Approach for Policy Analysis, was a project funded by UKPACT in 2019, with results delivered in 2020, and developed by the Universidad de los Andes and the Colombian Council of Sustainable construction. The objective of the project was to provide an approach, technical criteria, tools (set of indicators and models) and policy and regulatory recommendations for sustainable urban development in Colombia (climate change mitigation synergies between sectors, urban adaptation goals and SDGs)). The following products were generated for two urban projects in Colombia: Development of a vision to plan and operate a city or an urban project; Construction of inventories and base lines; Set of indicators (adaptable) to evaluate an urban project and its evolution towards an expected situation; Application of a set of models to evaluate options for mitigation, adaptation and improvement of habitability conditions; Development of a tool for integrating the recommended options; Analysis of mitigation scenarios, and options to increase resilience and improve habitability conditions for two case studies. The scale of the project was at the urban level, and it generated recommendations in the following dimensions: Urban Ecology, Water, Energy, Waste, Transportation, and Buildings and public space.

There are clearly a substantial number of ongoing initiatives in Colombia that are complementary to the project?s goals. In this regard, it will be critical for the project to comprehensively assess and systematize lessons learned from ongoing efforts and build on and complement existing initiatives. The project will generate alliances with unions, associations, cooperation agencies, and local and national governments that are involved to consolidate complementarity between initiatives. This will be ensured by the involvement of key agencies on the Project Steering Committee and Technical Working Group, either as a full-time member or invited to specific meetings, depending on the topic at hand. The project's efforts will strengthen existing capacities in the country and articulate actions between stakeholders to avoid duplication of efforts. It will be essential to convene the different ministries in a joint effort to integrate local governments and commit them to subsidiary rigor in meeting the shared goals of the project. The generation of incentives will be encouraged to generate a change in the habits of design, construction, and use of buildings, breaking the myth that building sustainably is not economically viable.

3) **The proposed alternative scenario with a brief description of expected outcomes and components of the project**

Intervention Logic

The intervention logic of the project is guided by the ?drivers?, ?assumptions?, and ?logical pathways? needed to produce the project?s objectives and ultimately the desired impact and global environmental benefits. The key drivers are those activities and processes that the project can potentially and directly

sponsor (inputs), in support of project outputs and outcomes, while the assumptions are those conditions and circumstances that are necessary to achieve the desired project results, but are outside the control of the project, as highlighted in the Project Results Framework. The logical or impact pathways are the set of steps, consisting of activities, processes and assumptions that collectively will deliver the desired project objective.

The project?s overall objective is ?Contribute to a reduction of CO_2 emissions by increasing decarbonization strategies in buildings and public spaces in Barranquilla, Cali, and Pasto through the development of actions that involve the different stages of the life cycle of buildings and interventions in public space?. This project seeks to address the barriers identified above related to energy efficiency in buildings and public spaces in Colombia, consistent with the need to reduce the associated GHG emissions.

The project?s intervention logic specifically supports the implementation of Resolution 549 of 2015 adopted by the Ministry of Housing, City, and Territory of Colombia. This resolution is contained in the NDC as a mitigation measure in the Colombian NDC and incidentally has supported the commitment of sustainable cities of the long-term strategy to 2050; in addition, this resolution has been the trigger for regulatory measures associated with energy efficient construction in cities such as Bogot? and Cali, and the 2019 National Sustainable Building Policy, being examples of how Colombia advances in reducing GHG emissions. Resolution 549 of 2015 seeks to establish the minimum percentages and measures for saving water and energy in new buildings as of January 1, 2016, for all of Colombia. Compliance with these measures is carried out by the construction union and reporting through the construction license. The resolution additionally adopted the sustainable construction guide for buildings; in this guide there are both active and passive measures to reduce water and energy consumption, and the technical support for adjusting the savings percentages by type of climate and building, based on the information available in 2015.

Five years after the adoption of the resolution in Colombia, the Ministry of Housing, City, and Territory began the process of updating this standard, considering two points, the technological advance in the energy efficiency of buildings, which should confirm whether it is feasible to increase or reduce the savings percentages and the need to create a system for monitoring compliance with this measure. This project presented to the GEF will allow Colombian cities and, incidentally, the national government to have more precise and detailed information on quantifiable measures that increase the energy efficiency of buildings and infrastructure and quantify the reduction of GHG emissions by energy efficient construction, which are implemented in cities and in construction projects in Colombia, being verified and promoted in the regions of the country. The primary drivers, assumptions, and the three key logical pathways of the project?s Theory of Change (ToC) are presented below and the graphical illustration of the TOC is presented in Figure 1.

Primary *drivers* include:

? Climate Change, increasing population growth and urbanization, market demand, policies that promote energy inefficiency, and insufficient knowledge.

? resolution or administrative act on highly efficient buildings adapted to climate change, which in their life cycle and interaction with the environment generate a net balance of carbon emissions equal to zero.

? reporting and verification mechanisms to guarantee the implementation of the norms, standards, and protocols for energy efficient building and public spaces.

? roadmaps for Barranquilla, Cali, and Pasto to advance in the decarbonization of buildings, which will include a monitoring system, and a business model that involves the financial sector.

? technical guides and manuals for the design and implementation of projects in public spaces and energy efficient buildings.

? 14 pilot projects that implement incremental changes in existing buildings that allow a tangible reduction in the carbon footprint associated with buildings and public spaces.

The project?s key *assumptions* are:

? **Outputs to Outcomes:** Drivers of change supported by the project are effective in delivering anticipated outcomes as indispensable inputs to reaching necessary intermediate states.

? **Outcomes to Intermediate States:** Regulatory authorities embrace the new framework, and the private sector sees the benefit of energy efficient construction.

? **Intermediate States to Impact/GEBs:** Project?s sustainability strategy holds true to deliver Global Environmental Benefits (GEBs).

The project?s *logical pathways* are summarized below:

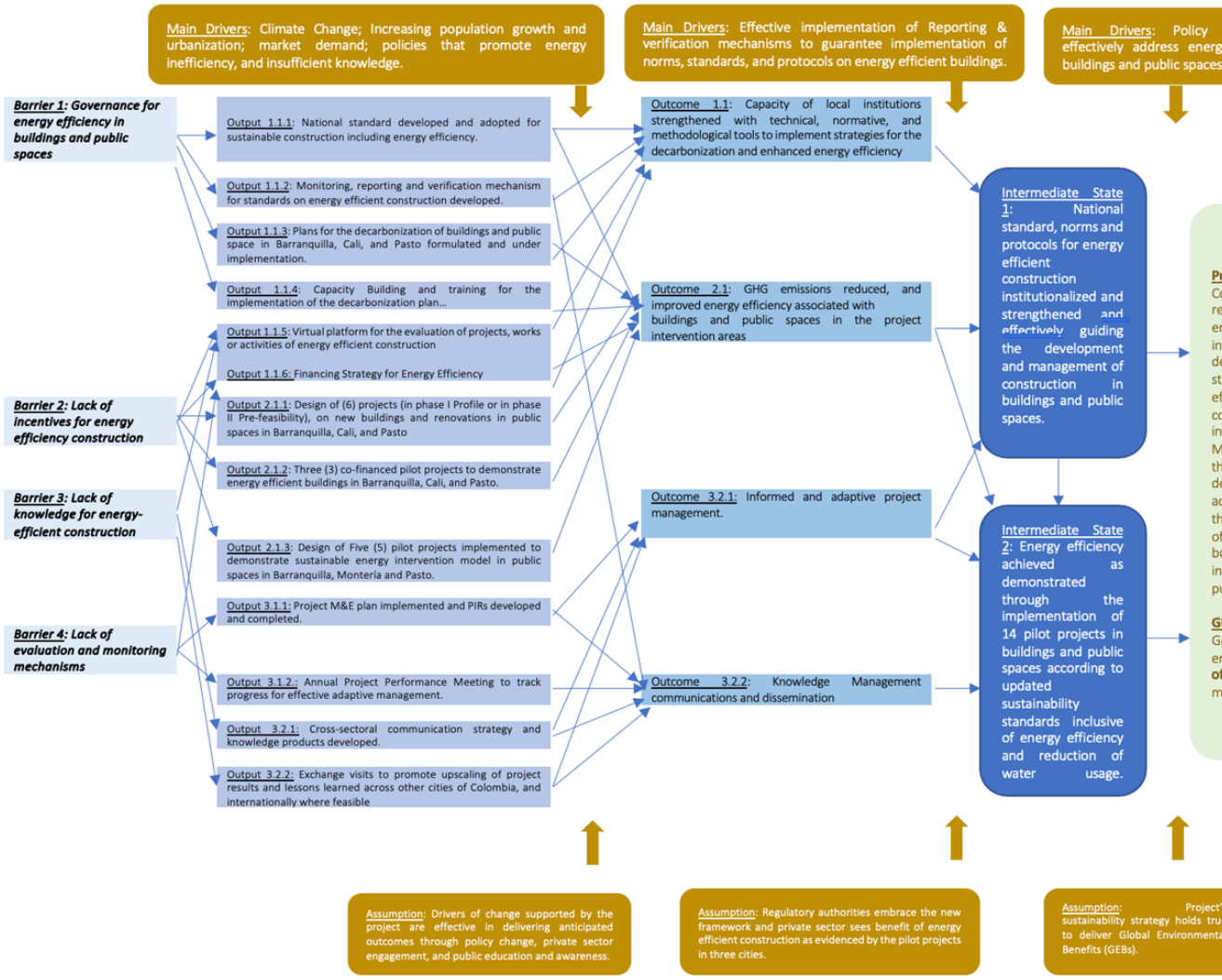
Logical Pathway 1: This pathway proposes that **IF** a national standard is developed and adopted for energy efficient buildings, monitoring, reporting, and verification mechanisms are instituted, plans for the decarbonization of buildings and public space are implemented, and capacity building in energy efficient construction is provided, **THEN** the capacity of local institutions will be strengthened with technical, normative, and methodological tools to implement strategies for the decarbonization and enhanced energy efficiency in buildings and public spaces in both existing and new buildings,

BECAUSE the overall governance framework for energy efficient buildings and public spaces would have been revamped to create the enabling environment with guidelines that contain comprehensive sustainability parameters for the entire life cycle of buildings and public spaces that allow for meeting the challenges of efficiency and reducing impacts on the environment, by optimizing processes while promoting the carbon neutrality of the country.

Logical Pathway 2: This pathway advocates that **IF** pilot projects are designed and implemented to demonstrate new energy efficient buildings and sustainable energy intervention models in public spaces in Barranquilla, Cali, and Pasto, **THEN** GHG emissions will be reduced and energy efficiency will be improved associated with buildings and public spaces in the project intervention areas, **BECAUSE** incentives would lead to construction of buildings and public space adopting energy efficiency criteria as part of overall sustainable construction, and knowledge, skills, and capacities for energy-efficient construction at the local level would have been strengthened.

Logical Pathway 3: This pathway proposes that **IF** a project M&E plan is implemented and PIRs developed and completed, Annual Project Performance Meetings to track progress against the project?s results framework are conducted; a cross-sectoral communication strategy and knowledge products are developed, exchange visits to promote upscaling of project results and lessons learned across other cities of Colombia and internationally are conducted, **THEN** informed and adaptive project management and Knowledge Management communications and dissemination will be achieved, **BECAUSE** the project would have invested in proper project management and KM systems that are necessary for reporting and accountability, and as part of a systematic construction of knowledge that is crucial for the upscaling of project results.

Figure 1. Theory of Change ? Output to Impact Analysis



Component 1: Governance for Sustainable Construction ***(GEFTF $1,294,647; Co-financing: $9,614,563)***

The objective of this component is to improve the regulatory and technical framework related to net zero carbon buildings and to accompany the cities of Barranquilla, Cali, and Pasto in their implementation in both new and existing buildings. Its result will be to improve the capacities of local institutions with technical, normative, and methodological tools to implement strategies for the decarbonization of the construction sector. This component will seek to address the following identified needs. Details of activities at the output level are presented further below.

1. Regulation in place, Resolution 549 of 2015 (Ministry of Housing, City, and Territory, 2015) focuses solely on buildings and rightly defines sustainable construction broadly and includes a wide range of aspects: energy efficiency, water efficiency, low embodied energy building materials, indoor environment quality, site sustainability, buildings and outdoor environment, and urban sustainability. However, with a pragmatic view in its first stage, it included as mandatory only those aspects that have the highest environmental impact, are easy to implement, and are fully measurable without ambiguity: Energy and water use efficiency in buildings. The Ministry of Housing is responsible for updating the Resolution every two years and including emerging aspects of sustainable building and building typologies in the updated versions if technological innovation conditions merit it, as determined by article 11. Resolution 549, 2015 is being updated and it is planned to be released in December 2023. In updating Resolution 549, the Ministry of Housing established a new energy and water consumption baseline to improve previously set goals and modify the reference measures. However, other aspects of sustainable construction provide opportunities for intervention, such as low-carbon materials, adaptive build reuse, and the mandatory requirements for VIS or VIP[1] buildings. This will require technical studies to identify opportunities for improvement of the new regulation and the preparation of technical guidelines, manuals, and the standard for energy efficiency in buildings, public space, and green infrastructure.
2. Policies in place lack an appropriate MRV system that provides transparent information about achievements or progress. In this regard, a comprehensive MRV system must be established that tracks progress in municipalities and the private sector. This system should be aligned with key sectors (housing, real estate, and cities) information strategies and tools, but also by the country?s climate change MRV system to facilitate monitoring of targets and public policies. This point will be clearly expressed in the updated version of Resolution 549.
3. Local governments do not count with a clear strategy with goals, actions, and indicators on the way forward to decarbonize the building sector. Technical assistance is needed to support the preparation and implementation of plans and strategies to promote energy efficient buildings in Colombian cities, and particularly in Barranquilla, Cali, and Pasto. Among these three cities, Cali is probably more advanced by having a Sustainable Construction Manual and an Action Plan to achieve net-zero buildings.
4. The construction sector in Colombia is moving towards more sustainable practices. However, construction companies and local authorities need to strengthen the human capital, knowledge, and experience to incorporate GHG mitigation and green infrastructure in building design and public space development. It is necessary to enhance the capacities of construction companies, local authorities and even the academy to promote energy efficient buildings, low carbon public space and green infrastructure.
5. There is yet to be an official platform to assess the effectiveness of builders' declared energy efficiency and savings measures in construction permit applications. Ideally, this public platform can model and evaluate energy-saving projects', energy efficiency, emissions reductions and provide input to implement the procedure and monitoring tools proposed in Article 12 of Resolution 549 and the climate policy. This allows for data-driven decision-making, identification of best practices, and continuous improvement in their energy efficiency strategies. Having a platform enables transparent reporting and accountability, both to the government authorities and the public, ensuring that the allocated resources and efforts are yielding the desired results in the transition towards a more sustainable, low-carbon future.
6. One of most prominent barriers for sustainable buildings is the required finance to implement energy efficient initiatives. According to the study carried out by Colombian Council for Sustainable Construction (CCCS), all members of the construction sector value chain identify the lack of incentives from the government and additional investments in the project's direct costs as the main barriers. The Climate Bond Initiative's study, titled "Colombia Sustainable Finance State of The Market" (2022), indicates that the Colombian market only has two sustainability bonds, both issued in 2019. The first was issued by the national development bank FINDETER for 400 billion Colombian pesos, and the second by the financial corporation Bancolombia for 657 billion pesos through a private placement, where the IDB Invest subscribed to the total amount issued. It is necessary to elaborate a green finance strategy for sustainable construction, with the participation of the financial sector.

Outcome 1.1.: Capacity of national and local institutions strengthened with technical, normative, and methodological tools to implement strategies for the decarbonization of the construction sector.

As outlined above, Resolution 549 of 2015 was meant to achieve substantial progress in energy efficient construction, however, this has not been fully implemented or at the pace desired due to challenges in institutional capacity at the municipal and local levels and budget shortages. This component will finance the preparation of a complementary regulation to the one of 2015 that is being updated, on highly efficient buildings adapted to climate change, which in their life cycle and interaction with the environment generate a net balance of carbon emissions equal to zero. This will include the development (through consultancies) of three (3) technical guidelines and manuals for the design of energy-efficient public spaces and buildings. The aim is to improve the usual practices in the construction sector and provide more information about financial and fiscal incentives associated with sustainable energy-efficient and green infrastructure construction in Colombia, differentiated by regions, climatic zones, and ecosystems to implement sustainability criteria in projects related to public spaces and buildings. These will include, but will not be limited to:

? A national practical guide for implementing sustainability criteria with energy efficiency throughout the life cycle of projects to construct outdoor public spaces and buildings considering regions, climate zones, and ecosystems; facilitate the development of a platform that allows the harmonization of energy efficiency codes, which are part of sustainable building codes, such as Resolution 549 and align these codes with labelling requirements, ensuring consistency in performance indicators and benchmarks. This alignment is essential not only to achieve equivalences but also to adapt to different climatic zones and promote incentives for implementing pilot projects.

? Enabling conditions to leverage existing material labelling programs, such as the Colombian Environmental Seal (SAC), along with other forms of environmental labelling and conforming statements to ISO 14020 standards commonly used in the building materials industry, and an incentive program to foster compliance with labelling requirements. Labelling promotes, in addition to technological replacement, the culture of energy saving. Therefore, the energy efficiency label in homes will allow the determination of an "energy performance index" (IPE) to classify the efficiency of homes with its unit of measurement kWh/m2 per year, thus becoming another decision tool for the user when buying, selling, or renting.

? Guidance manual to access financial and tax incentives associated with sustainable construction inclusive of energy efficiency in Colombia.

Technical studies will be developed that define the reporting and verification mechanisms to guarantee the implementation of the norms, standards, and protocols for sustainable buildings that include energy efficiency. As part of the updating of the Resolution 549 there will be a strengthening of the MRV system to evaluate the compliance with the standard and the progress of the goals established by projects implemented at the local level. The proposed MRV system should include indicators which refer to low-carbon materials, and life-cycle perspective, complementing both the 549 proposal and the Integral Climate Change Management Plan for the Housing, City and Territory Sector MRV. The design of the MRV will consider defining, among other aspects, governance, follow-up, reports to whom, periodicity, improvement actions, information capture mechanisms, and improvement of information quality; it may suggest adapting or adopting international experiences of good practices in MRV, such as those proposed by OLADE and consider the capacities based on local contexts.

"Currently there is no tool that allows the Monitoring, Verification and Reporting (MRV) of this policy to keep a real control of its implementation and reductions in terms of energy savings and greenhouse gases. Bogota is the only city that has kept track of energy and water consumption since 2012.[2] The Ministry of Housing has as a commitment to develop the National MRV system to follow up on Resolution 0549 but so far this has not been done". This is a report by the World Green Building Council on the Case Studies on regulations of the CEELA Project.[3] The generation of tools is not synonymous with an MRV mechanism. The tools are a way to achieve compliance with the mechanism; on the other hand, MRV should be articulated with governance mechanisms (involving public utilities). Verify progress in Cali and Bogota on this issue; within the framework of the BEA Program, both cities conducted MRV pilots of Resolution 0549, which may also generate information and are tools for

promotion and communication regarding sustainable construction in the country. Another critical aspect of the GEF project is differentiating Energy and Environmental Performance Monitoring of buildings from Regulatory Compliance Monitoring, the former being a matter of Energy Management and overall sustainability in constructed buildings.

Additionally, given that in Barranquilla and Pasto cities there is still no guide document or Manual as a public policy that establishes design criteria to guarantee parameters of Energy efficiency and Sustainability in Buildings, technical assistance will finance the development of plans and sustainable construction manuals for both cities to advance in the decarbonization of buildings and public spaces following the example of the implementation of the Action Plan to achieve net zero carbon buildings in Santiago de Cali through the Zero Carbon Building Accelerator, the Sustainable Construction Manual, and the Cali ?Construye Sostenible? Seal. The plans will also be guided by Appendix 1 from Resolution 549 about sustainable construction and the Guide to sustainable construction materials. These documents will constitute a package of Sustainable Construction Manuals for three of the four climate zones of Colombia defined by Resolution 0549 (Cali: hot-dry, Barranquilla: hot-humid, and Pasto: cold)[4]4. They will facilitate progress in the decarbonization of buildings and outdoor public spaces. The plan will include a monitoring system, and a business model that involves the financial sector based on a Financial Strategy to be developed, as further described below. Also, there will be two experience sharing events where Cali and the Colombian Green Building Council can share the lessons learned. To land the plan it will be important to prioritize and implement two pilot actions of the Action Plan of each city, with an emphasis on support with specialized personnel, equipment, among others. These are proposed Pilot projects of Component 2. In the case of Cali, the Handbook includes a list of energy efficiency actions for new buildings (exceeding the requirements of RES549), for existing buildings (not covered by RES549), and for urban planning projects and public spaces (also not covered by RES549). The new manuals for Pasto and Barranquilla are expected to meet all requirements.

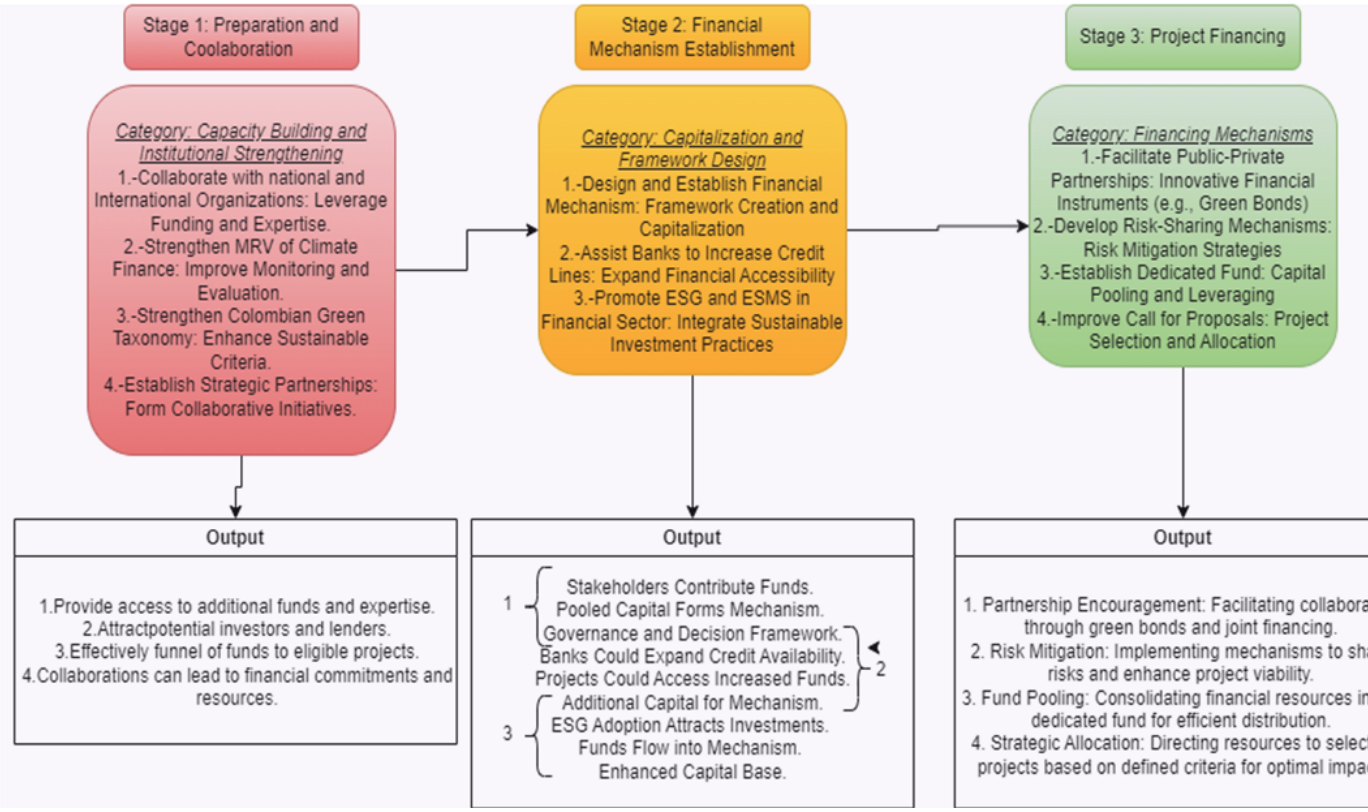
In Colombia, efforts are being made to train personnel in sustainable construction and energy efficiency. The Ministry of Education and the Colombian Chamber of Construction (CAMACOL) are making efforts to update the National Qualifications Framework in the construction sector, with the aim of promoting knowledge about sustainability and energy efficiency in construction projects throughout the value chain. The Colombia Carbon Neutral Program offers technical guidance to companies to calculate and manage their carbon footprint, as well as to formulate decarbonization plans. However, there are gaps in the development of capacities in sustainable construction and energy efficiency, such as the lack of transversality in the curricula, the scant research on these topics, and the lack of articulation between research programs and the industry. Energy efficiency initiatives and programs focus on the industrial or business sector, leaving aside the construction of sustainable and energy-efficient residential buildings. It is important to have alliances with entities such as SENA (The Colombian National Apprenticeship Service) and CCCS (Colombian Council for Sustainable Construction) and CAMACOL to develop a multidisciplinary training program, with active and passive teaching-learning actions, addressing the issues of sustainable construction and energy efficiency throughout the life cycle of buildings and public spaces, aimed at municipal governments and local builders.

The National Government and Local Governments require a platform that allows their energy efficiency projects to be evaluated to guarantee the effectiveness of their low-carbon measures associated with this type of action. Such a platform should allow for modelling and evaluating energy efficiency projects of public initiative with public participation. The design and implementation of a virtual platform for the evaluation of sustainable construction projects, works or activities in public space or buildings will also be financed. This platform will encompass from analysis requirements to technical development, testing, promotion, and collaboration necessary for the creation and adoption of a comprehensive virtual platform that allows the evaluation of efficient construction projects in the public space, meeting sustainability criteria and generating benefits in terms of CO_2 emissions reduction and social and environmental improvements.

The project will support a triple alliance for the development of a Financing Strategy that will be made up of: a.) the Ministry of the Environment, the Ministry of Housing and the Ministry of Finance as representatives of the National Government; b.) the Colombian Sustainable Construction Council and CAMACOL as technical representative of the construction sector; and c.) ASOBANCARIA, as representatives of the Colombian financial sector in Colombia, and Financiera de Desarrollo Territorial S.A (FINDETER), as representatives of National Development Banks (NDB)[5]5.

The objective will be to create two financing mechanisms to guarantee the replicability and expansion of the scope of this proposed GEF 7 project. The first, through public resources to generate conditions and incentives that the government supports in terms of efficiency and sustainable construction. The second would be a financial mechanism that allows, for example, to increase credit lines, with better rates so that more income is generated for the financing of new projects at the national level. Both mechanisms should be aligned with the demands of the construction sector identified in the Green Taxonomy and the National Climate Finance Strategy (ENFC) adopted by the National Planning Department DNP. The activities proposed in this project will also support the process of updating the NDC of Colombia. Further details on the proposed financial mechanism are presented below in Figure 2.

Figure 2. Initial Conceptualization of Proposed Financial Mechanism



Subject to further assessment and analysis during project implementation, the three stages envisioned during the PPG consultations for the development of the financial mechanism as summarized below.

Stage 1: During this initial stage, collaboration with national and international organizations is established to access additional funding and expertise. Additionally, consideration is given to the

possibility of FINDETER (Territorial Development Financial Corporation) acting as an agency facilitating access to financing for applicants for energy efficient housing projects. Lessons are sought from BANCOLDEX' experience in financing energy efficiency in clinics and hospitals, considering performance contracts, savings guarantee policy, and training with the formation of energy auditors. Also, the proposal from ASOBANCARIA for a financial mechanism of green economic incentives supporting sustainable construction is analysed, including the installation of solar panels and subsidies for social interest housing tied to green taxonomy classification, among others. Experiences from Valle de Aburra, CAMACOL, IFC, and the Medellin Planning Department are also considered to enrich the strategy.

Stage 2: Moving forward, the financial mechanism is designed and established as the central conduit for funds. Contributions from the National Government, the construction sector, financial institutions, and international cooperation are channelled into this mechanism, serving as the funding source. Assistance is provided to banks to expand credit lines, increasing funds available for sustainable projects. Additionally, actions are taken to raise awareness and disseminate existing financial instruments available in the market. During this process, the learning continues, and experiences from other countries like Mexico in green financing are incorporated.

Stage 3: In the final stage, public-private partnerships are facilitated through innovative financial instruments, attracting private investors. A proposal for the structure and mechanism of a dedicated fund which would pool private investments and leverage public resources will be established Projects selected through the Call for Proposals receive funding from the mechanism, supporting the development of energy efficiency projects. In this stage, efforts are made to optimize the lessons learned from BANCOLDEX, ASOBANCARIA, CAMACOL, IFC, and other national and international institutions.

The interactions between the stages are crucial for the successful implementation of the financial strategy, ensuring alignment with the project's objectives, and opening new opportunities to drive sustainability and energy efficiency in construction. By leveraging national and international experiences and fostering collaboration among multiple stakeholders, a significant impact will be achieved in the transition towards a more sustainable and responsible future in construction and territorial development.

To better grasp how this proposed mechanism fits into Colombia's broader financial landscape, it's crucial to analyse existing financial mechanisms and highlight how the proposed approach builds upon them. Colombia has been proactive in developing and implementing green financial mechanisms, such as green bonds, which have reached a total of USD 1.3 billion as of June 30th, 2021, primarily used for renewable energy projects. Additionally, Colombia launched a national green taxonomy in September 2021, aiming to identify environmentally focused projects and mobilize resources. The country has also integrated ESG considerations into the financial sector and established a concessional financing line for energy efficiency projects.

The proposed financial mechanism for sustainable construction in Colombia is designed to complement and build upon existing mechanisms. It envisions expanding the success of green bonds to include sustainable construction projects, aligning with Colombia's trend of using green bonds for renewable energy. The mechanism also integrates with the national green taxonomy, ensuring funded projects adhere to green criteria, contributing to the development of green capital markets. Incorporating ESG considerations into its framework aligns the proposed mechanism with Colombia's efforts to integrate sustainability into the financial sector. The mechanism also builds on the concessional financing line concept by including risk mitigation instruments and incentives, reducing perceived risks, and enhancing attractiveness for investors and lenders.

The proposed mechanism is envisioned as a comprehensive framework encompassing loans, guarantees, risk mitigation instruments, and incentives. Loans provide capital with competitive interest rates, guarantees mitigate risks for lenders, and risk mitigation instruments enhance project reliability. Incentives, such as lower interest rates for green investments, encourage behaviours aligned with sustainability goals.

To ensure gender perspectives are mainstreamed in the implementation of Component 1, diagnostic documents, situational analysis of regulatory/normative frameworks, and generation of recommendations will incorporate information disaggregated by sex and age group, and the Project's gender mainstreaming strategy is reflected in the products derived from consultancies, technical assistance, and representation in ministerial roundtable. The design of information systems for reporting and data will include a gender perspective to identify gaps and support decision-making, and energy efficiency strategies, manuals, and sustainable construction criteria will ensure the integration of gender issues. The training programs will incorporate gender and diversity dimensions to contribute to the elimination of social barriers and stereotypes in the learning scenario. The use of differentiated user analysis tools will be incorporated in designing a virtual platform to evaluate projects, works, or activities of energy-efficient buildings in public space designed and executed. With the leadership of the professional expert in Social Safeguards and Gender to be hired by the project, the incorporation of the gender perspective will be ensured in existing and new mechanisms, policies, financing criteria, and decision-making processes.

Activities at the output level to deliver this outcome are summarized in Table 2.

Table 2. Primary Activities to Deliver Outcome 1.1.

Primary activities to deliver Outcome 1.1	
Outputs	**Activities**

Output 1.1.1: National standard developed and adopted for energy efficiency in buildings and public spaces.	**Activity 1.1.1.1** Diagnose the current national regulations on Energy Efficiency in buildings and public spaces and formulate a roadmap that outlines the implementation of complementary regulations to enhance energy efficiency. **Activity 1.1.1.2** Update and adjust the baseline energy consumption in the three cities (Barranquilla, Cali, and Pasto) and actual consumption data in each city. **Activity 1.1.1.3** Create a plan to identify buildings that comply with the actions declared in the construction license per RES 0549, Article 12. **Activity 1.1.1.4** Create a ministerial table led by the Ministry of Housing and the Ministry of Environment as the entity responsible for RES 549 to ensure the application of the updated regulations that are about to be published and articulate and coordinate the initiatives that each ministry is developing independently creating cooperation synergies and transversal collaboration. **Activity 1.1.1.5** Adoption of guidelines for creating an Energy Labelling System for Buildings (SEEE), implement the national energy labelling system, and design a system of equivalencies and homologation of sustainable construction certifications as an alternative mechanism for compliance with energy efficiency standards and a method for accessing tax incentives regulated by the UPME. **Activity 1.1.1.6** Implement an incentive program targeting small and medium-sized enterprises, subject to compliance with labelling requirements, beginning with certifications and then move on to self-declarations and, eventually, environmental product declarations.
Out**put 1.1.2**: Monitoring, reporting, and verification mechanism to guarantee the implementation of the norms, standards and protocols for energy efficient buildings and public spaces.	**Activity 1.1.2.1** Adopt a roadmap clearly defining the processes and actions for monitoring, reporting, and MRV verification of RES 0549 in the country's territories by creating an intersectoral table for sustainable construction to work with the Ministry of Housing to apply an MRV that integrates all the instances and is aligned with the governance system. **Activity 1.1.2.2** Develop technical tools for monitoring, reporting, and verifying national and regional energy efficiency regulations. **Activity 1.1.2.3** Design a tool for calculating the energy demand of buildings that will allow builders to simulate the application of Sustainable Construction criteria in their projects.

Output 1.1.3: Plans for energy efficient buildings and public space in Barranquilla, Cali and Pasto formulated and under implementation[6]6.	**Activity 1.1.3.1** Identify energy efficiency strategies in three of the four climate zones of Colombia defined by Resolution 0549 and its Annex 1. **Activity 1.1.3.2** Conduct climate micro-zoning studies to understand the variability of the relationship between topography and temperature to facilitate the simulation and calculation processes for compliance with the standard. **Activity 1.1.3.3** Assess the Carbon Footprint of at least one public building?s life cycle and one public space pilot project to demonstrate and validate the methodology to be applied to other buildings throughout Colombia. **Activity 1.1.3.4** Consolidate a package of Sustainable Construction Manuals for three climate zones of Colombia defined by Resolution 0549. **Activity 1.1.3.5** Elaborate Action Plans for energy efficiency based on the Sustainable Construction Manuals of the climate zones for the 3 prioritized cities. **Activity 1.1.3.6** Develop tools (handbooks and guidelines) covering all ecosystem types to assess and quantify UNbS impacts to help scale up the implementation of Urban Green Infrastructure UGI.
Output 1.1.4: Capacity Building Program inclusive of technical assistance and training for the implementation of energy efficient buildings, public space and green infrastructure developed and implemented.	**Activity 1.1.4.1** Design, prepare and conduct education and training courses on sustainable construction topics and issues targeting different stakeholders of the Sustainable Construction and Energy Efficiency System to strengthen and develop specific technical capacities for each area of professional discipline. **Activity 1.1.4.2** Design and conduct a training for trainers? program to deliver education and training on sustainable construction and energy efficiency. **Activity 1.1.4.3** Create and implement a technical assistance program targeted at construction companies to incorporate sustainable construction and energy efficiency criteria in construction phases. **Activity 1.1.4.4** Create a task force led by the Ministry of Education to incorporate the contents of Resolution 0549 within the minimum requirements for architecture and engineering studies. **Activity 1.1.4.5** Organize an itinerant exhibition on sustainable construction and an educational seminar focusing on energy efficiency to promote the promotion, distribution, and sale of sustainable and energy efficient products in the construction industry.

Output 1.1.5: Virtual platform for the evaluation of projects, works or activities of energy efficient buildings in public space designed and implemented.	**Activity 1.1.5.1** Conduct a symposium to identify user needs and define specific platform characteristics, considering sustainability criteria, CO_2 reduction, and life cycle analysis. **Activity 1.1.5.2** Design and launch the Virtual Platform for the evaluation of projects, works or activities of energy efficient buildings in public space.
Output 1.1.6: Financing strategy for energy efficiency projects with both public resources and financial mechanisms through a triple alliance between the National Government, the construction sector, and the financial sector.	**Activity 1.1.6.1** Conduct technical assessments to identify the finance gaps, review international experiences, and make recommendations to strengthen green finance and collaboration with international organizations to leverage additional funding, technical expertise, and best practices. **Activity 1.1.6.2** Develop recommendations for strengthening the current MRV of Climate Finance to enhance monitoring and evaluation. **Activity 1.1.6.3** Identify opportunities for strengthening the Colombian Green Taxonomy to include additional criteria for sustainable construction and green financing. **Activity 1.1.6.4** Design and establish a financial mechanism aimed at addressing financing gaps and to be capitalized through a combination of public and private resources, with contributions from the National Government, the construction sector, national and international financial institutions, and public and private bilateral and multilateral cooperation. **Activity 1.1.6.5** Promote the scale up of ESG (Environmental, Social and Governance) and ESMS (Environmental and Social Management System) in the financial sector to facilitate access to new sustainable investments and green funds through training and capacity-building programs. **Activity 1.1.6.6** Implement innovative financial instruments to facilitate public-private partnerships to scale up resources for financing including considerations for joint financing programs, establishment of sustainable investment funds, fiscal incentives for financial institutions, and issuance of green and social bonds by the government to attract private investors. **Activity 1.1.6.7** Design and implement strategies that aim to address the perceived risks associated with energy efficiency and sustainable construction projects, making them more appealing to financial institutions.
Key stakeholders involved in the delivery of this outcome: Ministry of Housing, City and Territory (lead agency); Ministry of Mines and Energy; Ministry of Environment and Sustainable Development (in decision-making processes); Utility Companies; Mayor's Offices of Cali, Barranquilla, and Pasto; Urban Curator?s Offices, Environmental Secretariats, Municipal Surveillance and Enforcement Units; the UPME, municipalities, and public utilities; Municipal Planning; CAMACOL; Universities; CCCS; IDEAM; FENOGE; Ministry of Education; SENA; CAF; IDB; ASOBANCARIA ? Green Protocol, National development banks, commercial banks, FINDETER, Project Execution Unit.	

Component 2: Net-zero carbon buildings and energy efficiency in public spaces *(GEFTF $5,498,575; co-financing $46,298,947)*

The second component aims to implement effective and innovative solutions to promote energy efficient construction with an emphasis on new buildings and public space. The result of this component is: (i) reduce GHG emissions generated in the cities of Barranquilla, Cali, and Pasto, associated with construction as a subsequent result of implementing energy efficiency in buildings and public spaces; and (ii) increase sustainable construction in Barranquilla, Cali, and Pasto, which will generate 40% less GHG emissions. Component 2 incorporates sustainability and energy efficiency processes that will result in the reduction of emissions in the Building and Public Space pilots, through the 3 phases of the construction process: Planning, Execution or Implementation and Operation or Functioning. For the pilots 4 types of interventions were identified as follows:

- New sustainable social housing pilots
- Improvement of existing social housing
- Intervention in public space projects
- Energy and/or environmental rehabilitation of existing buildings

This component will finance studies, designs, and works in the cities of Barranquilla, Cali, and Pasto. It will finance projects that implement incremental changes in existing buildings that allow a tangible reduction of the carbon footprint of the sector.

Outcome 2.1: GHG emissions reduced, and improved energy efficiency associated with buildings and public spaces in the project intervention areas.

The housing designs will be carried out according to the climates of the cities with the objective of improving the efficiency in the consumption of energy and water. These designs and guidelines may be used by construction companies in their housing projects not only for the intervened cities but for the rest of the country's cities, and even for cities in the Latin American region. Additionally, designs of public spaces will be developed with criteria of energy efficiency, use of renewable energies and use of water, so that they can be used by municipal governments in interventions in public spaces. The activities under this component have the potential to serve as a reference point at the national and regional level to scale up the results of the project.

Within the framework of the project activities, the activities under output 2.1.2 are the only activities that will produce a direct effect on the reduction of GHG emissions, therefore, a significant part of the resources will cover these activities. The project will support the adoption of efficient central and decentralized systems for the use of energy and water in 6,615 homes (public and private) in Barranquilla, Cali, and Pasto, or 3,046, 3,319 and 250 homes respectively, under the guidelines of resolution 0549 of 2015, under National Decree 1077 of 2015 where all the regulations of the Housing Sector, City and Territory of Colombia apply. A decentralized energy system allows optimal use of renewable energy as well as combined heat and power, reduces the use of fossil fuels and increases eco-efficiency. In general, the project seeks to improve energy efficiency, associated with the consumption of Natural Gas and Electricity and water, and therefore promote the reduction of GHG emissions during the useful life of homes. The number of homes described above corresponds to 20% of the homes projected to be built, according to data from the NATIONAL STATISTICS DEPARTMENT (DANE) and the Colombian Chamber of Construction and is the maximum number of homes that could be supported with project resources. It is assumed that after the project ends its execution period of 5 years, the project will be able

to indirectly influence a percentage of at least double (40%) in the rest of the future homes to be delivered in each of the cities for the next 15 years, therefore, the replication factor will be around 6 times (two times the number of houses X three times the initial period).

In general, it is intended that the project can provide direct support to the design and implementation of centralized systems for household projects and direct or indirect financial support in conjunction with public energy and water utility companies for end users of households so that can buy decentralized systems for the distribution of energy, gas, and water. For the prioritization of projects in the three cities, the criteria used took into consideration the standards, studies, programs and projects of buildings and public space with parameters of energy efficiency and sustainability, the regulatory framework, existing baseline studies, and compliance with Resolution 0549 and Roadmap for Net Zero Carbon Buildings.

The City of Cali has made significant progress in the implementation of Energy Efficiency and Sustainability standards due to the issuance of its Sustainable Construction Manual and the Cali Construye Sostenible Seal (2022), in this regard it is important to give continuity and consolidate the process of implementation of the criteria of the manual, through a system of monitoring of energy efficiency and sustainability of the new projects of buildings and public space and its impact on the indicators for reduction of emissions of the city. The methodological and technological structure of the operation of the monitoring system will be replicable in other cities across Colombia.

Incorporating Social Housing with sustainable criteria is critical in the three cities. Therefore, preparing three business models is proposed to establish the projects' feasibility and environmental and financial sustainability in their life cycle, which incorporates Cost-Efficient strategies. Also, considering the efforts that UPME is beginning to work on the establishment of a SEEE (energy labelling system for buildings), that allows providing users with information about the energy consumption of the building and promotes improvements and adaptations in old buildings, as well as the application of new efficiency standards in new construction, it will be essential to support that work and land it at the local level with the implementation of a Building Energy Labelling pilot in the three cities of the project, which promotes, in addition to the energy and environmental standards of buildings, good practices in their operation by users, which enables an environmentally responsible culture of living and an improvement in the competitiveness of construction products with sustainability and energy efficiency standards, as well as an innovative drive in the commercial dynamics of the House. The energy efficiency label in homes will allow the determination of an "energy performance index" (IPE) to classify the efficiency of homes with its unit of measurement kWh/m2 per year, thus becoming another decision tool for the user when buying, selling, or renting.

This component assumes that the GEF project could finance the adaptation of public space projects in cities, under an efficient energy consumption model and the use of renewable energy. Therefore, the energy generated by photovoltaic systems will serve to supply a part of the electricity demand in public spaces, but it will also have a small percentage of energy generation that could be used, for example, to supply energy to recharging systems of electric vehicles. Batteries are also considered to be used as backup for these systems; the use of batteries will support the power supply at night, when some of these spaces will need lighting, such as parks and other public spaces that are open at night. The intention is that this type of public spaces can become not only a place where citizens can get closer to the biodiversity of their cities, but also an example of the innovative and sustainable uses of electrical energy with the implementation of energy systems, renewables, energy efficiency, storage, and electrification of transport. In this scenario, the used photovoltaic solar panels will be disposed of and/or recycled in accordance with national laws and regulations (Decree 4741 of 2005 - "By which the prevention and management of hazardous waste generated within the framework of comprehensive management is partially regulated"). With this type of infrastructure, it is expected that many other cities at the national level and in the Latin American and Caribbean region can follow the same example in the implementation of comprehensive and sustainable solutions in public spaces.

The total number of PUBLIC SPACE pilot projects to be supported are three (3), distributed as follows:

1. CA?O DE LA AHUYAMA ENVIRONMENTAL PARK LIGHTING

2. CORAZON DE PANCE ENVIRONMENTAL PARK

3. ZARCILLEJO ENVIRONMENTAL PARK

The total number of projects to be supported including technical and social housing intervention studies are nine (9), distributed as follows:

1. CA?O DE LA AHUYAMA ENVIRONMENTAL PARK LIGHTING - BARRANQUILLA

2. ENERGY SUSTAINABLE HOMES FOR THE BEACH AND FLOWER COMMUNITIES IN THE CIENAGA DE MALLORQUIN - BARRANQUILLA

3. CORAZON DE PANCE ENVIRONMENTAL PARK - CALI

4. ENERGY SUSTAINABLE HOMES ? CALI

5. PRODUCTIVE AND SUSTAINABLE RURAL HOMES - CALI

6. ENERGY SUSTAINABLE HOMES - CALI

7. ZARCILLEJO ENVIRONMENTAL PARK - PASTO

8. FEASIBILITY STUDY FOR COMFORTABLE HOUSING IN THE RURAL AREA ENCANO NARI?O - PASTO

9. TECHNICAL STUDY FOR PUBLIC LIGHTING IN THE RURAL AREA OF THE MUNICIPALITY OF PASTO - PASTO

The type of renewable energy and energy efficiency technologies expected to be implemented/eligible under the project will include:

? Photovoltaic Solar Energy

? Solar thermal energy

? Bidirectional meters for energy management in buildings and public spaces

? Remote Monitoring Systems of environmental variables and energy efficiency

? Low consumption LED and smart luminaires

? Home Automation Control of lighting and energy management systems.

This GEF project will allow to promote in cities and the construction sector designs and technologies that allow actively or passively the incorporation of energy efficiency measures in building and public space projects that contribute to the mitigation of emissions of GHG product of the construction sector. In line with the environmental and social safeguards, the pilots will take into consideration the use of local and non-hazardous material, including the correct disposal of mercury lamps following Resolution 1164 of 2002 from the Ministry of Environment and Sustainable Development. It is also expected that the cities develop their guidelines and apply in the pilots the principles provided by the project ?Strengthening capacities for energy efficiency in buildings in Latin America? (CEELA) which include bioclimatic designs, passive construction techniques, Natural-Based Solutions, among others.

To ensure gender perspectives are mainstreamed in the implementation of Component 2, the project will ensure the incorporation of gender actions and measures in applying the Sustainable Construction Manual criteria and the monitoring and impact assessment systems of the energy efficiency and sustainability criteria for buildings. Differential business models for the construction of Social Housing with EE and Sustainability standards will contain clearly defined gender considerations, and impact measurement tools will incorporate disaggregated data and gender indicators. These indicators may cover aspects related to equitable access to resources and benefits of pilot projects, participation of men and women, women's empowerment, reduction of gender gaps, and gender equity.

The primary activities at the output level to achieve this outcome are presented in Table 3 and a summary of projects on energy efficient buildings and renovations in public spaces to be supported by the project is presented in Table 4. Project Profiles for all 9 projects are presented in Annex J.

Table 3. Primary Activities to Deliver Outcome 2.1.

Primary activities to deliver Outcome 2.1	
Outputs	Activities
Output 2.1.1: Design of (9) projects (in phase I Profile or in phase II Pre-feasibility), on new energy efficient buildings and renovations in public spaces in Barranquilla, Cali, and Pasto[7]7.	**Activity 2.1.1.1 Cali:** Integrated design of pilot projects as case studies to validate the impact of applying the Sustainable Construction Manual in terms of CO2 emissions. The implementation should allow for the validation of the Sustainable Construction Manual and the application to the Cali Construye Sostenible Seal. **Activity 2.1.1.2 Barranquilla and Pasto.** Integrated design of pilot projects to showcase compliance with Resolution 0549. This activity will deliver the Feasibility study for comfortable housing in the rural area of Encano Nari?o ? Pasto; Technical study for public lighting in the rural area of the municipality of Pasto; Feasibility study for energy-sustainable homes ? Barranquilla.

Output 2.1.2: Three (3) co-financed pilot projects to demonstrate energy efficient buildings in Barranquilla, Cali, and Pasto.	**Activity 2.1.2.1** Execute Social Housing projects with energy efficiency and sustainability standards that allow establishing the projects' feasibility and environmental and financial sustainability in their life cycle, incorporating cost-efficient strategies. This activity will deliver Energetically sustainable social housing prototypes with energy efficiency standards and remote monitoring for the La Playa and Las Flores communities in Ci?naga Mallorqu?n; and Implementation on roofs of homes built in the communities of the Aguablanca district in Cali, with photovoltaic generation systems with energy efficiency standards, including equipment for measuring energy variables and improvement of roof materials ? Cali. **Activity 2.1.2.2** A pilot Platform for Monitoring the Environmental and Energy Performance of Buildings before and after interventions in the case of Existing Buildings and the operation phase for new buildings in an integrated environmental and energy monitoring system. The platform would operate through an interconnected network of Climate Measurement instruments and environmental variables and Energy Micro measurement in buildings. This activity will allow for the reporting of real-time data on performance indicators for GHG mitigation measures or policies.
Output 2.1.3: Projects implemented to demonstrate sustainable energy intervention model in public spaces in Barranquilla, Cali, and Pasto and in 11 additional cities in Colombia	**Activity 2.1.3.1.** Execute three Public Space projects with EE and Sustainability standards that allow establishing the projects' feasibility and environmental and financial sustainability in their life cycle, incorporating cost-efficient strategies: Lighting Environmental Park Ca?o de la Ahuyama ? Barranquilla; Coraz?n de Pance Cali Environmental Park; and Zarcillejo Environmental Park ? Pasto. **Activity 2.1.3.2** Study the environmental and energy balance of public space pilot projects in three cities (use the tool to calculate the energy demand of buildings following Activities 1.1.2.2 and 1.1.2.4.) Carry out a comparative analysis of Energy Efficiency and sustainability indicators and their impact on CO_2 emissions before and after the execution of the projects (see Activity 2.1.3.1.). Use baseline data from intervention sites in the three cities.
Key actors involved in the delivery of this outcome: Colombian Society of Architects SCA, Colombian Council for Sustainable Construction, Mayoralties of Barranquilla, Cali, and Pasto, Municipal or District Departments of Environmental Management, Municipal Planning Offices, Ministry of Housing, Ministry of the Environment (in decision-making processes), Sustainable Architecture Consulting Offices, FINDETER, CEELA Project, UPME, CAMACOL, National Development Banks, Ministry of Finance, ASOBANCARIA - Green Protocol, Ministry of Mines and Energy, Colombian Green Building Council, Project Management Unit.	

Table 4. Projects on Energy Efficient Buildings and Renovations in Public Spaces

City	Project	Type	Objective	No. of Homes to Benefit	GEF Support

Barranquilla	Ca?o de la Ahuyama Environmental Park Lighting.	Public Space Pilot.	TTF LED Public Space lighting, with 55w post type photovoltaic energy supply.	0	Lighting Environmental Park Ca?o de la Ahuyama ? Barranquilla.
Barranquilla	Feasibility Study for the Energy Sustainable Homes in the communities of Las Flores and La Playa of the Macro Project Ci?naga de Mallorqu?n in Barranquilla (Intervention of 3,044 Existing Homes)	Feasibility Study.	Reduce CO2 Emissions by Implementing Renewable Energy Sources and improving Energy Efficiency Conditions and Environmental Performance of Existing Houses.	3,046	Feasibility Study on energy sustainable homes. Energy-sustainable homes for the La Playa and Las Flores communities in Ci?naga de Mallorqu?n.
Cali	Coraz?n de Pance Environmental Park	Public Space Pilot.	Reduce CO2 Emissions by implementing Energy Efficient Green Public Space and Sustainable Infrastructure for Culture, Recreation, Tourism, and Sports in the Pance, Santiago de Cali.	0	Feasibility study for Lighting Coraz?n de Pance Cali Environmental Park, Indoor south areas. Lighting Coraz?n de Pance Cali Environmental Park, Indoor areas. Lighting Coraz?n de Pance Cali Environmental Park, Outdoor areas.

Cali	Sustainable Rural Homes for resettlement of Communities in Risk Areas of Santiago de Cali.	Feasibility Study.	Reduce CO2 Emissions by implementing Bioclimate, Energy Efficient Rural Housing, Renewable Energy Sources and CO2 Capture by Linking New Housing associated with Agricultural Production Systems.	331	Productive and Sustainable Rural Homes. Supervision of the design and construction processes of new rural housing models. Prototypes (2) of Productive and Sustainable Rural Homes.
Cali	Environmental and Energy Monitoring System for Buildings	Implementation Pilot.	Implement a monitoring system regarding energy efficiency and environmental performance of public buildings and social housing for real-time validation of the baseline and implementation of the GEF intervention pilots in the city.	100	Energy and environmental performance monitoring system of public buildings and social housing in Cali.

Cali	Energy Sustainable Households for Communities in Stratum 1 and 2 of Santiago de Cali.	Housing Pilot.	Implement photovoltaic solar generation systems on the roofs of social housing in the district of Aguablanca as a strategy for energy efficiency, replacement of energy sources, and environmental conditioning of buildings.	2,988	Technical study for the optimization of energy-efficient social housing models with photovoltaic solar generation system and bioclimatic standards. Implementation on roofs of homes built in the communities of the Aguablanca district in Cali, of photovoltaic generation systems with energy efficiency standards, including equipment for measuring energy variables and improvement of roof materials ? Cali.
Pasto	Zarcillejo Park Sustainable Lighting Project.	Public Space Pilot.	Provide the entire photovoltaic lighting system to the soccer field and four multi-sport game courts of the Zarcillejo Park in the City of Pasto to increase the use of the park in the evenings.	0	Lighting Zarcillejo Environmental Park ? Pasto.

Pasto	Feasibility Study for Comfortable Housing in the Rural Area El Encano, Pasto.	Feasibility Study.	Conduct studies and designs for the incorporation of passive thermal comfort systems for 250 houses in the rural area of the corregimiento El Encano in the Municipality of Pasto and the construction of two prototypes with different devices.	250	Feasibility study for comfortable housing in the rural area of Encano Nari?o ? Pasto.
Pasto	Technical Study for Public Lighting in the Rural Area of the Municipality of Pasto.	Feasibility Study.	Conduct studies and designs for the change from traditional electric energy to photovoltaic systems for public lighting in 17 townships of Pasto.	0	Technical study for public lighting in the rural area of the municipality of Pasto.
Total Households to Benefit				**6,615**	

[1] These 100 homes are included in the 2,988 and should not be double counted.

Component 3: Project Management, Dissemination, and Knowledge Management ***(GEFTF $764,049; Co-financing $5,083,049)***

Project monitoring and evaluation will be conducted by CCCS as Project Executing Agency in accordance with procedures established by CAF. This is guided by the CAF GEF Project Manual which ensures systematic planning, implementing, monitoring, and reporting of project activities, results, and outcomes. The monitoring plan will be designed to assist the project executing team to plan, execute, monitor, and report progress towards achieving objectives and outcomes in a consistent manner. Results indicators will be selected and clearly defined in project development to enable uniform data collection and analysis. The frequency and schedule of data collection will be defined for the project, as well as the roles and responsibilities of project team members. The project's M&E plan will be presented at the project inception workshop, including a review of indicators, means of verification, and the full definition of project staff M&E responsibilities.

Outcome 3.1: Informed and adaptive project management

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This outcome will ensure that the monitoring and evaluation plan is finalized with on-time data collection, reflection and reporting to aid in results-based decision making and adaptive management. The Project M&E plan will be fully implemented, and Project Implementation Reports (PIRs) developed and completed on time by CCCS as Project Executing Agency for review by CAF and IDB and onward submission to the GEF. An Annual Project Performance Meeting with stakeholders to track progress against work plan and results framework for effective adaptive management will be held to ensure full stakeholder participation and informed annual planning based on results and lessons learned from the previous year?s implementation. The project?s mid-term and final evaluations will also be ensured as part of overall project management activities, in addition to all auditing and fiduciary compliance responsibilities with the oversight of CAF. Primary activities at the output level to deliver this outcome are presented in Table 5.

Table 5. Primary Activities to Deliver Outcome 3.1

Primary activities to deliver Outcome 3.1	
Outputs	**Activities**
Output 3.1.1: Project M&E plan implemented and PIRs developed and completed.	**Activity 3.1.1.1** Development of mid-term evaluation through an external consultancy to guarantee progress over the project. **Activity 3.1.1.2** Development of final evaluation through an external consultancy to assess the accomplishment of the objectives and ToC.
Output 3.1.2.: Annual Project Performance Meeting with stakeholders to track progress against work plan and results framework for effective adaptive management.	**Activity 3.1.2.1** Annual Project Performance reports.
Key actors involved in the delivery of this outcome: Ministry of Housing, Ministry of Environment (in decision-making processes), National Planning Department, Construction Industry, CAMACOL, Local authorities in Barranquilla, Cali, and Pasto, Local Governments, Ministry of Finance, ASOBANCARIA ? Green Protocol, National development banks, commercial banks, CAF, IDB, UPME and CCCS. Project Executing Unit.	

Outcome 3.2: Knowledge Management (KM), communications, and dissemination

Under this outcome, the KM approach will be developed and implemented to ensure systemic documentation and uptake of results, experiences and lessons learnt is realized through-out project implementation, and not just because of periodic monitoring of time-bound project milestones. The development of this approach will be guided by the GEF approach to KM and by globally accepted elements affecting the successful implementation of Knowledge Management Systems: adoption, acceptance, and assimilation[9]8. The institutionalization of knowledge management initiatives and processes developed by the project will be a specific objective of the Knowledge Management Approach and will be a critical element for the sustained storage, access and dissemination of project results and outcomes beyond the life of the project.

With the aim of expanding the impact of the project, the implementation of a "Network of pioneering cities in sustainable construction in Colombia" will be financed, which will serve as a strategy for the exchange of experiences and transfer of knowledge in the different cities of Colombia.

Cross-sectoral communication strategy, knowledge products, and networking tools and communications products will be applied to facilitate the general public?s awareness regarding sustainable construction to reduce and avoid CO2 emissions. The project will also distribute knowledge products to stakeholders, including making them accessible on project partners? websites. Primary activities at the output level to deliver this outcome is presented in Table 6.

Table 6. Primary Activities to Deliver Outcome 3.2.

Primary activities to deliver Outcome 3.2	
Outputs	**Activities**
Output 3.2.1: Cross-sectoral communication strategy and knowledge products developed.	**Activity 3.2.1.1** Establish a web page for the project, where all milestones are reported and communicated. **Activity 3.2.1.2** Develop and conduct a podcast regarding energy efficiency, low-carbon, and sustainable construction. **Activity 3.2.1.3** Construct and manage social media where important news, milestones and information can be shared with stakeholders and the public in general. **Activity 3.2.1.4** Implement 1 webinar per year inviting national and international experts to discuss relevant and state-of-the-art technologies and advances in sustainable construction and energy efficiency for the sector. **Activity 3.2.1.5** Prepare and conduct four events for sharing the results of the Action Plans from Component 1, one in each climate zone. **Activity 3.2.1.6** Encourage the use of the platform from Output 1.1.5. by key stakeholders through awareness campaigns, training, and dissemination efforts. Highlight benefits such as sustainability, access to financing, and compliance with regulations and certification standards. Foster collaboration with public, private and allies at local levels.
Output 3.2.2: Exchange visits to promote upscaling of project results and lessons learned across other cities of Colombia, and internationally where feasible	**Activity 3.2.2.1** Conduct a "Network of pioneering cities in sustainable construction in Colombia" consisting of workshops and spaces which should also serve as a feedback mechanism to local municipalities and other stakeholders on the results and advances of the implemented initiatives.
Key actors involved in the delivery of this outcome: Project Executing Unit, Ministry of Housing, Ministry of Environment and Sustainable Development, Construction Industry, CAMACOL, local authorities in Barranquilla, Cali, and Pasto, IDB, CCCS, UPME, universities and national and international experts.	

To ensure gender perspectives are mainstreamed in the implementation of Component 3, the Mid-term and final evaluation of the Project will make visible the approach to gender issues throughout the project cycle, compliance with indicators established in the Gender action Plan, and achievements concerning

gender issues, and will include specific recommendations and lessons learned to improve the gender approach in future projects of this type and limitations identified concerning the effective incorporation of the approach. The project will ensure balanced gender representation in Annual Project Performance Meetings, and equitable access in project staff hiring will be ensured, as well as equal representation in project governance bodies.

4) Alignment with GEF focal area and/or Impact Program strategies

The project is aligned with the GEF-7 Climate Change Focal Area, Objective 1. Promote innovation and technology transfer for sustainable energy breakthroughs, and specifically with CCM-1-1: Promote innovation and technology transfer for sustainable energy breakthroughs for decentralized power with energy storage; and CCM-1-3: Promote innovation and technology transfer for sustainable energy breakthroughs for accelerating energy efficiency adoption.

Through the planned interventions of the project, capacity of local institutions will be strengthened with technical, normative, and methodological tools to implement strategies for the decarbonization of the construction sector, GHG emissions reduced, and improved energy efficiency associated with buildings and public spaces in the project intervention areas achieved.

5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

Additionality

Resolution 549 of 2015, currently in the process of being updated, establishes the minimum percentages and measures for saving water and energy to be achieved in new buildings, and adopts the Sustainable Construction Guide for saving water and energy in buildings. However, although it has not been implemented throughout the country, ?it is a benchmark for policy actions related to sustainable construction, and it has served as a basis for some of the country's main cities to implement their regulations and / or programs. This is the case of Bogot?, Cali and Medell?n with the Aburr? Valley, cities in which there are programs to promote sustainable construction, codes, or guidelines for sustainable construction, and / or local policies for their implementation. Even so, it has been identified

that the initiatives, regulations, or guides have not been particularly relevant due to the lack of economic incentives that promote the development of sustainable construction projects. The projects with sustainability characteristics have been given more by the benefits identified by the private initiatives in the market, than by the existence of local or national norms or incentives?. ?(?) Likewise, the design of public policies does not have considerations regarding the resources required for their implementation, for which reason the action plans are not implemented.

Therefore, this GEF 7 project "Energy Efficiency for the Transition to Carbon Neutral Cities in Colombia", aims to minimize the gaps that currently exist in relation to energy efficiency in buildings and public spaces in the country, from governance issues, regulations and monitoring, up to the design and implementation of energy efficiency pilots, particularly in residential buildings, but also with the intention of opening the possibility of designing pilot projects for inclusion and energy efficiency in public spaces; contemplating, of course, the management of projects, dissemination and management of knowledge to expand results and transfer knowledge and good practices in more cities.

Regarding component 1, in relation to the monitoring and follow-up of the progress in sustainable construction in the country, although it can be said that it is monitored through voluntary certifications, there is no follow-up mechanism associated with the current resolution 549 of 2015. This GEF project seeks to strengthen current regulatory instruments in compliance with the measures of the NDC Colombia, the Long-term Climate Strategy of Colombia - E2050 and the Comprehensive Climate Change Management Plan of the Housing Sector PIGCC and, consequently, the inclusion of sustainability criteria, without focusing solely on the voluntary intentions of the actors to implement this type of characteristics in projects.

Likewise, the National Government, through the Ministry of Environment and Sustainable Development, together with the World Resources Institute - WRI and the Colombian Council for Sustainable Construction - CCCS, are currently implementing the project "Neto Zero Carbon Buildings for all", which seeks to achieve new buildings net zero carbon by 2030 and existing buildings net zero carbon by 2050, through the development of a roadmap for net buildings that articulate with the life cycle of the building and with specific plans for the cities of Bogot? and Cali; this GEF 7 will allow to contribute to the development of more local building plans for the cities of Barranquilla, Cali, and Pasto; In addition, it will expand the scope for action on sustainable construction for public space as pilots, which, within Component 3, will be taken into account, along with actions associated with buildings, to promote the expansion of project results and lessons learned within the BiodiverCiudades Network of Cities.

Regarding component 2, this GEF project will allow to promote in cities and the construction sector designs and technologies that allow actively or passively the incorporation of energy efficiency measures

in building and public space projects that contribute to the mitigation of emissions of GHG product of the construction sector.

If Colombia does not increase energy efficiency and carbon neutrality strategies in the construction sector through the development of actions that involve different stages of the life cycle of buildings, construction and adaptations of public space, then: i) The buildings will continue to generate the same amount CO2 emissions, waste, inefficient consumption of energy, water and materials; ii) The Sustainable Construction goals proposed in the NDC Colombia will not be met, and it will be difficult to meet the City-region commitment, with highly efficient buildings, contained in E2050 within the proposed deadlines; iii) Sustainable construction projects, such as housing, will not be mobilized in large numbers; iv) Colombian cities will hardly be consolidated as sustainable, energy efficient, resilient and carbon neutral cities; v) The governance of sustainable construction that guarantees energy efficiency and the application of sustainability criteria throughout the construction life cycle will not be strengthened; vi) Cities will not have energy efficiency pilots in their public spaces, where the use of renewable energy, LED technologies or energy saving measures is promoted; vii) The construction sector will lose its competitiveness compared to other countries in the region and the global vanguard, suffering great delays in terms of the market, application of construction methods, use of advanced technologies and energy and materials efficiency; ix) Carbon neutrality will not be achieved throughout the construction sector value chain and the construction and operation of buildings will not be highly efficient.

In addition, if the different actors in the value chain, manufacturers, suppliers, operators, builders, developers, designers and consultants, do not have comprehensive knowledge that involves the different sustainability criteria and the existing incentives for the construction of this type of buildings, then, are unlikely to build spaces under sustainability criteria during the entire construction life cycle, or buildings in a more efficient way that helps reduce energy consumption, generate fewer CO_2 emissions. In numerical terms, the Global Environmental Benefit (additionality) of the project has been estimated at 1,541,374 CO2e avoided.

Co-financing

The project has secured US$**63,642,362** in co-financing. All co-financing, except that of the Ministry of Environment and Sustainable Development which are Recurrent Expenditures, has been classified as ?Investment Mobilized? and represent a combination of cash public investments, two loans and one grant from a total of eight co-financing sources. Loans represent 22,000,000, grant 8,000,000 and the remainder cash public investments, with 68,080 as recurrent expenditures. The details of investments mobilized have been presented above below the Co-financing Table.

6) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

The project contributes directly to GEF 7 Core Indicator 6 **Greenhouse Gas Emissions Mitigated** (metric tons of CO2e). Estimates of CO2e to be delivered by the project in terms of Sub-Indicator 6.2 Emissions avoided (estimated at 20 years) is 1,541,374 CO2e, being direct 55,808 and indirect 1,485,565.

The project will achieve the above Global Environmental Benefits via the development and adoption of national standard for energy efficiency in buildings and public spaces; development and implementation of monitoring, reporting and verification mechanism to guarantee the implementation of the norms, standards, and protocols for sustainable construction; development of plans for the decarbonization of buildings and public space; implementation of a Capacity Building Program inclusive of technical assistance and training for the implementation of the decarbonization plans with emphasis on public space, green infrastructure, and energy efficiency in sustainable construction; and through the implementation of pilot projects to demonstrate reduced GHG emissions and improved energy efficiency associated with buildings and public spaces.

7) Innovation, sustainability, and potential for scaling up

Innovation

The proposal is innovative in the Colombian context, and it will be particularly so for Barranquilla, Cali, and Pasto, cities that, although through the BiodiverCiudades initiative, have been betting on projects that favour their sustainable regional urban development, they currently do not have routes and/or plans for the decarbonization of buildings. In addition, they will have the possibility of having energy efficiency pilots in buildings and public spaces that involve the use of renewable energies, LED technology and/or energy saving measures. Likewise, they will have local information on the reduction of emissions associated with construction, considering that currently this information is only available globally for the country.

Consistent with the project?s strategy in Component 1, at the national level, the innovativeness of the project is highlighted in two key actions that will serve to respond to information gaps and a lack of tools for project evaluation. The first is the development of a guide with sustainability criteria for construction, which, although they already exist, the innovative thing is to include the entire life cycle, do it from a regional approach and consider the climatic zones and ecosystems present in area. The second is the

operation of a virtual platform (tool) for the evaluation of projects, works or activities of energy efficient construction in public spaces or buildings, which allows obtaining variation data in terms of emission reduction in accordance with the applied sustainability criteria. Currently, this tool does not exist, which is why it is of great help in decision-making for both local authorities and the construction industry.

Consistent with the project?s strategy in Component 2, it is intended that the public spaces supported by the project become centres for the innovative and efficient use of energy. On the one hand, distributed solar generation projects will be generated, which, although there are already some installations in the country, most of them have been concentrated in the private sector and not in the public sector as ordered by various current laws. There will also be space for various uses of batteries as a backup for energy solutions in the three cities. Although the implementation of large-scale batteries has been promoted in the country through big projects on the north coast, a market dynamic has not been generated for batteries in minor low-voltage applications and with use in commercial or residential installations. Therefore, the intention is that the public spaces benefitting from this GEF project serve as pilot projects to introduce batteries in this new market segment. Finally, with the generation of photovoltaic electricity not used directly in the spaces, there will be enough energy to install charging infrastructure for vehicles, motorcycles, and other electrical transports and to try to generate new business models for the energy commercialization that have been promoted by the law of electric mobility.

In conclusion, the innovation of this proposal is in the use of low carbon technologies, which have not reached cities like Pasto; energy efficiency pilots in public spaces that have not been developed locally and that can later become benchmarks for other cities; and the exploration of alternative, local and low-carbon materials that are not applied in Colombia.

Sustainability

From the national perspective, the project will be tied to the implementation of the NDC, specifically to measure 7 - Sustainable Construction. It will also articulate the implementation of E2050, particularly its commitment 6 "Cities-regions with comprehensive urban development (...)". Likewise, sustainability will be achieved through regulatory development that will support the project in relation to low-carbon buildings.

Sustainability will occur with the implementation of the technical assistance strategy for cities in public space, infrastructure, sustainable buildings, and circular economy, present within the Urban Environmental Policy. This assistance will be led by the national government at the head of the Ministry of Environment and Sustainable Development, with the support of the Ministry of Housing, City and

Territory.Likewise, the plans for the decarbonization of the cities of Barranquilla, Cali, and Pasto, will also be a way to give continuity to this project from the local level, since they will have the support of the mayors, the environmental authorities, and the local private sector (supported by CAMACOL and/or by the Colombian Council for Sustainable Construction), which will guarantee its appropriation and operation over time. In the case of used solar PV panels, these will be disposed or recycled in accordance with national laws and regulations.

The financial mechanism outlined in Component 1 plays a crucial role in bolstering project sustainability through various avenues:

Ensuring Enduring Viability: By offering financial backing to sustainable construction projects, the mechanism secures their long-term viability. Securing funding is often a primary hurdle for such initiatives, and the proposed mechanism effectively addresses this challenge, allowing projects to thrive beyond their initial phases.

Facilitating Scalability: Sustainable construction initiatives often struggle to scale up due to insufficient funding. The financial mechanism facilitates scalability by providing the necessary resources for larger-scale implementation, contributing to the widespread adoption of sustainable practices in the construction sector.

Promoting Private Sector Participation: The mechanism's design, possibly incorporating incentives and guarantees, makes sustainable construction projects more appealing to private investors and lenders. Increased private sector engagement diversifies funding sources and brings in valuable expertise and innovation, critical for the project's sustainability.

Alignment with National Green Finance Strategies: The proposed financial mechanism aligns seamlessly with Colombia's national green finance strategies, encompassing instruments like green bonds and the green taxonomy. This alignment not only ensures consistency with broader national objectives but also strengthens the project's sustainability by leveraging successful existing financial instruments.

Risk Mitigation: Early-stage sustainable construction projects often face perceptions of risk from traditional investors. The mechanism addresses this by integrating risk mitigation instruments, attracting more investors, and safeguarding against setbacks, thereby enhancing the sustainability and resilience of the supported projects.

Catalysing Innovation: Support from the financial mechanism fosters an environment conducive to innovation within sustainable construction projects. It encourages the adoption of cutting-edge technologies and practices that contribute to both environmental and economic sustainability, ensuring the ongoing relevance and effectiveness of the projects.

Adherence to Green Standards: Projects funded through the mechanism can adhere to green standards outlined in the green taxonomy and other established criteria. This commitment to meeting specific

sustainability criteria ensures meaningful contributions to environmental and climate goals, enhancing overall project sustainability.

In summary, the financial mechanism proposed in Component 1 transcends being a mere funding source; it serves as a strategic tool, fortifying the sustainability of the entire project. By addressing financial barriers, facilitating scalability, enticing private sector involvement, aligning with national strategies, mitigating risks, catalysing innovation, and ensuring adherence to green standards, the mechanism establishes a resilient foundation for the continuous success of sustainable construction initiatives in Colombia.

Scaling-up

This project is part of the BiodiverCiudades Strategy, currently led by the Ministry of Environment and Sustainable Development, which seeks to transform Colombian cities into urban spaces where nature is part of sustainable urban development, and with which, solutions are given to the main environmental, social, and economic problems. For this, 5 lines of action have been prioritized that seek to guide the development of projects: 1) Circular Economy; 2) Air quality; 3) Environmental Education; 4) Bioeconomy; 5) Sustainable constructions.

Under this strategy, the lessons and initiatives will be upscaled through the "Network of pioneering cities in sustainable construction", which allows the exchange of experiences and knowledge transfer on buildings and public space with energy efficiency and application of sustainability criteria. Within the Network, it is possible to replicate the roadmaps/plans for the decarbonization of buildings, energy efficiency pilots in public spaces and the construction of project portfolios on new buildings, infrastructure works and renovation in public spaces to serve as a reference in decision-making or for the integration of these into planning instruments. It is proposed that this network of cities work with the 14 cities[10]9 that make up the BiodiverCiudades initiative. Barranquilla, Cali, and Pasto are part of this initiative of sustainable cities that the Colombian Government has been promoting since 2019. Cities will be encouraged and trained in the use of the guides and tools generated through this project, so that in the medium and long term, they can apply this knowledge and experience in other sustainable construction projects, both in buildings and in space. public.

[1] **VIS Social Interest Housing.** It is one that is developed to guarantee the right to housing of lower-income households, which meets quality standards in urban design, architecture and sustainable construction, and whose value does not exceed 135 Current Minimum Legal Monthly Wages.
VIP Housing of Priority Social Interest. It is that social interest housing whose maximum value is 90 Valid Monthly Legal Minimum Wages.
[2] The report on indicators of water and electricity consumption in Bogota from 2012-2019 can be consulted on: http://www.sdp.gov.co/micrositios/ppecs/indicadores.

[3] World Green Building Council (2021). Estudio de Casos Normativos en los pa?ses del Proyecto CEELA. Autores: Consejo Colombiano de Construcci?n Sostenible (CCCS), Concejo Ecuatoriano de Edificaci?n Sustentable (CEES), Per? Green Building Council (Per? GBC), Sustentabilidad para M?xico (SUMe) y World Green Building Council (WorldGBC).

[4] It is suggested to include a fourth city during the implementation of the project to complete the representation of all climate zones in the project. The city could be Armenia, a city in the temperate zone.
[5] Estado de la Construcci?n Sostenible en COLOMBIA 2021; Colombia Green Building Council.
[6] During the implementation of the project a 4th city from the temperate zone could be included such as Armenia.
[7] In all cases for the execution of Social housing projects, compliance with the minimum qualifying criteria established by the director of Green Taxonomy chapter of new buildings is required.
[8] These 100 homes are included in the 2,988 and should not be double counted.

[9] Knowledge Management Tools. https://www.knowledge-management-tools.net/knowledge-management-systems.html

[10] Currently the 14 cities that are part of the BiodiverCiudades initiative are: Barranquilla, Monter?a, San Andr?s, Bucaramanga, Barrancabermeja, Yopal, Villavicencio, Pasto, Quibd?, Leticia, Pereira, Armenia, Manizales and Medell?n.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

Please refer to maps in Annex D and maps in Project Profiles in Annex J.

IMAGE 1. MAP OF PASTO SHOWING AREA, POPULATION AND COORDINATES

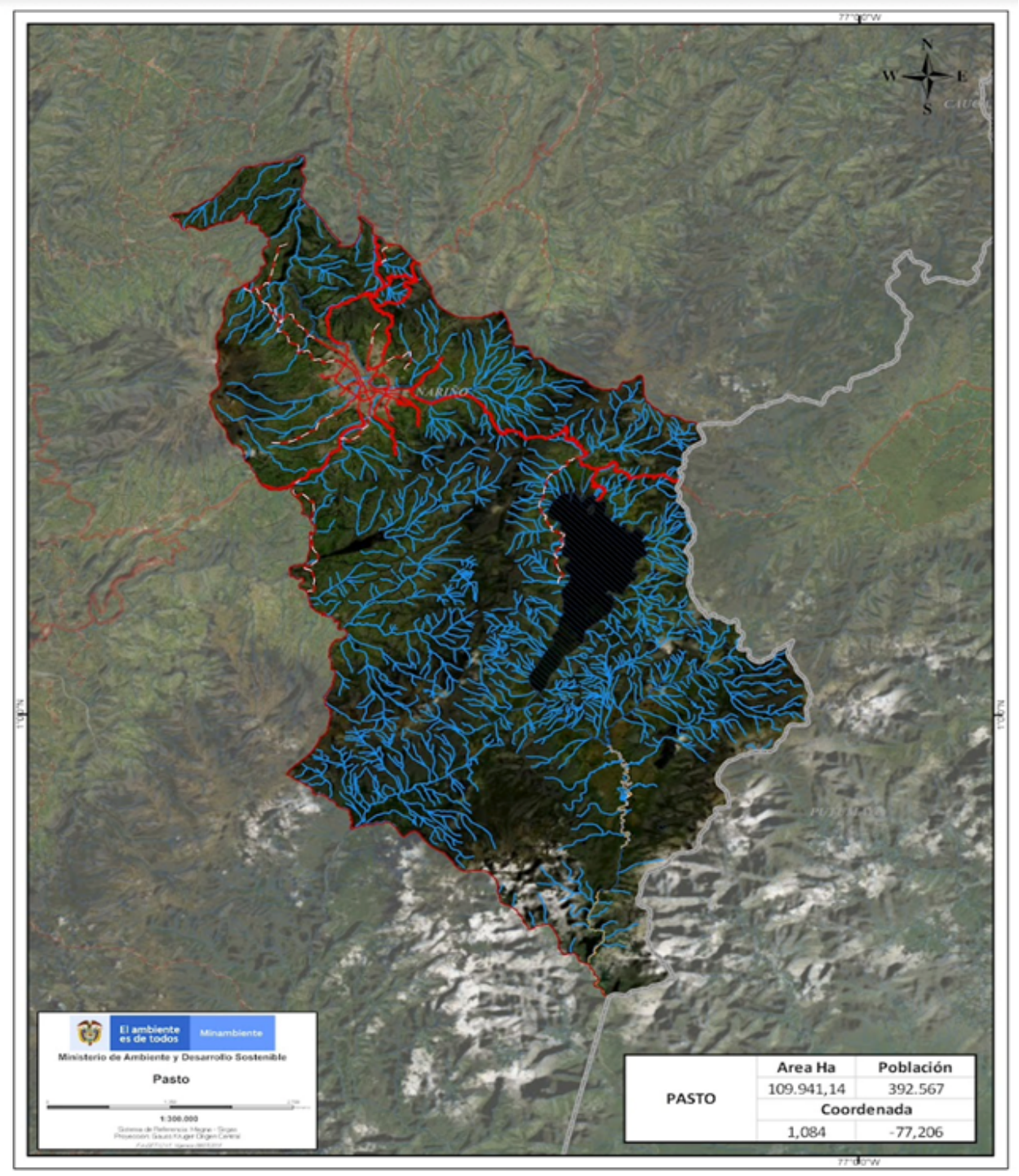
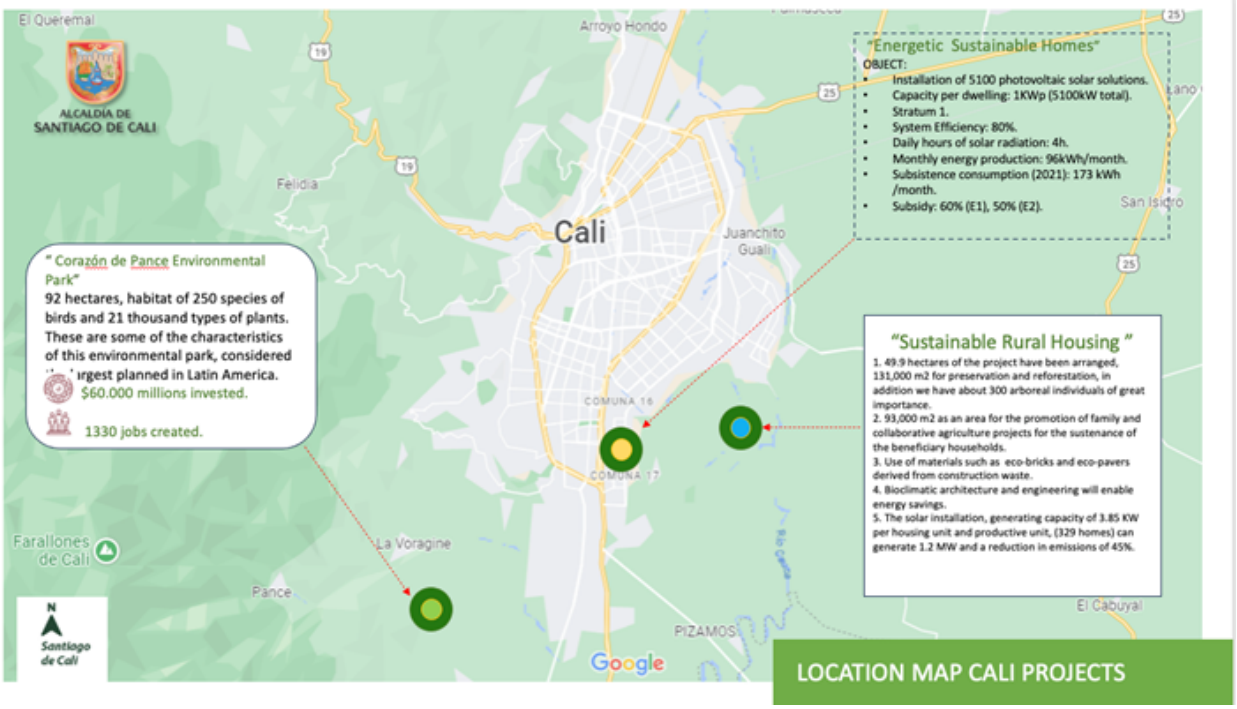
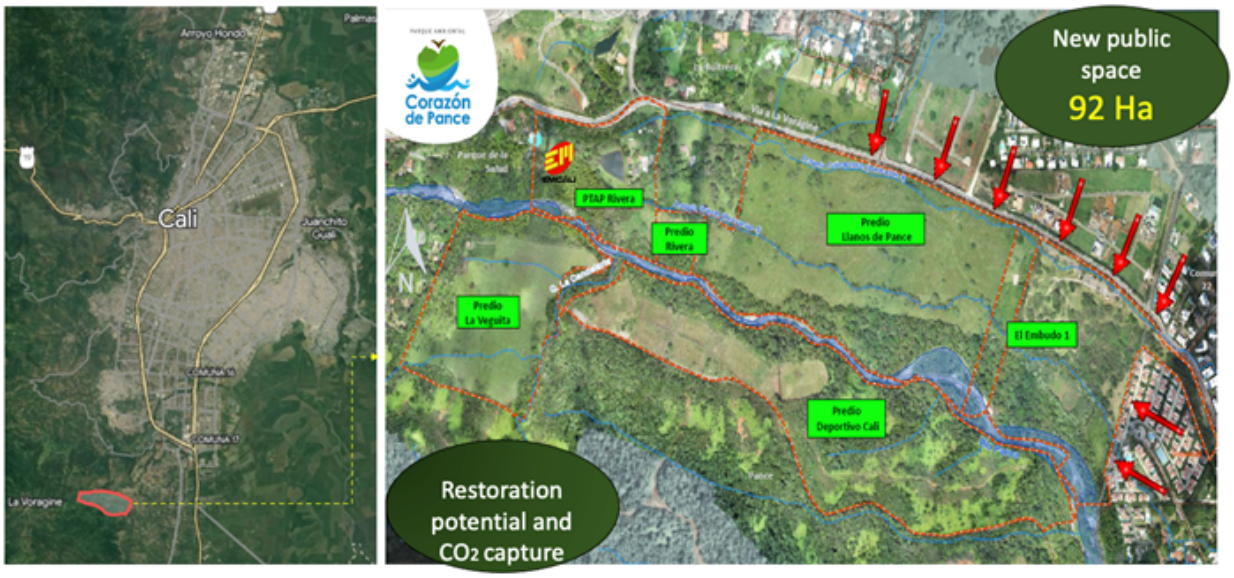


IMAGE 2. MAPS OF CALI SHOWING PROJECT INTERVENTION AREAS



LOCATION MAP CALI PROJECTS



CORAZON DE PANCE ENVIRONMENTAL PARK PROJECT

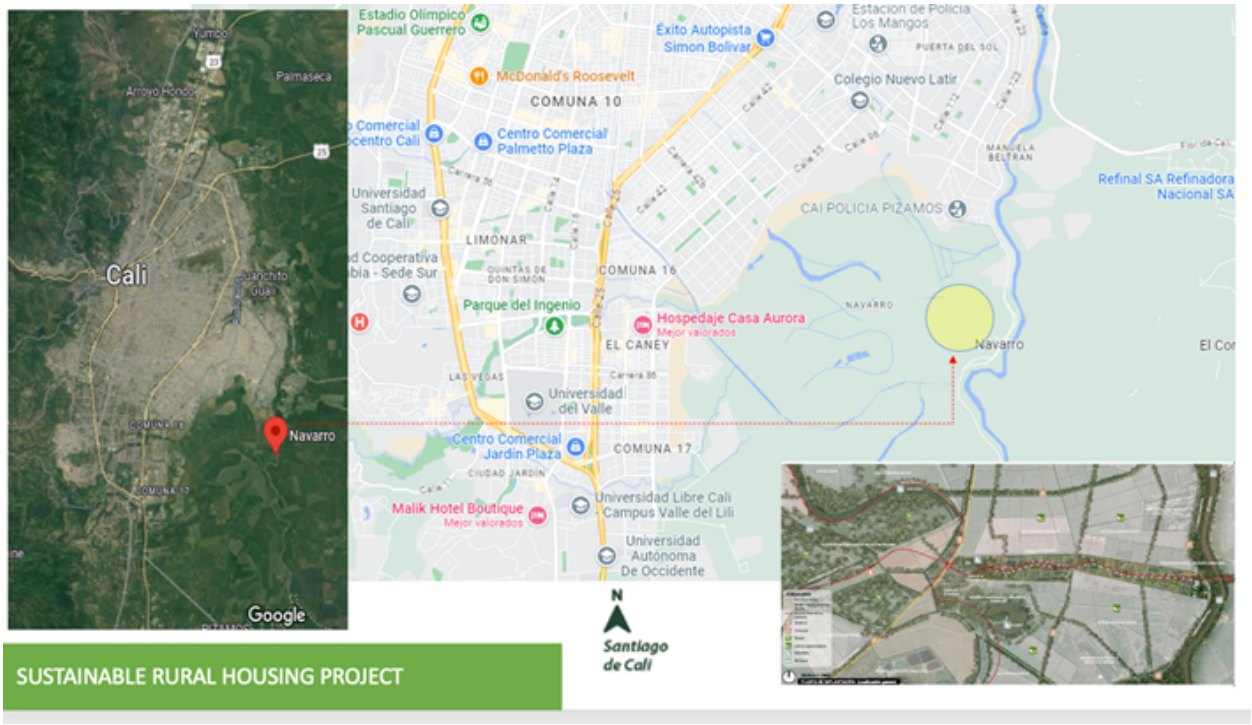


IMAGE 3. MAP OF BARRANQUILLA SHOWING AREA, POPULATION AND COORDINATES


N
W
E
S
MAGDALENA
El ambiente es de todos
Minambiente
Ministerio de Ambiente y Desarrollo Sostenible
Barranquilla
1:120.000
BARRANQUILLA
Area Ha
Población
15.420,21
1.297.082
Coordenada
10,982
-74,828

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

N/A

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities Yes

Private Sector Entities Yes

If none of the above, please explain why:

Stakeholder Identification and Analysis

The stakeholder identification process built on those identified in the PIF and was driven primarily by a classification based on stakeholders? relationship with the project. Some key stakeholders have defined roles and responsibilities for the Energy Efficiency standards in the implementation of public policies in the construction sector, including the Ministry of Mines and Energy, the Energy and Gas Regulatory Commission, Mining-Energy Planning Unit UPME, the Ministry of Environment and Sustainable Development, the National Planning Department, the Mining and Energy Planning Unit, and the Fund for Non-Conventional Energy (FENOGE), the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) and the Ministry of Finance and Public Credit. Other stakeholders identified include the following:

? Institutions linked to the Ministry of the Environment, such as national, regional, and district environmental authorities.
? Industrial and trade union sectors directly involved in the project.
? Participant financial institutions.
? Technological change managers - Public utilities, particularly electric power, and natural gas distributors.
? Participating educational institutions, academia, and research centres.
? Cooperation agencies that provide technical or financial resources for energy efficiency projects and programs.
? Clean Energy Program for Colombia - CCEP.
? The energy efficiency labelling project for energy end-use equipment in Colombia
? Representatives of citizens or civil society groups directly involved in the project.
? The network of laboratories that supports the certification and accreditation projects for sustainable construction in Colombia.

Other key stakeholders are the media responsible for disseminating information related to Energy Efficiency in Construction (EE) and publicizing the results of Component 2 projects and the overall benefits of improving energy efficiency in the construction sector.

Stakeholders were identified and placed in 1 of 3 levels according to their relationship with the project:

Level 1: persons and groups who can influence and decide the outcomes and the manner of the project implementation or make decisions based on the outputs of the project.

Level 2: persons and groups that participate in or influence the project directly or indirectly, but do not directly determine project decisions either prior or after implementation.

Level 3: persons and groups affected directly or indirectly by the outcomes of the Project implementation.

Table 7. Stakeholder Classification According to Relationship with the Project

Stakeholder Identification, Segmentation, and Level of Stakeholders				
Group	**Institution/ organization**	**Relevance to the project**	**Involvement-level mechanisms during the project's implementation phase**	**Level**
National Government	Ministry of the Environment and Sustainable Development - MinAmbiente	GEF Focal Point Its responsibilities are: Participate in the Steering and Technical Committees	Coordinate intersectoral work at the governmental level, especially with MinVivienda and UPME, and coordinate with private and civil society stakeholders. Align the project with Colombia's projected emission reduction goals and support the Ministry of Housing in conducting technical studies to identify opportunities to improve the new regulations.	L1
	Ministry of Housing, City, and Territory	Key collaborating partner of the project, member of the Technical Committee. A key partner in the co-financing of component 1. Indispensable for the achievement of multiple project indicators at the outcome level and the project's contribution to at least one GEF 7 core indicator.	Update and improvement of Resolution 0549 of 2015. Create an inter-institutional space of critical actors and intersectoral coordination for governance and MRV. Regulate the measurement of the impacts of Resolution 0549 of 2015, specifically concerning the standardization and timely delivery of consumption information by utilities.	L1
	Ministry of the Interior and Ministry of Culture	National Collaborating Partner	In participating cities where ethnic groups are present, follow up on the Framework Plan for Indigenous Peoples and the SARAS to protect	L2

Stakeholder Identification, Segmentation, and Level of Stakeholders				
Group	**Institution/ organization**	**Relevance to the project**	**Involvement-level mechanisms during the project's implementation phase**	**Level**
			their rights, with a comprehensive, differential, and social approach, in coordination with other competent State entities.	
	Ministry of Finance and Public Credit	Key collaborating partner of the project	Support sectoral ministries in identifying accessible and agile economic incentives with significant financial benefits to develop large-scale energy efficiency projects.	L1
	Ministry of Mines and Energy	Key collaborating partner of the project.	It will be fundamental in creating the regulatory framework generated in Component 1. Provide technical support and follow-up to implement the AMI advanced metering infrastructure system and complete its regulatory framework (update and optimize MME Resolution 40072 of 2018).	L1
	UPME	Key collaborating partner of the project.	It is a member of the Project's Technical Committee. It will be fundamental in creating the regulatory framework generated in Component 1. Provide technical support to implement an energy labelling system for buildings (SEEE) based on Resolution 0549 for buildings that guarantee reductions in energy consumption and GHG reduction articulated with incentives to promote their use and the application of new efficiency standards in new constructions and ii) services and certifications in sustainable construction.	L1
	Ministry of Science, Technology, and Innovation	Technical collaborator of the project	Support companies with innovation and development programs in the link of national construction materials producers and encourage the creation of specialized national laboratories to test sustainability characteristics in construction materials to gain market share in the sustainable construction market currently occupied by imported construction materials.	L2
	Ministry of Commerce, Industry and Tourism	Technical collaborator of the project	Accompany companies in the manufacturing sector in the environmental performance of industrial processes and create production portfolios adapted to the	L2

Stakeholder Identification, Segmentation, and Level of Stakeholders				
Group	**Institution/ organization**	**Relevance to the project**	**Involvement-level mechanisms during the project's implementation phase**	**Level**
			sustainability market. Encourage the creation of companies dedicated to managing waste generated in construction and demolition activities (CDW) as an input for manufacturing processes in domestic construction materials and contribute to GEI reduction.	
	IDEAM	Strategic collaborating partner	Leading the preparation of GEI Inventories.	L3
	DANE	Strategic collaborating partner	Achieve project objectives. Monitor indicators of the building sector for compliance with standards.	L3
	National Planning Department - DNP	Strategic collaborating partner	It will be fundamental in creating the regulatory framework generated in Component 1. Follow up on the dynamics of the sector through sustainable building indicators related to certified buildings and endorsed by existing regulations.	L1
Financing Entities.	Non-Conventional Energy and Efficient Energy Management Fund - FENOGE	Partner of the financial mechanism	Provide incentives for project interventions in the municipalities (3 + 11) to adapt facilities, small-scale self-generation solutions, energy studies and audits, and final disposal of replaced equipment.	L3
	National development banks (NDB) or second-tier banks FINDETER	Partner of the financial mechanism	It is a critical agent in formulating and delivering the credit lines of Component 1 and is crucial for scaling up project results.	L1
	Others include Commercial or second-tier banks and the Fondo Nacional del Ahorro (National Savings Fund).	A vital partner of the financial mechanism for replicability	Establish a financing mechanism for the replicability and enhancement of project results. Create instruments or programs that make the construction, marketing, and purchase of sustainable housing affordable. Contribute to financing Component 2 projects, financing, or guarantees for real estate developers.	L1
District and municipal entities **Environmental Authorities**	Districts of Barranquilla and Cali, Municipality of Pasto	These Institutions are implementing partners at the territorial level and critical partners in the co-financing	Integrating the Steering and Technical Committees. Cooperate in financing Component 2 projects and assimilation of the results of these projects. Definition of the decarbonization plans for the buildings present in their	L1

Stakeholder Identification, Segmentation, and Level of Stakeholders				
Group	**Institution/ organization**	**Relevance to the project**	**Involvement-level mechanisms during the project's implementation phase**	**Level**
	Secretaries of Planning and Environmental Management of Pasto.	and execution of component 2.	city, proposed in Component 1, "Governance for sustainable construction." Source of data and information on the participating cities.	
Environmental authorities	Administrative Department for Environmental Management - DAGMA (Cali); Environmental Public Establishment - EPA (Barranquilla); Regional Autonomous Corporation Corponari?o	Co-lead implementation partners to implement component 2.	They will be critical players in implementing the two components that make up the project. These environmental authorities will be part of the technical committee.	L1
Civil Society	Colombian Council for Sustainable Construction CCCS	Project Executing Agency housing the Project Executing Unit. Additionally, collaborating with partners to provide technical advice in the development of the project, especially in the preparation and validation of the guidelines and the implementation of the	Integrate the project's technical committee to ensure the private sectors and academia. 's participation. Support the articulation and alignment of the project with the National Roadmap for Net Zero Carbon Buildings. Support the definition of energy baselines for buildings. Support the construction of a proposal on strengthening the MinVivienda Resolution 0549 of 2015.	L2
Civil Society	Colombian Energy Efficiency Council	Key Advisory Partner Energy Efficiency and Renewable Energy Promoter	Provide input on specific activities to be supported by the project to optimize the return on GEF's investment.	L3
Trade Association of businesspeople	Chambers of Commerce of Cali, Pasto, and Barranquilla	Consulting Partner	Conduct essential consultations in the construction sector in the three cities of the project.	L3
Construction guild	Colombian Chamber of Construction - CAMACOL	Partner to provide technical advice in the development of the project, especially in the preparation and validation of the	Integrate the project's technical committee to ensure the construction sector's participation. Support in members' dissemination, awareness, and training for adequately implementing the standards (RES 0549	L1

Stakeholder Identification, Segmentation, and Level of Stakeholders				
Group	**Institution/ organization**	**Relevance to the project**	**Involvement-level mechanisms during the project's implementation phase**	**Level**
		guidelines and the implementation of the pilots.	and complementary) through its regional offices in each city. The technical source of data is at the construction company level.	
Members of the residential construction value chain	Housing end users	Direct beneficiaries of project interventions.	Apply tools to make informed decisions about their energy consumption and to drive residential energy improvements.	L3
Members of the residential construction value chain	Public utility companies	Collaborating partners	Technical source of data. Establish agreements with utility companies to ensure a reliable supply of consumption information (data at the subscriber-building level).	L3
Members of the residential construction value chain	Urban Curadur?as	Collaborating partners	Technical source of data in the standards implementation process.	L3
Members of the construction value chain	Energy Service Companies (ESCO)	Collaborating partners	Implement a strategy for existing buildings interested in retrofitting processes to transform them into energy-efficient buildings.	L3
Institutions of Higher Education and Research, Development, and Innovation Centers	Participating Universities are in Bogot? and the prioritized cities, Nacional, Andes, Javeriana, Universidad del Norte, Universidad de Nari?o, Universidad del Valle, and Javeriana in Cali. National Apprenticeship Service - SENA	Technical collaborating partners - knowledge and capacity building	Members of the technical committee. Source of knowledge and technical advice for the various project committees.	L1
Construction consortiums	Puerta de Oro Consortium - District of Barranquilla	Construction partner - Project implementation	Planning, execution, follow-up, and elaboration of works for the project	L1
	ECO Consortium - District of Cali	Construction partner - Project implementation	Planning, execution, follow-up, and elaboration of works for the project	L1
	Consorcio Hidroconsulta - Diana Wiesner Architecture and Design EU. A	Construction partner - Project implementation	Planning, execution, follow-up, and elaboration of works for the project	L1

Stakeholder Identification, Segmentation, and Level of Stakeholders				
Group	**Institution/ organization**	**Relevance to the project**	**Involvement-level mechanisms during the project's implementation phase**	**Level**
Vulnerable and marginalized groups	Representations of communities in the area of influence of the projects, Community Action Boards (ASOJUNTAS), social organizations and NGOs; Indigenous and ethnic peoples' organizations; women's and young people's organizations	Affected parts	Support to ensure participation and open dialogue in public and informative consultations. Support to ensure prior informed consent in all matters affecting the rights, interests, resources, and territories of ethnic peoples in areas of influence of the project.	L2
Multilateral Banking	CAF	GEF Lead Implementing Agency	Provide oversight to ensure the project design's comprehensiveness, integrity, and soundness while ensuring quality control and compliance with GEF policies and procedures	L1
	IDB	GEF Co-implementing Agency	Support to ensure the project design's comprehensiveness, integrity, and soundness while ensuring quality control and compliance with GEF policies and procedures	L1

Summary of Stakeholder Consultations Conducted During the PPG

A broad stakeholder participation process, led by a consulting team hired by CAF, was carried out during the PPG stage, continuing with the consultations held during the FIP stage, and included direct inputs from the Ministry of Environment and Sustainable Development, Ministry of Housing, City and Territory, the Ministry of Mines and Energy, and the Mining-Energy Planning Unit (UPME), and other key groups such as the Colombian Sustainable Construction Council and CAMACOL, the guild of the construction industry. Inputs received from stakeholders are briefly stated here.

In the meetings with the Ministry of Housing, City, and Territory (MVCT) on March 30 and May 26, 2023, the Ministry highlighted the importance of Resolution 0549 of 2015, indicating that it is in the process of being updated to strengthen the baseline aspects; sub-typologies; water and energy savings percentages; follow-up measures and mechanisms to verify compliance with the minimum percentages and savings measures defined in the Resolution, a formal, practical, transparent and easy to use platform; as this has been one of the weaknesses of the Standard.

The Mining and Energy Planning Unit attached to the Ministry of Mines and Energy (UPME) indicated that the Indicative Action Plan of the Rational and Efficient Energy Use Program (PAI-PROURE) is one of the leading public policy guidelines of the country. The objective is to promote energy efficiency throughout the entire cycle, including production and consumption in the different sectors and activities of the economy. PROURE defines sectoral energy-saving goals, and the energy efficiency actions and measures to achieve them. One of the most important steps taken by the national government to move forward to construct highly efficient buildings is in the latest version of the PAI-PROURE 2022-2030 (Resolution 40156 of 2022 of the Ministry of Mines and Energy), highlighting the inclusion of sustainable construction.

Parallel to the above, meetings and political consultations were held between the consulting team and construction guilds on the regulatory framework at the national level and its application in the cities. The indicators do not consider the regional and local frameworks, and the values do not consider the thermal floors of the country.

The Colombian Sustainable Construction Council (CCCS), during the consultations (April 12, 2023, and July 6, 2023, among others), highlighted the importance of articulating the project with the national roadmap for Zero Net Carbon buildings (where the CCCS is a leader and critical advisor) and the energy labelling system for buildings, initiatives led by the Ministry of Environment and Sustainable Development and the Ministry of Mines and Energy, respectively.

During the consultation with CAMACOL on June 5, 2023, the guild indicated that it has several regional offices, an important aspect to guarantee the regional presence of the project and its implementation. It has relevant data on current dynamics and trends in the sector to inform inputs for replicability in 11 other cities, beyond the 3 initially targeted by the project.

The consultation with academia was with the director of the master?s and Ph.D. program in Electrical Engineering at the National University of Colombia in Bogota. He made important recommendations about the project concerning energy savings and efficiency options and, above all, reduction of emissions in public spaces, remote management for the control of the luminaires - programming on and off, motion sensors and dimming; the agency responsible for defining these elements, as well as the characteristics of public lighting is the Ministry of Mines and Energy. Consultations were also held on the 6th of July 2023 with the University of Valle in Cali regarding the energy efficiency component of the Cali Sustainable Construction Manual and Energy Labelling Projects for Social Housing.

The consultation with the Capital District (Secretariat of the Environment, Environmental Business Management, and Eco urbanism departments) provided information on the actions of this Secretariat to implement the District's Climate Action Plan 2020-2050, the road map for the capital city to meet climate change mitigation and adaptation goals over the next 30 years.

Please provide the Stakeholder Engagement Plan or equivalent assessment.

Stakeholder Engagement Plan (SEP)

The SEP analyses the levels of influence and ensures the participation of all stakeholders throughout the project cycle. The plan's content requires validation through the consultation activities deployed in the project. The consultation processes are based on established guidelines and consider ethnic routes, gender focus, inclusive participation, disclosure, communication, and due access to information for informed participation. Stakeholder participation influences early decisions concerning the environmental and social risks of the project, for adequate management and monitoring of the measures. The scope and frequency of participation will be according to the nature and management of the project. The participation process shall be documented, including measures to maintain confidentiality and data protection when required.

The project will aim to maintain dialogue with the relevant government ministries, departmental and municipal governments, the private sector, local community groups, NGOs, academia, and international organizations. The SEP embraces the definitions of ?stakeholder? and ?stakeholder engagement? as defined in the GEF Policy on Stakeholder Engagement:

Stakeholder means an individual or group that has an interest in the outcome of a GEF- financed activity or is likely to be affected by it, such as local communities, Indigenous Peoples, civil society organizations, and private sector entities, comprising women, men, girls, and boys.

Stakeholder Engagement means a process involving stakeholder identification and analysis, planning of Stakeholder Engagement, disclosure of information, consultation and participation, monitoring, evaluation and learning throughout the project cycle, addressing grievances, and on-going reporting to stakeholders.

Consistent with the definitions above, the SEP seeks to ensure that stakeholders are identified, and their meaningful participation and involvement secured through-out project preparation and implementation; those consultations are gender-responsive and free of manipulation, interference, and/or discrimination;

and those stakeholders have access to all relevant project information in an easily accessible and timely manner.

During project implementation, stakeholder participation will include the provision of co-financing, gender-sensitive participation of technical staff in workshops, training, and tool development, facilitation of local project events and processes, project oversight through participation in the Project Steering Committee (PSC) or Technical Committee (TC), as sources of data, technical expertise, and knowledge management through the institutionalization of project results and lessons learned to enable scaling up, replication and sustainability. Guarantee the inclusion and commitment of the construction associations, financial entities (first and second-tier banks), educational institutions, and research centres in the execution of the project through their direct participation in the project's consultation spaces. Include representatives of Neighbourhood Associations (Juntas de Acci?n Comunal), Women's and Youth Associations, and ethnic group organizations active or present in the project's area of influence to ensure participation in decision-making regarding interventions that may affect their interests. Stakeholder participation in project implementation will be gender-sensitive, as demonstrated and detailed in the Gender Mainstreaming and Action Plan. Stakeholder engagement activities are integrated across all project components, and as such, the budget required for implementing the SEP is not a stand-alone budget and is integrated in budgeted project activities.

All stakeholders have an equal right to participate in the issues of interest related to the project. Therefore, the available participation mechanisms are open, transparent, inclusive, and adapted to the cultural characteristics of the stakeholders and the project's context for each city. The SEP incorporates actions to support disseminating and accessing adequate, relevant, and permanent information on the project, including its objectives, scope, impacts (both positive and negative), execution deadlines, and consultation processes. Share this information through various channels: websites, meetings, public consultations, printed materials such as brochures, and social networks (Twitter, Facebook). The project will keep stakeholders informed of any changes, updates, or additions related to works and others. The following participation mechanisms will be implemented by the project.

Dissemination of information: The Ministry of Housing and the Ministry of Environment, will support the dissemination and disclosure of information through all its communication channels, and it is the responsibility of each of the municipalities to ensure the dissemination and disclosure at the local level.

Public consultations: To strengthen the democratic environment of the project and ensure the participation of stakeholders, the project contemplates the development of spaces or dialogue sessions at least once during the preparation of the social and environmental risk analysis and as often as required throughout the project cycle. The consultation processes are framed within the guidelines and criteria of financing agencies and Colombian regulations to ensure effective participation in decision-making, adequate information on impacts (negative and positive), differentiated mitigation measures, and risks.

Public consultations for vulnerable groups affected: It is necessary to take into account that if the specific projects in each city contemplate actions related to involuntary resettlement, direct impact on indigenous peoples, ethnic territories (Afro-descendant community councils, recognized by the Ministry of the Interior), historical and archaeological heritage, cultural heritage, the government entity of each city must apply procedures for disclosure and focused and specialized consultations for the vulnerable groups affected, following the standards and guidelines established for such purpose.

Mechanisms for Attention, Petitions, Complaints, and Claims. The "Energy Efficiency for the Transition to carbon-neutral cities in Colombia" project will have a mechanism that provides information to stakeholders and the community in general. It will receive petitions, concerns, complaints, and claims and provide a response to offer relevant and timely information. It will also promote conciliation and Resolution whenever necessary.

Consistent with the engagement approach described above, the project?s Stakeholder Engagement Plan is summarized in Table 7 below.

Table 7. Stakeholder Engagement Plan

Stakeholder Group	Key expectations	Recommendation	Commitments	Media/Communication actions
National and local government entities	Technical inputs. Support in convening multi-stakeholders. Validate project results (legal and institutional agreements). Facilitate the relationship with district and municipal administrations. Improve inter-institutional linkages and data exchange. Sustainability of project products.	Maintain a close dialogue and joint work with key national, district, and municipal institutions, such as the Ministries of Housing, Mines and Energy, and Environment, and with the private sector, especially those organizations related to the sector and the social sector. Articulate with existing Intersectoral and Advisory Committees. In particular, the Advisory Committee of the Zero Carbon Net Buildings Accelerator Project. Consolidate and regulate the role of territorial entities (and CAMACOL) as promoters of sustainable construction during and after the project cycle. Implement measures to share data transparently. When possible, hold virtual meetings for time and resource efficiency.	Share progress reports with the institutions at the defined periodicity. Convene consultation meetings periodically. Prepare and conduct training workshops for public entities on the project's ownership and exit strategies. Update the websites of ministries, districts and municipalities, and unions (civil society) with the project's progress and results (mayor's offices and other bodies).	Convening of meetings, workshops, or formal workshops via email or other means established under administrative procedures.

Stakeholder Group	Key expectations	Recommendation	Commitments	Media/Communication actions
Institutions, organizations, local agencies	Validate project interventions in the field according to institutions, procedures, and community practices. Joint decisions regarding where and when to work with beneficiaries under specific project activities. Facilitate strengthening relations and coordination between local representative institutions and the institutional framework. Facilitate strengthened community decision-making procedures with an intercultural and gender approach and the meaningful consultation rights of ethnic peoples. Mitigate the gender gap in community decision-making processes.	Establish or strengthen the capacity of community committees. Facilitate the role of public entities for dialogue with the local institution and others to contribute to public governance and project ownership. Improve dialogue with territorial representative institutions. Ensure the intervention of the Project Safeguards Expert in all planned consultations and workshops with territorial representative institutions. Conduct consultation and workshops following the Participatory Plan of the existing ethnic peoples in the territory.	Realize consultation events with individuals and capacity-building workshops (limit virtual meetings, except where noted). Consultation and reporting of information in community assemblies and through other territorial representative institutions, as appropriate. Prepare culturally appropriate written information according to the Project Safeguards Expert Assessment. Produce technical and culturally appropriate project brochures and documents. Progress reports, project decisions, and data use decisions.	Make formal calls, send emails, or use other means following the community's consultation rules. Following the Project Safeguards Expert's assessment , utilize culturally appropriate and in the local language, if necessary. Guarantee the right to free, prior, and informed consultation and consent, where appropriate. Prioritize traditional practices over those of the project and strengthen them. Include gender-sensitive affirmative actions to strengthen women's effective participation.

Stakeholder Group	Key expectations	Recommendation	Commitments	Media/Communication actions
Parties affected by the implementation of the specific projects in each city	Technical inputs. Define and validate project interventions. Develop capacities in sustainable practices, biodiversity monitoring, and financing. Activities adapted to the beneficiaries. Meaningful consultation rights of ethnic peoples strengthened. Mitigate the gender gap in the value chain.	Coordinate with the Project Safeguards Expert in consultations with beneficiaries and stakeholders. Designate authorized persons to communicate (in general or particular) or an authorization procedure. Carefully evaluate the days and times of field visits, considering holidays, availability of women, and others, following consultations with individuals and the judgment of the Project Safeguards Expert. Disseminate information (e.g., send digital brochures by WhatsApp) and conduct a capacity-building workshop to inform how the Project's grievance mechanism works.	In-person consultation events and capacity-building workshops (limiting virtual meetings, except where noted). Follow the Project Safeguards Expert's assessment and recommendation and utilize culturally appropriate and in the local language. Produce technical, culturally appropriate brochures and project documents. Define and implement a project website and grievance mechanism.	Follow the Project Safeguards Expert 's assessment and recommendations, and utilize culturally appropriate and in the local language, in the local dialect, if necessary. Define and implement affirmative actions to promote the participation of the most disadvantaged people. Include gender-sensitive affirmative actions to strengthen women's effective participation.

Stakeholder Group	Key expectations	Recommendation	Commitments	Media/Communication actions
Affected and vulnerable groups	Improve the living or working conditions of the most vulnerable. Mitigate the gender gap in the value chain.	Implement the Project's vulnerability approach to involve and benefit predominantly women, youth, older adults, highly marginalized people, and other disadvantaged groups. Ensure the involvement of the Project's Safeguards Expert in all planned consultations and workshops.	Specific face-to-face training workshops. Follow the Project Safeguards Expert's assessment and recommendation and utilize culturally appropriate and in the local language. Produce technical, culturally appropriate brochures and project documents. Project grievance mechanism	Project Safeguards Expert Assessment. Implement positive actions and strategies to reach the most vulnerable stakeholders. Include gender-sensitive affirmative actions to strengthen women's effective participation.
ONGs, civil society, and academia	Technical inputs. Promote ownership and exit strategies for the sustainability of project results. Project results are known to all stakeholders in the (sustainable) construction value chain.	Proceed with the involvement of entities involved in the project processes. Whenever possible, hold virtual meetings for the sake of time and resource efficiency.	Carry out face-to-face and virtual consultation events. Produce technical and culturally appropriate project brochures and documents. Maintain a project website and grievance mechanism.	With a gender focus, with positive measures to strengthen the effective participation of women.

Stakeholder Group	Key expectations	Recommendation	Commitments	Media/Communication actions
Project coordination unit.	Project implementation as planned. Provide for overall project leadership, aligned with the government's political agenda, related to the value chain of the (sustainable) construction sector. Effective team communication and coordination. Sustainability of project deliverables.	Communicate the labour policy to the contracted experts at the beginning of the process. Promote and facilitate feedback between project experts and external consultants through regular virtual meetings, presentation of results, and lessons learned. Strive to bring together all the fieldwork of different experts in one day/visit to achieve efficiency in the use of resources and not make excessive demands on stakeholders' time. Provide all external project consultants with general training on project results, opportunities, risks, best practices, and safeguards.	Emails WhatsApp Google Drive	Following established Project coordination procedures and tools.

The objective of the SEP Monitoring Program is to establish mechanisms to follow up and evaluate the implementation of the project in a coordinated and articulated manner and permanently observe the evolution of the interventions in the three cities throughout the project cycle. The monitoring of the SEP is a fundamental management tool for the project that allows for the follow-up of the performance of outreach activities, pre-consultation (if necessary), and consultations and provides information on compliance with results to ensure decision-making for corrective measures. Table 8 presents the corresponding monitoring plan following the GEF minimum standards.

Table 8. Stakeholder Engagement Monitoring Plan

	Indicator	Objective	Responsibility for monitoring and reporting	Reporting period
1	Number of national, district, and municipal government entities identified in the SEP involved in the project implementation phase	100% of entities consulted	Safeguards expert and project executing unit	Annual
2	Number of ONGs and civil society organizations identified in the Stakeholder Participation Monitoring Plan involved in the project implementation phase	100% of entities consulted	Safeguards expert and project-executing unit	Annual
3	During the project implementation phase, many stakeholder engagement events were held (e.g., meetings, face-to-face, and virtual workshops).	To be determined at the beginning of the project	Safeguards expert and project executing unit	Annual
4	Number of men and women involved in the project's implementation phase.	To be determined at the beginning of the project	Safeguards expert and project executing unit.	Annual
5	The number of reports, complaints, and information requested.	100% of complaints answered	Safeguards expert and project executing unit	Annual
6	Number of Project information materials published (brochures and guides or other technical documents).	To be determined at the beginning of the project	Safeguards expert and project executing unit	Project closing

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

Indigenous Peoples

The situation of ethnic peoples in Colombia

The situation of ethnic peoples in Colombia is complex and varied, as the country has great ethnic and cultural diversity. Ethnic peoples include indigenous, Afro-Colombian, Raizal, Palenquero, and, to a lesser extent, Rom communities.

Historically, these groups have faced discrimination, exclusion, and violence. Today, they continue to be exiled from their rural territories where they have faced the harshness of the armed conflict and the presence of illegal armed groups, forcing them to settle in cities or urban centres, significantly affecting their autonomy, their systems of self-government, processes of organization of nature-culture relations, and the dynamics of their cultural identity construction.

According to data from DANE of the country's total population (National Population and Housing Census, 2018), in Colombia, there are at least 115 indigenous peoples and more than 65 native languages that are part of the cultural and intangible heritage of the country. Colombia is one of the most representative countries in terms of population and diversity of native peoples in the Americas. These communities represent 4.2% of the total Colombian population. Afro-descendant, Raizal, and Palenquero communities represent 6.8% (see Table 9).

Table 9. Population of Ethnic Groups in Colombia (DANE, CNPV 2018).

Total Population	Indigenous	Gypsy or Roma	Raizal of the Archipelago of San Andres, Providencia, and Santa Catalina	Palenquero (a) from San Basilio	Black, Mulatto, Afro-descendant, Afro-Colombian
43.835.324	1.876.752	2.606	25.344	6.635	2.942.859

Although the country has made efforts to protect the rights of ethnic peoples and promote their participation in the political and social spheres, these continue to be insufficient. The 1991 Constitution recognized the rights of indigenous and Afro-Colombian peoples and created institutions such as the National Human Rights Commission, among others, to address human rights violations and provide reparations. However, ethnic peoples still face numerous challenges.

The situation of ethnic peoples in the project intervention area

Barranquilla

In the district of Barranquilla, approximately 5% of the citizens (about 60 thousand people) recognize themselves as members of an ethnic group; in the city are settled Afro-Colombian, Raizal, black and Palenquero communities. The District Mayor's Office of Barranquilla recognizes indigenous populations such as the Mokan?, Zen?, and Inga through an administrative act that today benefits inhabitants of the towns of Malambo, Galapa, Tubar?, Baranoa, Puerto Colombia, and Usiacur?. Other indigenous protected groups include Wayuu, Koguis, Arawacos, the Kankuamo reservation, Kaamash-hu, and the Rom or Gypsy population.

In addition to the presence, as mentioned above, of indigenous groups and the representative Mokan? ethnic group, Barranquilla is the third city in the country with the largest Afro population, surpassed only by Cali and Cartagena. The territory has been home to a black population since it began to develop as a place of free people in the eighteenth century. However, much of the currently settled population comes from the Palenque de San Basilio and other towns in Atl?ntico, Cesar, Bol?var, and Magdalena departments.

Some women in these communities have been selling corn derivatives and making handmade sweets for several generations. This trade was initiated in Barranquilla at the beginning of the 20th century by the first women who arrived from the Palenque de San Basilio. Furthermore, their institutional objectives are similar, focused mainly on the struggle for the rights of Afro-Colombian communities by strengthening cultural identity, which they do through training and cultural projects. They mainly consider the solution to the population's needs and the recovery and safeguarding of their traditions.

Santiago de Cali

Cali concentrates 17% of the country's urban black population. It is a predominantly Afro-Colombian city with an outstanding weight in the national total. It is considered the first municipality with a black population, which has to do with its historical role and especially in the 70s when it became the main epicentre of Afro-Colombian immigration in the country, even above municipalities such as Cartagena, Barranquilla, and Quibd?. In contrast, the data on the indigenous population is marginal. Six indigenous peoples live in the city: Kof?n, Misak-Gu?mbianos, Quichua, Inga, Yanacona, and the Nasa. The city has public policies for Afro-Colombian and indigenous populations.

These groups have the most significant social lags and access to essential health, housing, education, and employment. According to the "Diagn?stico Cu?ntos Somos, C?mo vamos" (DANE figures cited in Afroam?rica XXI, 2011), only 22.8% of the indigenous population has incomplete primary education at the highest level, while 22.6% has an incomplete high school. The illiteracy rate is 3.6% for Indigenous men and 6.2% for Indigenous women. For the other group: 5.5% for Afro-descendant men and 6.1% for Afro-descendant women. According to the measurement of UBN (Unsatisfied Basic Needs), of the total number of people with UBN in Cali, 15.85% correspond to Afro-descendants and 11.97% to indigenous peoples.

Pasto

Like most of the country's municipalities, the inhabitants of Pasto are ethnically diverse and contribute to the rich cultural diversity. According to DANE data, out of a total of 352,326 people censused in the municipality of Pasto (2018), the ethnic population that recognizes itself as indigenous is 2.3% (8,103 people); as Afro-Colombian 0.9 percent (3,170 people) and Rom Gitanos 0.03% (84 people) and of no ethnic group 96.8 percent (363,973 people).

The city recognizes the Laguna Pejendino indigenous reservation and the Jenoy, Obonuco, Mocondino, and Catambuco indigenous cabildos. There are other ethnic communities settled in the municipality, in the context of the city, such as the Inga people of Santiago, the Aw? people, the Kumpania Rom Gitana of Pasto, and the Afro-Colombian population, which have been developing their organizational processes based on their dynamics, traditions, uses, and customs.

An Indigenous Peoples Framework Plan (IPFP) inclusive of a Grievance Redress Mechanism has been prepared and is presented in Annex M.

Select what role civil society will play in the project:

Consulted only; No

Member of Advisory Body; Contractor; Yes

Co-financier; Yes

Member of project steering committee or equivalent decision-making body; Yes

Executor or co-executor; Yes

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

The situation of women in Colombia

Colombia has made significant progress in promoting gender equality and women's empowerment. Its commitment through the ratification of different international treaties has allowed it to progress in designing a solid policy framework that fosters the guarantee of rights, equality, and the empowerment of women at all levels: national, regional, and local. The following Table 10 is the international normative framework ratified by Colombia, as well as a compilation of policy instruments and laws related to women's rights and human rights in Colombia:

Table 10. Regulatory Framework

Normative Instruments/Binding Treaties/International Conventions/Policies and Laws	Year	Relevance to the Project
Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)	1982	It includes measures to promote equality policies between men and women, boys, and girls, in all spheres of sustainable development. In turn, it was reaffirmed by the United Nations General Assembly in the Global Action Plan for Sustainable Development "2030 Agenda for Sustainable Development". Within this framework for action, the Project is consistent with the provisions of ratified normative instruments, national agendas, and policies on women's rights and the CAF Strategy for Gender Equality.
Beijing Declaration and Platform for Action	1995	The Platform for Action is the roadmap for achieving the empowerment of women in the different spheres related to their rights, encouraging governments to adopt measures and initiatives aimed at providing an effective response to the impact on women in the following areas: poverty, education, health, violence against women, armed conflicts, economy, participation and exercise of power, environment, elimination of any discriminatory practice based on Gender. In harmony with this guiding instrument, the Project is consistent with the commitment to contribute to equal opportunities and women's empowerment.
Inter-American Convention on the Prevention, Punishment, and Eradication of Violence against Women "Convention of Belem Do Para."	1996	It promotes the protection of women's civil, political, economic, environmental, social, and cultural rights. It is recognized that violence against women impedes the entire exercise of these rights. The Project incorporates actions consistent with the provisions of the Convention to contribute to the elimination of discriminatory practices and the transformation of social and cultural behaviours and practices related to Gender.

Normative Instruments/Binding Treaties/International Conventions/Policies and Laws	Year	Relevance to the Project
2030 Agenda for Sustainable Development - United Nations	2015	**ODS 5.** Gender Equality **ODS 11.** Sustainable Cities and Communities Indicators for achieving gender equality, empowering all women and girls, and Making cities and urban human settlements inclusive, safe, resilient, and sustainable. In line with the Agenda for Sustainable Development, the Project promotes and considers the respective obligations regarding gender equality and women's empowerment.
Implement the Montevideo Strategy for the Regional Gender Agenda towards 2030 within the framework of Sustainable Development.	2016	Carry out the roadmap to achieve the 2030 Agenda for Sustainable Development at the regional level from the perspective of gender equality, autonomy, and women's human rights. The Project will act following women's human rights standards and labour, environmental, participation, parity, and transparency standards involving all sectors and critical stakeholders throughout the entire cycle.
Quito Declaration - The New Urban Agenda Habitat III. United Nations Conference on Housing and Sustainable Urban Development.	2016	This agenda works as an accelerator for the Sustainable Development Goals, especially SDG 11. Make cities and urban human settlements inclusive, safe, resilient, and sustainable. The gender mainstreaming action plan includes actions aimed at harmonizing with the New Urban Agenda to promote the prevention of all forms of discrimination and violence against women in the project cycle.
XI Regional Conference on Women in Latin America and the Caribbean: Brasilia Consensus. Economic Commission for Latin America and the Caribbean (ECLAC).	2010	It refers to actions to achieve women's autonomy and economic empowerment in the labour sphere; strengthening women's citizenship and participation in decision-making and spheres of power; access to technology; eliminating all forms of violence against women; and capacity building. The projects integrate gender perspectives. The design is consistent with the guidelines derived from the Consensus.

Normative Instruments/Binding Treaties/International Conventions/Policies and Laws	Year	Relevance to the Project
National Public Policy on Gender Equality for Women - CONPES 161	2012	Guidelines to promote coordinated and intersectoral actions to overcome gender gaps and guarantee a life free of violence for women. In coordination with the public sector and different government agencies at all levels (national, regional, and municipal), the Project incorporates a gender perspective.
Public Policy on Gender Equity for Women: Towards the Sustainable Development of the Country - CONPES 4080	2022	Policy instrument that proposes actions aimed at increasing women's opportunities for economic autonomy in various areas: parity in participation in public or elected positions, including community scenarios; promotion of public interventions to improve women's physical and mental health; comprehensive attention to violence against women; strengthening the role of women in peacebuilding and the security agenda - United Nations Resolution 1325; mainstreaming the gender perspective in strategic issues.
CONPES 3718 National Policy of Public Space	2012	Promotion of public space as a fundamental component of comprehensive neighbourhood improvement and urban renewal programs or projects. Especially in those cases where a more significant social and environmental impact is guaranteed, and urban densification, the recovery of historical centres, and the improvement of public safety conditions with a gender perspective are promoted.
National Development Plan 2022 - 2026 "Colombia World Power of Life."	2022	Chapter "Differential Actors for Change" places women at the center of the policy that ensures the guarantee of rights and the reduction of gender gaps in economic, social, and political matters, as well as the balanced distribution of work between men and women. The PND 2022 - 2026 is the framework of opportunity to articulate the actions of the Project's gender action plan in synergy with the government sector at all levels.
Law 1257 Awareness, prevention, and punishment of forms of violence and discrimination against women	2008	Chapter IV adopts awareness and prevention measures. In coordination with the public sector and different governmental agencies at all levels (national, regional, and municipal). The Project's Gender Action Plan incorporates awareness and prevention measures.

Normative Instruments/Binding Treaties/International Conventions/Policies and Laws	Year	Relevance to the Project
CONPES 4107 - Guarantee to the Special, Industrial, and Port District of Barranquilla to achieve results within the Biodiverciudades and Urban Equity Program framework in Barranquilla.	2022	This CONPES document of favourable concept for financing the Biodiverciudades and Urban Equity program in Barranquilla gives guidelines in component 2. Todos al Parque, on actions for the recovery, activation, and generation of open green public space in the District of Barranquilla, considering the sustainability criteria, safety, accessibility, and appropriation of public space. Within this framework, the promotion of commercial spaces in neighbourhoods with a gender perspective is highlighted.
Public Policy for Women and Gender Equality in the Special, Industrial, and Port District of Barranquilla - Agreement 012	2013	Article 9. Strategies of the Public Policy on Women and Gender Equity in the District: mainstreaming, territorialization, co-responsibility, and communication. Provides guidelines for incorporating a women's rights approach in all stages of the projects of the central, decentralized, and local sectors.
Development Plan of the District of Cali "To Live Life with Dignity" - Decree 0418	2021	Local planning instrument contemplates the development of programs and strategies to: ? Strengthen access to decent housing, generating conditions for easy access to new or used VIP and VIS housing solutions that include a gender approach, contributing to solving the district?s housing deficit. ? Comprehensive habitat and environment improvement to contribute to a dignified life, sense of belonging, reduce social, environmental, and public health risks, and generate sustainable development opportunities for all under equal conditions.
Public Policy for Women and Gender Equality in the Municipality of Pasto - Agreement 020	2007	Local planning instrument that highlights: Economic empowerment of women through the improvement and expansion of spaces for productivity and employment; Eradication of all forms of gender violence in the municipality of Pasto; Deconstruction of the references of machismo and subordination of the feminine; Promotion of comprehensive health that recognizes the diversity of women and the LGBTI community; Strengthening of leadership for the participation of men and women in equality; Articulation of the gender approach in the city; and, Gender-sensitive municipal budgets.
Development Plan of the Municipality of Pasto "The Great Capital" - Agreement No. 005	2020	Local planning instrument that emphasizes its principles: Promote the social inclusion of women and youth as a driving force for the social, cultural, environmental, and economic change required to achieve transformation.

Normative Instruments/Binding Treaties/International Conventions/Policies and Laws	Year	Relevance to the Project
Colombian Low Carbon Development Strategy (ECDBC) - Capacity building program for integrating a gender perspective in climate change management.	2021	To train civil servants and support ministries in the consolidation of installed gender capacities and the design of their sectoral gender public policies, as well as in the development of specific tools to integrate the gender approach in programs derived from the PIGCCS.

Other instruments in the international regulatory framework to be considered:	
IX Regional Conference on Women in Latin America and the Caribbean - Mexico Consensus	2004
II International Conference Safe Cities for Women and Girls - Declaration of Bogota	2004
Consensus of Santo Domingo, XII Regional Conference on Women in Latin America and the Caribbean	2013
Paris Global Agenda of Local and Regional Governments for Equality between Women and Men in Local Life	2013
OECD and G20 Principles of Corporate Governance - An international benchmark for improving the legislative, regulatory, and institutional framework for corporate governance to promote economic and financial efficiency and sustainable economic growth. Recognition, within the framework of corporate governance, of the rights of stakeholders to encourage active cooperation to create wealth and employment.	1999
Pasto 2038 Action Plan "Recorrer el Buen Camino 500 years of tradition" - FINDETER	2012
National Sectoral Plan for Drinking Water and Basic Rural Sanitation. It proposes to promote interdisciplinarity so that the teams implementing this Plan can develop strategies with a differential and gender equity approach. Its differential technical regulations for the formulation of projects explicitly state that the gender equity approach must be considered to resolve inequities against women.	2021
Policy for the Development of Rural Women. CONPES SOCIAL.	1994
National Policy on Women Builders of Peace and Development	2010

Despite all these efforts, the gender gap continues to increase to 71% (0.7100), placing the country in 75th place in the global ranking of the gender gap (2022), which analyses the distribution of resources and opportunities in 155 countries. The global Gender Gap Index makes visible the conditions of

inequality between men and women. It lags in guaranteeing rights and eliminating discrimination against women in the country. According to population projection data from DANE derived from the National Population and Housing Census - CNPV 2018, Colombia has 51.6 million inhabitants concentrated in municipal capitals: 74.8% men and 77.7% women. The urbanization trend implies more significant challenges in access to public infrastructure and essential services (water, housing, energy, education, health, etc.). Regarding socioeconomic status, the Great Integrated Household Survey (GEIH) shows an economic participation rate for the first quarter of 2022 of 63.4%: 76.5% for men and 51.4% for women. The gender parity index (GPI) showed that for every 100 men, 73 women were in the labour force. As for the employment rate (TO), for every 100 men, 67 women were employed. Finally, the unemployment rate (TD) indicates that for every 100 unemployed men, there were 120 women (IPG).

Regarding data by each activity segment, women are concentrated in activities related to typical gender roles: the care economy sector, composed of the education and health branch (18.1%); commerce (21.2%) and artistic, entertainment, and recreational activities (13.7%); while men are more representative in activities such as agriculture (20%) and in the construction sector (11.2%). Women's participation rate in the informal labor market and income level are further affected by the social, economic, and cultural burden of Unpaid Domestic and Care Work (UDCW), significantly limiting financial autonomy. In Colombia, the average number of hours per week dedicated to paid work by the economically active female population (EAP) is 36.9 hours per week, and the daily workload of women is 3 hours greater than that of men. This leads to the conclusion that the gap persists in this area despite the increase in men's participation in some care activities.

The average income for men is higher in most economic activities, except for those related to construction, real estate, transportation, and warehousing. However, these are the activities with the lowest participation of women.
Another aspect associated with women's average income is their level of education. Women with a low level of schooling receive payments 36.8% lower than men. The wage gap between men and women reached 20.8% by 2021.

On the other hand, the femininity index of poverty reveals that for every 100 men in poor households, there are 114 women (2021). Despite efforts to reduce poverty, men and women do not benefit equally. On the contrary, women need help concerning access to income, the labor market, productive assets such as land tenure, financial inclusion, and distribution of domestic and unpaid care work, which fails to ensure their economic stability.

Gender gaps in the construction sector and the value chain in Colombia

The contribution of Colombia's construction sector to the economy is significant due to its links with different productive activities, especially its capacity to generate employment. Therefore, it is essential to promote a gender-sensitive sustainable value chain. Although some progress has been made in this area, the gender gap in this sector is undeniable. The study "Characterization of Women in the construction sector" results show women's low participation, which in 2021 reached only 6% at the national level. The wage gap and labour linkage are the most problematic factors that worsen the

feminization of poverty even more, especially in municipal capitals. Similarly, the weak equality efforts in the sector hinder, to some extent, the decision-making process to promote a sustainable and more holistic value chain that integrates measures that benefit men and women equitably.

The working conditions faced by women in the sector continue to be precarious. Sixty-six percent of the women work as assistants at the construction site, kitchen, and cleaning services, revealing very marked gender roles in the activities assigned to them and the occupational gap. The average income does not exceed two minimum legal salaries (SMLV) compared to men, between 2 and 4 SMLV. In addition, men are more often employed as site leaders, commercial services and sales, and site managers. 84.3% of women say that job growth opportunities in the sector are low, highlighting the "glass ceiling."
Finally, data related to gender-based violence and safety at work show that 14.6% of women have felt insecure in the workplace just because they are women, and 12.8% have suffered or know of cases of gender-based violence. These identified disparities constitute challenges that require the commitment of all the actors involved in the sustainable building sector in Colombia. It is essential to highlight that instruments such as the National Zero Carbon Net Buildings Sheet are designed to trace the path toward the sector's decarbonization, which also integrates the gender equity component.

The situation of women in the City of Barranquilla

Barranquilla, located in the north of Colombia, is part of the metropolitan area that includes four other municipalities: Soledad, Galapa, Puerto Colombia, and Malambo. According to data from the National Population and Housing Census (CNPV), it has 1,115,490 inhabitants, of which 52% are women. The index of femininity corresponds to 108.7. The highest concentration of women is found in the age range between 20 and 39 years (31.5%), of which 21.5% are heads of household. Regarding educational level, 27.7% of women have completed high school; 16.5% have university studies, and only 3.2% have a postgraduate degree.

According to the Fundesarrollo report "Radiography of the quality of female employment in Barranquilla,"; 56.3% of women participate in the labour market compared to 74.1% of men, which places Barranquilla in fourth place among the cities in Colombia with the most significant participation gap. The labour informality rate is 55.2%, with a higher proportion of women in this condition. The average monthly income for women is 13.7% below that of men.

Although the multidimensional poverty index - MPI (2022) places Barranquilla 2.7 percentage points below the national average (12.9), the challenges regarding gender gaps in the different economic, social, environmental, and political spheres require comprehensive approaches and the incorporation of effective measures to accelerate equality between men and women.

The situation of Women in the City of Cali

Santiago de Cali is a remarkable district city in the country's southeast. With about 2,297,230 people (head and rural dispersed), 52.4% are women, most of whom are heads of household. Even though the working-age population of women has been increasing in the last five years, women's labour and productivity situation in Cali is still a cause for concern. A report by the Center for Economic

Intelligence and Competitiveness - CIEC, called "Inequality of Women in the labour market in Cali," shows that 52% of women participate in the labour market compared to 68% of men. The labour informality rate is 49.9%, with a higher proportion of women in this condition: women at 50.9% compared to men at 42.4%, with an average income of 22.8% below that earned by men.

The participation of women in the labour market in Cali and its metropolitan area is mainly concentrated in the sectors of commerce (23%), industry (15.5%), and lodging and food services (11.5%). However, there are activities where women's participation predominates compared to men's; these are accommodation and food services, other service activities, human health care activities, individual household activities, administrative services activities, and education. Closely related to stereotypical activities or those that have historically been assigned to the female Gender. In the differentiated evolution of employment in the city, it also stands out; for example, 39% of the real estate activities branch is occupied by women, and in the case of the construction branch, only 4.8% of women work in this sector in the city of Cali. Regarding the percentage distribution of hours worked, on average, 26.6% of employed women work between 21 and 40 hours. However, women participate in the labour market for fewer hours per week than men. 57.7% of the women worked more than 40 hours per week.
Forty-three percent of the women have a high school education, and 35% have higher education. These two groups comprise 78% of employed women in Cali and its metropolitan area..
In the case of the situation of violence to which women are exposed in Cali, the data are very worrying. According to information from the Inter-institutional Committee on Violent Deaths of Santiago de Cali, cases classified as femicides have been increasing, and according to the Attorney General's Office - Cali section, only 50% of the total number of patients are classified as femicides, leaving the processes exposed to impunity. These figures show the problems women face exposed to highly violent contexts and patterns of homicidal violence in the local environment. Another data of great concern corresponds to the increase in the number of reports of sexual crimes, whose victims are women and girls in Cali and its metropolitan area.
The situation of women in the City of Pasto

Pasto is in southwestern Colombia. According to data from the National Population and Housing Census (CNPV), it has 455,678 inhabitants (head of the city and dispersed rural area). Women account for 51.6% of the population, the majority of whom are heads of household and have the highest unemployment rate in the city, 1.6 times higher than men. According to the Nari?o Gender Observatory report "Bolet?n Cifras en Contexto en Pasto," 51.7% of women participate in the labour market compared to 65.5% of men, which places Pasto in fifth place among the cities in Colombia with the most significant participation gap. The labour informality rate is 57.5%, with a higher % of women in this condition, 58.4%. Of the total number of women, only 14.78% have a university education, and only 3.77% have a postgraduate degree.

The femininity index corresponds to 118.4, which highlights the gaps in participation, employment, and unemployment rates and the sexual division of labour in the economic activity branches, as well as the wage gaps.

Based on DANE information for the quantification of time dedicated to Unpaid Care Work, women in the city of Pasto reserve ten times more time than men to care for minors, 20.5 times more than men to care for older adults or people with disabilities, and 28.4 times more than men to unpaid household chores. This panorama impacts the overall Labour Market Participation Rate, given that women struggle to reconcile care activities with those they perform in any paid occupation.
The multidimensional poverty index - MPI (2022) places Pasto 4.7 percentage points above the national average (12.9); gender gaps in the economic, social, environmental, and political spheres require comprehensive approaches and effective measures to accelerate equality between men and women. From an intersectional perspective, women from ethnic communities have a notably higher incidence of multidimensional poverty, increasing the gender gap for these groups. The most significant disparities between women from ethnic communities and those who say they do not belong to any ethnic group are observed in access to income generation, housing, and household utilities (inadequate excreta disposal, inadequate wall material, inadequate flooring material) and health.
Another important aspect of this analysis is women's citizen participation in the city of Pasto. According to data from the Gender Observatory of Nari?o, the presence of women in the public corporations of popular election at the communal level, called Community Action Boards, reaches 39%. This suggests that the representativeness in the 16 neighbourhoods recognized in the municipality and significant local relevance demonstrates progressiveness in gender equity in participation at this level.

Action Plan for gender mainstreaming

The proposed actions aim to address the gender perspective throughout the project cycle, recognizing the importance of women in solving problems in their communities and the role of participation in this type of sustainable urban-regional development intervention. In addition to mitigating the negative impacts and enhancing the positive effects that the development of the Project may have on women in the three prioritized cities. Although this type of sustainable infrastructure project that contributes to the goals of zero carbon emissions does not establish a primary objective to promote change in gender relations or encourage social changes in that sense, it does impact directly or indirectly this group of people; therefore, it is necessary to ensure alignment of the Project's purpose with an effective response to the needs and interests of women in the area of influence and the city in general. That said, the Project represents an opportunity for the infrastructure to contribute to overcoming gender gaps.
Based on the above, the document follows the following stages for its formulation: i) situational analysis of gaps at the national, regional, and local levels and ii) joint definition with gender focal points in the three cities of general actions in harmonization with local gender policies iii) action plan for gender mainstreaming in the Project.

In this preparation process, a documentary review of the Project was conducted, identifying the actors involved, their characteristics, and the scope of their roles within the framework of the Project. Subsequently, national, regional, and local priorities were identified regarding Gender and women's rights applicable to the project scenario, via a stakeholder validation workshop which also sought to identify how men and women can access the benefits of the Project equitably, in addition to the prioritization of strategic areas and actions for gender mainstreaming.

The Objective of the Plan

Integrate the gender perspective in the Project practically and strategically to ensure the expected benefits from the economic, social, environmental, welfare and comfort levels, sustainability, and increased resilience are distributed equitably from access and control for men and women.

Gender focus in project activities

Table 11 systematizes the different activities of the Project, identifying in the column "Gender Approach" some guidelines on how the activities should be implemented to ensure their contribution to the reduction of the gender gap in the Value Chain, together with a proposal of indicators that support this gendered approach. In addition, the following measures are foreseen as cross-cutting measures for the entire Project:

- Hire a specialist to implement, monitor and report on the Project's Safeguards Approach, especially the Gender Action Plan, the Indigenous Peoples Framework (IPF), and the vulnerability approach in a cross-cutting manner in all Project interventions, whenever technically feasible.
- Gender sensitization of critical stakeholders to eliminate unconscious prejudices and biases in the Project. Promoting sensitization of all professionals who will develop the Project is necessary.
- Strengthen the role of women in the construction value chain and other productive chains impacted by project development.

The Project's Grievance Redress Mechanism has modalities for receiving complaints anonymously through physical mailboxes placed in places strategically designated by women for women.

Table 11. Project?s Gender Approach

Relevant Project Output	Gender Approach	Indicators & Targets	Timeline	Estimated Gender Budget (USD)

Output 1.1.1: National standard developed and adopted for energy efficiency in buildings and public spaces	Diagnostic documents, situational analysis of regulatory/normative frameworks, and generation of recommendations incorporate information disaggregated by sex and age group. The Project's gender mainstreaming strategy is reflected in the products derived from consultancies, technical assistance, and representation in ministerial roundtable.	**Indicator:** % of Diagnostics, situational analyses, plans, technical guidelines, tools, or others in the Project are prepared with Gender and gender safeguards and safeguards. **Target:** 100% of Diagnostics, situational analyses, plans, technical guidelines, tools, or others are Gender sensitive.	Year 1	Budgeted in technical activities and staff time.
Output 1.1.2: Monitoring, reporting, and verification mechanism to guarantee the implementation of the norms, standards, and protocols for energy-efficient buildings and public spaces.	Design information systems for reporting and data with a gender perspective to identify gaps and support decision-making.	**Indicator:** % of information systems incorporate a gender perspective for the identification of gaps to support decision making **Target:** 100% of the actions and measures suggested for gender mainstreaming are included in the monitoring systems.	Year 1-5	Budgeted in M&E as part of project?s standard reporting procedures.
Output 1.1.3: Plans for energy-efficient buildings and public space in Barranquilla, Cali, and Pasto formulated and under implementation.	Energy efficiency strategies, manuals, and sustainable construction criteria ensure the integration of gender issues.	**Indicator:** % Energy efficiency strategies, manuals, and sustainable construction criteria incorporate gender issues. **Target:** 100% of energy efficiency strategies, manuals, and sustainable construction criteria incorporate gender issues.	Year 1-4	Budgeted in technical activities and staff time.

Output 1.1.4: Capacity Building Program inclusive of technical assistance and training for implementing energy-efficient buildings, public space, and green infrastructure developed and implemented.	The training programs incorporate gender and diversity dimensions to contribute to the elimination of social barriers and stereotypes in the learning scenario.	**Indicator:** % of training programs promoted within the Project framework incorporate gender and diversity dimensions. **Target:** 100% of training programs promoted within the Project framework incorporate gender and diversity dimensions. **Indicator:** % of women participating in training, workshops, and knowledge transfer workshops with a gender perspective. **Target:** At least 50% of women's participation in training and capacity-building processes with a gender focus in the Project.	Year 1-2	Budgeted in technical activities and staff time.
Output 1.1.5: Virtual platform for evaluating projects, works, or activities of energy-efficient buildings in public space designed and implemented.	Application of differentiated user analysis tools to be incorporated in designing a virtual platform to evaluate projects, works, or activities of energy-efficient buildings in public space designed and executed.	**Indicator:** % tools, techniques, and methodologies for gender-differentiated analysis are incorporated into the virtual platform for project evaluation. **Target:** A virtual platform for project evaluation incorporates gender-differentiated analysis of users.	Year 2-5	Budgeted in technical activities and staff time.

Output 1.1.6: Financing strategy for energy efficiency projects with public resources and financial mechanisms through a triple alliance between the National Government, the construction sector, and the financial sector.	With the leadership of the professional expert in social safeguards and Gender, ensure the incorporation of the gender perspective in existing and new mechanisms, policies, financing criteria, and decision-making processes.	**Indicator:** % of policies and financing criteria evaluated with a gender app. **Target:** 100% of policies and funding criteria are evaluated with a gender approach.	Year 1-5	$5,000 for App development and launch. Staff time.
Output 2.1.1: Design of (6) projects (in phase I Profile or in phase II Pre-feasibility) on new energy-efficient buildings and renovations in public spaces in Barranquilla, Cali, and Pasto	The professional Safeguards expert ensures the incorporation of gender actions and measures in applying the Sustainable Construction Manual criteria and the monitoring and impact assessment systems of the energy efficiency and sustainability criteria for buildings.	**Indicator:** # of gender measures and actions are included in the manual on sustainable construction and impact monitoring and evaluation systems for energy efficiency and sustainability criteria for buildings. **Target:** 100% of the gender measures and actions are included in the manual on sustainable construction and impact monitoring and evaluation systems for energy efficiency and sustainability criteria for buildings.	Year 1-5	Budgeted in technical activities and staff time.
Output 2.1.2: Three (3) co-financed pilot projects to demonstrate energy-efficient buildings in Barranquilla, Cali, and Pasto.	Differential business models for the construction of Social Housing with EE and Sustainability standards to contain clearly defined gender considerations.	**Indicator:** # of gender considerations and actions that are included in the differential business models. **Target:** 100% of differential business models contain clearly defined gender considerations.	Year 1-5	Budgeted in technical activities and staff time.

Output 2.1.3: Projects implemented to demonstrate sustainable energy intervention model in public spaces in Barranquilla, Cali, and Pasto and 11 additional cities in Colombia	Impact measurement tools incorporate disaggregated data and gender indicators. These indicators may cover aspects related to equitable access to resources and benefits of pilot projects, participation of men and women, women's empowerment, reduction of gender gaps, and gender equity.	**Indicator:** # of measurement tools incorporate disaggregated data and gender indicators **Target:** 100% of the measurement instruments incorporate disaggregated data and gender indicators.	Year 2-5	Budgeted in technical activities and staff time in the design and implementation of the project?s M&E system.
Output 3.1.1: Project M&E plan implemented and PIRs developed and completed.	The Mid-term and final evaluation of the Project makes visible the approach to gender issues throughout the project cycle, compliance with indicators established in this Plan, and achievements concerning gender issues. Include specific recommendations and lessons learned to improve the gender approach in future projects of this type and limitations identified concerning the effective incorporation of the approach.	**Indicator:** # Evaluations, reports, and project reports incorporate the gender approach to make visible the approach to gender issues throughout the project cycle. **Target:** 100% of project evaluations, reports, and reports incorporate the gender approach to make visible the approach to gender issues throughout the project cycle.	Year 2-5	Budgeted in the project?s M&E allocation.

Output 3.1.2.: Annual Project Performance Meeting with stakeholders to track progress against the work plan and results framework for effective adaptive management.	The professional Safeguards expert ensures balanced gender representation in Annual Project Performance Meetings.	**Indicator:** % women participation in Annual Project Performance Meetings. Indicator: At least 50% women participation.	Year 1-5	Budgeted in the project?s M&E allocation.
Gender Mainstreaming in Project Management and Decision-Making				
Project Staff	Ensure equitable access	At least 50% of project staff shall be women	Gender-sensitive Staff selection criteria	$5,000 staff time
Project Steering Committee (PSC)	Ensure equal representation	50% women 50% men	Gender-sensitive Member Profiles for PSC	$5,000 staff time

[1] Bolet?n 12. Desigualdad de las mujeres en el mercado laboral de Cali (2021). Centro de Inteligencia Econ?mica y Competitividad CIEC
[2] Cifras denuncias delitos sexuales fiscal?a general ? Seccional Cali.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

Closing gender gaps in access to and control over natural resources;

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

Does the project?s results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

The joint efforts of the public and private sectors in the country have begun to pay off with an increase in the number of companies in the construction sector, which increasingly include sustainability as part of their business strategy.

For this reason, there will be the participation of the private sector represented by the Colombian Council of Sustainable Construction, the Colombian Chamber of Construction ? CAMACOL and the Consejo Colombiano de Eficiencia Energ?tica, which will be consulted and taken into account, as technical advisers, when developing the activities that will help improve the capacities of local institutions with technical, normative and methodological tools; that is, they will be consulted for: 1) the formulation / development of a national regulation on sustainable low-carbon buildings; 2) the formulation of decarbonization plans for buildings and public spaces; 3) the virtual platform for the evaluation of sustainable construction projects, works or activities, and 4) the design and implementation of practical guides on sustainable construction.

On the other hand, the pilots on net zero buildings and on energy efficiency in public spaces will be developed with the support of the private sector, as well as the design of projects on new buildings and public infrastructure; For this, the support of the Colombian Sustainable Construction Council will be very important since it has the experience of currently supporting the implementation of the Net Zero Buildings Program for All in Bogot? and Cali.

The private sector will also have a key participation in the proposed financial mechanisms to be developed by the project. Regarding the financial mechanism, the Ministry of the Environment, and the National Government, based on the work carried out with the formulation and implementation of the NAMAs for Development Oriented towards Transportation and Electric Mobility, have built a series of financing mechanisms that increase the capacity of the impact of NAMA financing resources on more projects. This project hopes to generate a financial mechanism that contributes to financing energy efficiency projects in buildings, considering previous experiences. The first option proposed to be applied in this project is the creation of a fund, which serves to make available i) credit lines with concessional conditions from FINDETER through financial entities supervised by the SFC; ii) partial credit guarantees directly or through the National Guarantee Fund; iii) direct subsidies to compensate for the use of new technologies. The second proposal is the creation of a resource multiplier, which, based on initial resources, finances new projects through credits, with one or more of the following alternatives: longer term, longer grace period, lower interest rate, rediscount compared to traditional FINDETER lines, and inverted curve in the interest rate, to motivate the intermediary to place medium-term credit, among others.

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Table 12. Identified Risks and Mitigation Measures

Risk	Risk Level	Likeliness of Risk	Proposed mitigation measures

Impacts of the COVID-19 Pandemic	High	Likely	A key risk of COVID-19 is prolonged social distancing measures and recurring national quarantine measures in project countries. To guarantee the continuation of the project despite prolonged social distancing requirements, project meetings and the engagement processes could transition on-line or a combination of in-person and virtual participants to minimize contagion risks. Remote technological infrastructure would be used to facilitate this type of engagement including easily accessible videoconferencing services. For those who cannot participate remotely, in-person meetings could be held with a reduced number of participants and holding social distancing and hygiene best. The development of the crisis will be closely monitored, and creative responses will be explored and implemented along the way focused on advancing project outcomes through alternative forms of engagement, and flexibility in case meetings and field visits must be rescheduled. Similarly, innovative ways of ensuring co-financing funds can be effectively deployed under a COVID-19 risk scenario may also have to be explored. The project will exercise extreme caution in ensuring that its activities do not increase the risk of transmission and spread. COVID-19 may affect the physical availability of technical expertise to provide in-situ support due to travel restrictions and limitations on physical gatherings imposed by the authorities. As suggested above, virtual means of delivery will be used in such cases and required adjustments to the timeline to accommodate the effects of the pandemic will be given due consideration during the project?s annual planning processes. The project provides an opportunity for green recovery and building back better through the development of sustainable construction in three cities of Colombia, with business models that are climate-smart and take into consideration lessons learned in COVID 19 response strategies developed by the government and globally, thus contributing to levels of preparedness, reduction of risks, and increased resilience for future pandemics if they should arise and to the effects of climate change. A COVID 19 Prevention and Risk Mitigation Plan has been prepared for the project consistent with the GEF?s and the Government of Colombia?s latest requirement in this regard; it is presented in Annex O.
Political corruption, scandals, turnover delay or disrupt project implementation.	Med	Moderately Unlikely	Account for corruption within institutional arrangements and controls.

Climate change risks to the 3 cities and the construction sector.	Med	Likely	The proposed project will help mitigate climate risks by making sure that the revised planning and regulatory framework for the construction sector includes provisions for climate change adaptation, consistent with the individual Climate Change Strategies of each city. The Climate Risk Assessment Form for the project is presented in Annex N of the CEO Endorsement Request.
Change of city administrations and the national government.	Med	Likely	The mitigation measure will be supported by the natural continuation of the BiodiverCiudades program in the work plans of the cities, coupled with an assertive information and engagement campaign by the project to bring new administrations up to date on project progress and the role of the city administrations in its implementation.
Change in land use in cities	Med	Moderately Unlikely	Public and housing spaces are defined in the Territorial Regulation instrument of each city and can only be changed through a process that includes public administrations with the approval of the municipal legislative bodies.
Gender mainstreaming by the project may be undermined without a series of activities aimed at understanding women?s challenges, and if the project does not take advantage of their capabilities and leadership roles within the family unit and the local community.	Low	Unlikely	The project will have to be genuinely gender mainstreamed, from the initial design phase, through the implementation, and impact evaluation. Particular attention must be paid to addressing all possible information gaps that may place women in an unfavourable position. The project will develop a Gender Mainstreaming Plan, inclusive of a Gender Action Plan, to ensure that the project is truly gender-sensitive and minimize any potential gender risks.
Disposal of used solar panels	Low	Unlikely	Consistent with Decree 4741 of 2005, the project will ensure that used solar panels are legally disposed of as per the law. This compliance by the project is not optional and is a legal requirement.

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

Institutional Arrangements

The project will be implemented by CAF and the IDB as GEF implementing agencies and by CCCS will be the Project Executing Agency**.** CAF and the IDB will lend technical expertise and guidance to the project in annual planning of activities to deliver project outputs and outcomes and will identify opportunities for coordination and avoidance of duplication with CAF and IDB?s investments in the country. Additionally, these agencies will ensure proper quality control and compliance required by project management and

fiduciary responsibilities. Table 13 below illustrates the distribution of GEF Implementing Agency responsibilities at the output level.

Table 13. Implementing Agency Responsibility at Output Level

Project Output	GEF Implementing Agency Responsibility
Output 1.1.1: National standard developed and adopted for energy efficiency in buildings and public spaces. Output 1.1.2: Monitoring, reporting, and verification mechanism to guarantee the implementation of the norms, standards and protocols for energy efficient buildings and public spaces.	IDB
Output 1.1.3: Plans for energy efficient buildings and public space in Barranquilla, Cali, and Pasto formulated and under implementation.	IDB
Output 1.1.4: Capacity Building Program inclusive of technical assistance and training for the implementation of energy efficient buildings, public space and green infrastructure developed and implemented.	IDB
Output 1.1.5: Virtual platform for the evaluation of projects, works or activities of energy efficient buildings in public space designed and implemented.	IDB
Output 1.1.6: Financing strategy for energy efficiency projects with both public resources and financial mechanisms through a triple alliance between the National Government, the construction sector, and the financial sector.	IDB CAF
(TA) Output 2.1.1: Design of (9) projects (in phase I Profile or in phase II Pre-feasibility), on new energy efficient buildings and renovations in public spaces in Barranquilla, Cali, and Pasto.	CAF
(INV) Output 2.1.2: Projects implemented to demonstrate sustainable energy intervention model in public spaces in Barranquilla, Cali, and Pasto and in 11 additional cities in Colombia.	CAF IDB
(INV) Output 2.1.3: Three (3) co-financed pilot projects to demonstrate energy efficient buildings in Barranquilla, Cali, and Pasto.	CAF IDB
Output 3.1.1: Project M&E plan implemented and PIRs developed and completed.	CAF IDB

Output 3.1.2.: Annual Project Performance Meeting with stakeholders to track progress against work plan and results framework for effective adaptive management.	CAF IDB
Output 3.2.1: Cross-sectoral communication strategy and knowledge products developed (web page, podcasts, social media, webinar, information-sharing events, workshops).	IDB CAF
Output 3.2.2: Exchange visits to promote upscaling of project results and lessons learned across other cities of Colombia, and internationally where feasible.	CAF

The CCCS is a Non-Profit Entity (ESAL) that was established in accordance with Colombian laws on February 8, 2008, through a private document of the Assembly of Partners, registered in the Chamber of Commerce of Bogot? on February 21, 2008, under No.00131683 of Book I, subject to surveillance by the Mayor's Office of Bogot?. The CCCS is the leading organization that brings together the entire construction value chain in Colombia to lead the transformation of the new and existing built environment towards sustainability, supported by a network of leading members and a highly specialized team. The CCCS leads high-level strategic alliances and facilitates synergy between the actors in the chain to generate opportunities for sustainable construction. With these allies, projects and initiatives have been developed that bring together other industry actors, consolidated national and regional discussion tables and workshops, and spaces for training, conversation, and dissemination of information.

Regarding the development of high-impact projects around sustainable construction, the CCCS has significant experience from different roles as local implementers, as partners, as contractors, and as allies. Some of these projects are the Net Zero Carbon Building Accelerator (AENCC), Zero Carbon Ready Buildings in Colombia, Building Efficiency Accelerator (BEA), among others. The CCCS has a work team of 23 people that make up the Executive Directorate, the technical area, the administrative and financial area, the Business Development area, and the Marketing and Communications area, it also has external collaborators who are an important support in meeting objectives.

The CCCS in 2022 is known for having excellent resource management and has good equity and asset profitability indexes. In 2023, the CCCS shows positive indicators for the entity. For the correct development of the project, the CCCS will adhere to and accepts the policies for the acquisition of goods and services, and for the selection and hiring of consultants, as established by the implementing agencies. The CCCS as the Project Executing Agency of the project is aware that there may be social and environmental risks associated with the development process of this project, for this reason it will adheres to the policies on environmental and social safeguards of the GEF, CAF and IDB that are available for the GEF 7 Project: " Energy efficiency for the transition to carbon neutral cities in Colombia", including the Gender Action Plan, Indigenous Peoples Plan, Stakeholder Engagement Plan, and Grievance Redress Mechanism.

Other key elements of the project?s institutional arrangements are outlined below:

A **Project Steering Committee (PSC)** will be established by CCCS, who will perform tasks of Secretariat for the PSC. The PSC will comprise of representatives of the Ministry of the Environment and Sustainable, the Ministry of Housing and Territory, UPME, Municipalities of Barranquilla, Cali and Pasto, CAF, and IDB. The PSC is responsible for ensuring that the project meets goals announced in the Project Results Framework by helping to balance conflicting priorities and resources. Conclusions and recommendations produced by the PSC will be used by CCCS to modify implementation strategies, annual work plans and resources allocation budget and, when necessary, to adjust the project?s Result Framework in consultation with CAF, IDB, and MinAmbiente. This committee will meet every six months, either physically or virtually. The CAF Task Manager will have a key role in signing off on the **Project Executing Unit (PEU)** to be installed by CCCS and the selection of the National Project Coordinator and as further outlined below.

The Project Executing Unit to be installed by CCCS will oversee day-to-day project execution. The PEU will be based in the City of Bogota, Colombia, and is responsible for technical delivery, fiduciary oversight and reporting, including financial management, procurement according to the project?s operational manual and procurement plan, and monitoring and evaluation (M&E) according to the Project Results Framework. The PEU will hire a **National Project Coordinator** who will be physically based in the City of Bogota. Representatives of MinAmbiente, CAF, IDB, and CCCS will take part in the recruitment process of the PEU staff and will decide about the most suitable candidate for each position according to CCCS and CAF?s recruitment procedures. The Project Coordinator will report to CCCS.

The staff complement of the PEU shall consist of the National Project Coordinator, an **Energy Efficiency & Climate Change Specialist**, **a Public Spaces Expert, Safeguards & Gender Specialist** (on a part-time basis), a **Financial & Procurement Specialist, and Municipal Technical Liaison** in each of the three municipalities. Technical inputs that are beyond the capacity of PEU staff will be outsourced on an as needed basis through specialised technical consultancies. Terms of Reference for the PSC and staff of the PEU are presented in Annex N.

A **Technical Advisory Committee (TAC)** will be appointed by the PSC to provide technical supervision, guidance, and support during project implementation. The TAC is also responsible for reviewing and providing recommendations on the project's methodological processes and technical quality to the Project Executing Unit for their consideration. The specific functions and responsibilities of the Technical Advisory Committee are as follows:

- ? If requested, review and make recommendations to the PEU and PSC on technical matters related to the Annual Workplans, Procurement Plan, Annual Reports and Project Progress Reports

? When requested by the PEU, review and make recommendations to improve the Terms of Reference for hiring consultants for highly technical matters, ensuring that this review does not constitute an undue delay in the project's procurement processes.

? Participate in key meetings, workshops, consultations, trainings, and other related activities as needed.

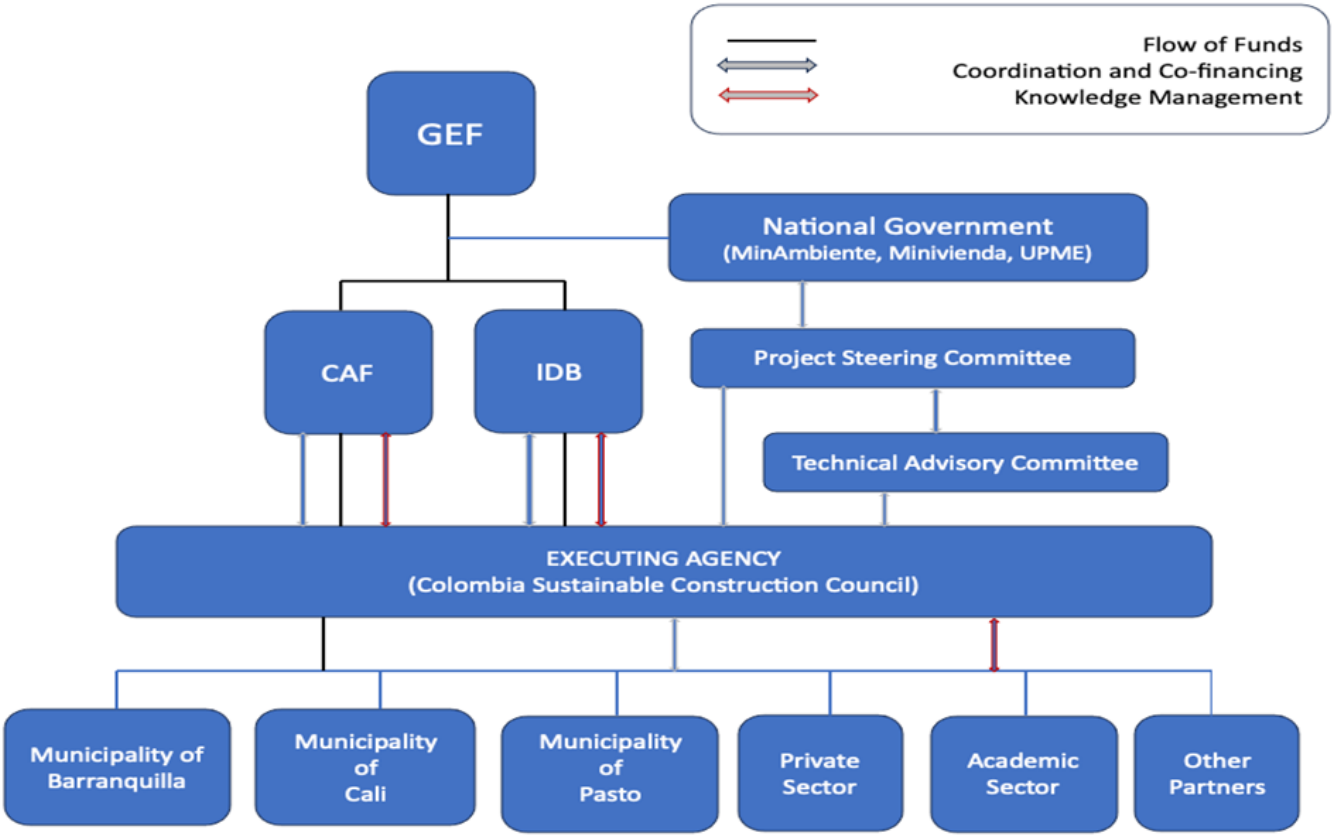
? Provide the project with access to information, data, and technical advice from specialized areas of competence of the Members.

? At the request of the PSC, provide resolution to problems of a technical nature that can be brought to the attention of the project by those interested in the project's intervention area.

The membership of the TAC will include the Ministry of Environment and Sustainable Development (Vice-Ministry ? Policy and Environmental Regulation - PNA, Technical Directorates, an Office for International Affairs), Ministry of Housing and Territory (Urban and Territorial Directorate, Sub-Directorate for Urban Development Policy, and Territory), DNP, UPME (Sub-Directorate for Demand) CCCS, City Committee of Baranquilla, Cali, and Pasto, Regional and Local Environmental Authorities, Chamber of Commerce, Trade Unions, Civil Society, academia, CAF, and IDB.

Lead Project Implementing Agency ? Consistent with the description above, the Development Bank of Latin America (CAF) is the Lead GEF?s Implementing Agency for this project. A CAF Task Manager will be assigned direct oversight for the project who shall coordinate closely with the IDB on project implementation matters. CAF is tasked with the overall responsibility of ensuring that GEF policies and criteria are adhered to and that the project meets its objectives and delivers on expected outcomes. Other specific Implementing Agency responsibilities include ensuring compliance with GEF policies and standards for results-based M&E, fiduciary oversight, safeguards compliance, project budget approvals, technical guidance and oversight of project outputs, approval of Project Implementation Reviews (PIRs), participation in the project?s superior governance structure, conducting the project's mid-term review, and preparation of the project?s Terminal Evaluation. As described above, the Project Steering Committee (of which the CAF Task Manager is a member), CCCS, and MinAmbiente will also have direct oversight roles, as part of the internal oversight mechanism of the project.

Figure 3. Project Institutional Arrangements



Coordination with GEF Projects

The project will seek coordination and lessons learned with the following GEF-financed projects:

GEF 5 - Implementing the Socio-Ecosystem Connectivity Approach to Conserve and Sustainable Use Biodiversity in the Caribbean Region of Colombia (GEF ID:5288). The objective of this project was to reduce the degradation and fragmentation of strategic ecosystems in the Colombian Caribbean region by implementing a strategy of socio-ecosystem connectivity that includes inter-institutional articulation, territorial planning, social participation with an intercultural vision, effective management of existing protected areas, creation of new protected areas and promotion of sustainable production models. Execution ended in 2021, one of its main products is the Caribbean Connectivity Strategy, important for the case of Monter?a and Barranquilla.

GEF 6 - Public Lighting Energy Efficiency Program: Public lighting replacement of low-efficiency VSAP bulbs with high-efficiency LEDs in Colombia (GEF ID:9354). Substitution of public lighting from low-efficiency VSAP bulbs with high-efficiency LEDs in Colombia. The proposed project aims to support the design of a 4-axis strategy to reduce technical barriers and information gaps, as well as real or perceived risks that have impeded the success of energy efficiency public lighting projects.

GEF 7 Paramos for life (GEF ID:10361), the objective of which is to conserve p?ramo ecosystems by promoting sustainable systems for the conservation of biodiversity, ecosystems, agrobiodiversity services and the adequate management of socio-environmental conflicts in paramo complexes in accordance with the Law of P?ramos approved in 2018. In formulation and relevant to the case of Pasto.

GEF 7 Conservation and Sustainable Use of the Ci?naga Grande de Santa Marta (GEF ID:10567), will focus on the implementation of the Action Plan for the Comprehensive Recovery of the Ci?naga Grande de Santa Marta that seeks to contribute to the recovery process of the environmental goods and services of the Ci?naga recovering mangrove ecosystems and fisheries with a participatory approach and strengthening environmental governance. The foregoing in compliance with the recommendations of the Ramsar assessment mission. In formulation and relevant to the case of Barranquilla.

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

7. Consistency with National Priorities. Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:
- National Action Plan for Adaptation (NAPA) under LDCF/UNFCCC
- National Action Program (NAP) under UNCCD
- ASGM NAP (Artisanal and Small-scale Gold Mining) under Mercury
- Minamata Initial Assessment (MIA) under Minamata Convention
- National Biodiversity Strategies and Action Plan (NBSAP) under UNCBD
- National Communications (NC) under UNFCCC
- Technology Needs Assessment (TNA) under UNFCCC
- National Capacity Self-Assessment (NCSA) under UNCBD, UNFCCC, UNCCD
- National Implementation Plan (NIP) under POPs
- Poverty Reduction Strategy Paper (PRSP)
- National Portfolio Formulation Exercise (NPFE) under GEFSEC
- Biennial Update Report (BUR) under UNFCCC
- Others

NDC - Nationally Determined Contributions
The Colombian Government established the goal of reducing the country's greenhouse gas emissions of 51% by the year 2030; commitment that is framed in the process of updating the Determined Contribution at the National Level of Colombia, known as NDC, which becomes the country's roadmap to establish ambitious actions to face the effects of climate change in the face of next 10 years. The NDC incorporates three components: i) Greenhouse Gas (GHG) mitigation, ii) adaptation to climate change, and iii) means of implementation as an instrumental component of policies and actions for low-carbon, adapted and climate-resilient development.

To meet the GHG mitigation goal, a portfolio of measures has been identified consisting of a list of 32 national measures (led by ministerial portfolios), 89 sub-national measures (led by territorial entities), 24 measures led by companies and 3 specific measures to reduce black carbon, for a total of 148 measures. Within the portfolio of sectoral GHG mitigation measures are, among others, Measure 7 of Sustainable Construction with a reduction potential of 93,800 tCO2eq.

Measure 7 NDC: Sustainable construction (Implementation of Resolution 549 of 2015). This measure is focused on defining guidelines for the design and construction of sustainable buildings, achieving reductions in energy consumption, which allows reducing GHGs linked to the development of housing and other buildings.

Consequently, this project is coherent and related to the NDC because it seeks to reduce the emissions generated in construction processes, as well as the reduction of energy consumption in buildings. This relationship is seen substantially in component 2 "Net zero carbon buildings and energy efficiency in public spaces", whose main result is the reduction of GHG emissions in the cities of Barranquilla, Cali, and Pasto, associated with construction and energy efficiency in buildings and public space.

E2050 - Colombia's Long-Term Climate Strategy to comply with the Paris Agreement (E2050)
Through the implementation of E2050, it is expected that Colombia will have net annual emissions of Greenhouse Gases (Carbon equivalents) equal to zero, based on profound changes in production and consumption patterns, as well as an increase in the Carbon absorptions, resulting in the country achieving carbon neutrality by 2050. To achieve this, certain long-term bets have been defined. One of these is bet 6 "Cities-regions with integral urban development for their environmental sustainability (...)", which contains transformation options such as 28 of "Highly efficient buildings adapted to climate change that in their life cycle and the interaction with the environment generates a net balance of carbon emissions equal to zero ".

This project seeks to contribute to this transformation option, which is why the recommendations given for the 2020-2030 period were included in the results, associated with: 1) the adjustment and updating of legal regulations to include guidelines for highly efficient buildings and adapted to climate change in their life cycle; 2) Development of reporting and verification mechanisms to guarantee the implementation of norms, standards and protocols for sustainable buildings and net zero buildings; 3) Usable construction and demolition waste (RCD), reincorporated in the life cycle of new buildings. The three recommendations are reflected in component 1 "Governance for sustainable construction" and component 2 "Net zero carbon buildings and energy efficiency in public spaces".

ENEC - National Circular Economy Strategy
Colombia intends to be a leader in Latin America in the implementation of the circular economy by 2030. This vision implies increasing efficiency in the use of materials, water, and energy, considering the resilience of ecosystems and the circular use of resources. material flows, maximizing their added value and their useful life. ENEC seeks to promote productive transformation to maximize the added value of industrial and agricultural systems and sustainable cities. Within this strategy, 6 material and resource flows have been prioritized, including demolition and construction material flows.

CONPES 3919 - National Sustainable Building Policy
This Policy seeks to promote the inclusion of sustainability criteria for all uses and within all stages of the life cycle of buildings through regulatory adjustments, the development of monitoring mechanisms and the

promotion of economic incentives, which contribute to mitigating the negative effects of building activity on the environment, improving living conditions and generating employment and innovation opportunities.

Through this project, both in Component 1 and Component 2, the implementation of this policy will be promoted when developing decarbonization plans, guidelines, and construction pilots. Likewise, it will strengthen this instrument thanks to the proposal made to improve national regulations and implement a reporting and verification mechanism to guarantee compliance with the existing norms, standards, and protocols in Colombia regarding sustainable and low-carbon buildings.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

During project implementation and before the end of each project year, knowledge produced by or available to the Project will be consolidated from project stakeholders and exchanged with other relevant projects, programs, initiatives, research institutions, academia, etc. by the Project Executing Unit (PEU). This collected knowledge will be analysed alongside project monitoring and evaluation data at the Annual Adaptive Management Meeting. It is at this meeting that the Theory of Change will be reviewed, and modifications to the annual work plan and budget will be drafted. Adjusting based on what works and what does not work should improve project results.

Lessons learned and best practices from the Project and other associated projects and initiatives will be captured from field staff, biannual Project Progress Reports, annual Project Implementation Reports (PIR), management project evaluations, and from stakeholders at the Annual Adaptive Management Meeting. External evaluations will also provide lessons and recommendations. These available lessons and best practices will then be documented in the semi-annual project progress reports (PPR) (with best practices annexed to the report). The project will also develop tools and methods for knowledge exchange, learning and collaboration.

The National Project Coordinator will ensure that relevant stakeholders, such as GEF Operational Focal Point, members of the Project Steering Committee (PSC) and Technical Advisory Committee (TAC), project partners, and other stakeholders are informed of and where applicable invited to the Adaptive Management Meeting, formal evaluations, and any documentation on lessons, best practices, and other knowledge outputs. These partners will receive all related documents, such as Project Progress Reports, Evaluation Reports, and all Knowledge Management materials produced by the to ensure the sharing of important knowledge products.

All knowledge and strategic communication products produced by the Project will be shared on a project-specific website to be updated frequently by the Ministry of Environment and Sustainable Development and the Colombian Council for Sustainable Construction. This will allow a wider audience to gain knowledge

from the Project. In addition, the Project Coordinator will share these documents with stakeholders more directly through mail, presentations at workshops, and meetings of the Steering Committee and the Technical Committee. The project?s overall Knowledge Management intervention strategy shall include, among others, the following:

a) Plans to learn from relevant projects, programs, initiatives & evaluations

b) Tools and methods for knowledge exchange, learning & collaboration

c) Proposed knowledge outputs to be produced and shared with stakeholders

d) Plans for strategic communications

The project will support the development and dissemination of a suite of tailored and gender-sensitive knowledge products. In this regard, the project?s anticipated knowledge production and communication requirements will be mapped, and stakeholders will be consulted on the identification of key target audiences, successful past and current communication initiatives and channels, messaging that meet the differentiated needs of women and men, experiences with best formats for information delivery to target audiences in the construction sector, and information on needs and priorities for transition towards sustainable construction. Targeted communication and knowledge management products (e.g., project newsletter, media releases, social media posts, written and audio-visual awareness products tailored to different audiences) will be produced and disseminated through-out the project cycle. Some other key knowledge delivery tools to be employed by the project will include sustainable construction exhibition, webpage, podcasts, social media, webinars, results-sharing events, and networking to promote a community of practice on sustainable construction, and web-based tools such as openly accessible knowledge base software.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

The project will follow CAF?s standard monitoring, reporting and evaluation processes and procedures. The project M&E plan is consistent with the GEF Monitoring and Evaluation policy. The Project Results Framework is presented in Annex A of this CEO Endorsement Request and includes SMART indicators for each expected outcome, means of verification, as well as mid-term and end-of-project targets.

The M&E plan will be reviewed and revised as necessary during the Project Inception Workshop to ensure project stakeholders understand their roles and responsibilities vis-?-vis project monitoring and evaluation. Indicators and their means of verification may also be fine-tuned at the Inception Workshop. Day-to-day project monitoring is the responsibility of the project execution team, but other project partners will also have responsibilities to collect specific information to track the indicators. It is the responsibility of the Project Coordinator and the Project Executing Agency to inform CAF of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely fashion.

The Project Steering Committee will receive periodic reports on progress and will make recommendations to CAF concerning the need to revise any aspects of the Results Framework or the M&E plan. Project oversight to ensure that the project meets CAF and GEF policies and procedures is the responsibility of the GEF Task Manager at CAF. The Task Manager will also review the quality of draft project outputs, provide feedback to the Project Steering Committee, and will ensure the Project Executing Unit ensures adequate quality of scientific and technical outputs and publications.

Project supervision will take an adaptive management approach. The Task Manager will develop a project supervision plan at the inception of the project which will be communicated to the project partners during the Inception Workshop. The emphasis of the Task Manager?s supervision will be on outcome monitoring but without neglecting project fiduciary management and implementation monitoring. Progress vis-?-vis delivering the agreed project global environmental benefits will be assessed with the Project Steering Committee at least twice per year. Project risks and assumptions will be regularly monitored both by project partners, CAF, and IDB as part of the Project Implementation Review (PIR), including review of the quality of project monitoring and evaluation. Key financial parameters will be monitored quarterly to ensure cost-effective use of financial resources and further confirmed via Annual Audit Reports. The elaboration of the PIR will require inputs by both CAF and IDB as GEF Implementing Agencies.

A Mid-Term Evaluation will take place on June 15, 2026, through the services of an independent external consultant. The review will include all parameters recommended by the GEF Evaluation Office for terminal evaluations and will verify information gathered through the project PIRs and quarterly progress reports, as relevant. The review will be carried out using a participatory approach whereby all project stakeholders will be consulted, consistent with project?s Stakeholder Engagement Plan. The Project Steering Committee will participate in the mid-term review and develop a management response to the evaluation recommendations along with an implementation plan. It is the responsibility of the CAF Task Manager to monitor whether the agreed recommendations are being implemented.

In-line with the GEF Evaluation requirements, the project will be subject to an independent Terminal Evaluation. CAF and IDB will be responsible for the Terminal Evaluation (TE) of project activities. The TE will provide an independent assessment (via the services of an independent external consultant) of project performance (in terms of relevance, effectiveness, and efficiency), and determine the likelihood of impact and sustainability. CAF and IDB will provide inputs for the definition of the Terms of Reference for the TE with the spirit of ensuring the TE consultant appropriately engages and addresses the requirements of both GEF Implementing Agencies and the evaluation report accurately reflects performance of project activities under each agency?s responsibilities. The project performance will be assessed against standard evaluation criteria using a six-point rating scheme. It will have two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned. The direct costs of the evaluation will be charged against the project evaluation budget. The TE will typically be initiated after the project?s operational completion. If a follow-on phase of the project is envisaged, the timing of the evaluation will be discussed with CAF to make administrative adjustments as necessary.

The draft TE report will be sent by CAF to project stakeholders for comment. Formal comments on the report will be shared by CAF in an open and transparent manner. The final determination of project ratings will be made by CAF when the report is finalised.

The evaluation report will be publicly disclosed and will be followed by a management response and compliance process. The evaluation recommendations will be entered into a Recommendations Implementation Plan template by CAF. Formal submission of the completed Recommendations Implementation Plan by the Project Coordinator is required within one month of its delivery to the project team. CAF will monitor compliance with this plan every six months for a total period of 12 months from the finalization of the Recommendations Implementation Plan. The Costed Monitoring & Evaluation Plan is presented in Table 13.

Table 14. Costed Monitoring & Evaluation Plan

Type of M&E activity	Responsible Parties	M&E Budget (GEF)	Co-finance	Time Frame
Inception Meeting	National Project Coordinator, Project Team, Steering Committee, CAF	15,000	90,000	Within 2 months of project start-up
Inception Report	National Project Coordinator	PMC Budget	PMC Co-financing	1 month after project inception meeting
Measurement of project indicators (outcome, progress, and performance indicators)	National Project Coordinator & Project Team; Consultants	30,000	180,000	Outcome indicators: start, annual, mid, and end of project.
Semi-annual Progress/ Operational Reports to CAF	National Project Coordinator	PMC Budget	PMC Co-financing	Within 1 month of the end of reporting period
Project Steering Committee and follow-ups	National Project Coordinator (Secretariat) Project Steering Committee CAF Task Manager	50,000	300,000	At least twice a year, and includes both in-person and electronic media per request and need
Reports of PSC meetings	National Project Coordinator	PMC Budget	PMC Co-financing	Within 1 month after PSC meeting
Project Implementation Reports (PIR)	National Project Coordinator; CAF, IDB		150,000	Annually, part of reporting on project M&E
Supervision Missions	National Project Coordinator and PSC Members	75,000	300,000	At least twice a year
Learning Mission / Site visits	National Project Coordinator and Project Staff	25,000	150,000	At least twice a year and as needed

Gender Action and ESS Monitoring	National Project Coordinator and Gender & ESS Expert	30,000	180,000	At least twice a year and as needed
Indigenous Peoples Framework Plan Implementation	National Project Coordinator and Gender & ESS Expert	25,000	150,000	Continuous
Mid Term Evaluation	? National Project Coordinator ? PEU ? External consultant(s) ? CAF	30,000	180,000	At mid-point of project implementation
Terminal Evaluation	CAF, IDB	45,000	270,000	Within 6 months of end of project implementation
Project Final Report	National Project Coordinator	PMC Budget	PMC Co-financing	Within 2 months of the project completion date
Co-financing report	National Project Coordinator and Finance Manager	PMC Budget	PMC Co-financing	Within 1 month of the PIR reporting period
Publication of Lessons Learnt and other project documents	National Project Coordinator Project Steering Committee	25,000	150,000	Annually, also part of Semi-annual reports & Project Final Report
Total M&E Plan Budget		**350,000**	2,100,000	

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

The primary benefit of the project will be a reduction of CO_2 emissions by increasing energy efficiency and water use in the construction sector in three cities of Colombia through interventions at the different stages of the life cycle of buildings and in public space, in addition to transport electrification. The capacity of local institutions will be strengthened with technical, normative, and methodological tools to implement strategies for the decarbonization and enhanced energy efficiency in buildings and public spaces, through the development and adoption of a national standard for energy efficient buildings, the institutionalization of monitoring, reporting, and verification mechanisms, the implementation of buildings and public space

decarbonization plans, and capacity building in energy efficient construction to the entire construction value chain in the country (manufacturers, suppliers, operators, builders, developers, designers and consultants). The overall governance framework for energy efficient buildings and public spaces will be revamped to create the enabling environment with guidelines that contain comprehensive sustainability parameters for the entire life cycle of buildings and public spaces that allow for meeting the challenges of efficiency and reducing impacts on the environment, by optimizing processes while promoting the carbon neutrality of the country. GHG emissions will be reduced, and energy efficiency will be improved associated with buildings and public spaces in the project intervention areas, through the design and implementation of pilot projects to demonstrate energy efficient buildings and sustainable energy intervention models in public spaces. Incentives will lead to construction of buildings and public space adopting energy efficiency criteria as part of overall sustainable construction, and knowledge, skills, and capacities for energy-efficient construction at the local level will be strengthened.

Project interventions will bring about energy savings, increased productivity, reduced material and energy losses, and reduced CO_2 emissions, estimated at 1,541,374 metric tons of CO2e. From the socio-economic perspective, this public project (public buildings and public spaces) will result in direct benefits to the general populace of the three targeted cities with a total of 1,820,620 men and 2,043,008 women.

Additionally, as the project considers different stages of building life cycle and public spaces, the sustainable criteria proposed for the interventions and policies enhances the ability of these urban environments to adapt to and withstand the challenges posed by climate change. It includes topics such as bioclimatic designs, passive construction techniques, and Naturae-Based Solutions. The project also includes the elaboration of Climate Micro-Zoning Studies, Climate-Responsive Construction Manuals and action plans that incorporate materials resilient to climate impacts and integrating designs that consider local climate challenges. Additionally, the project plays a crucial role in fostering community resilience by promoting awareness and education on climate-related risks. It encourages community involvement in the development of sustainable practices, empowering residents to actively contribute to climate resilience efforts.

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification *

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate	Medium/Moderate		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

Barranquilla is classified as a moderate risk level. While there may be potential impacts of climate change, they are expected to be limited, transitory, or manageable. Urban systems can manage volatility, crises, stressors, or changing climate trends. You are unlikely to experience poor financial performance or significant negative environmental or social impacts.

Cali is in a position of moderate risk in terms of climate change. Although there are impacts, they are expected to be controllable and temporary. Urban systems have the ability to cope with volatility, disruptive events, and stressors associated with climate variations. Serious financial, environmental or social problems are unlikely and the likelihood of poor performance or significant failure is low.

Pasto is classified as having a minimal risk level. Although there may be potential impacts of climate change, they are expected to be limited, transitory, or manageable. Urban systems can manage volatility, crises, stressors, or changing climate trends. You are unlikely to experience poor financial performance or significant negative environmental or social impacts.

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
Annex I-M-N	CEO Endorsement ESS	
Annex D&E	Project PIF ESS	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Outcome Level Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks
Project Objective: Contribute to a reduction of CO_2 emissions by increasing energy efficiency in the construction sector in Barranquilla, Cali, and Pasto through the development of actions that involve the different stages of the life cycle of buildings and interventions in public space.				
Objective Level Indicators				
Objective Indicator 1: Green House Gas Emissions Mitigated (GEF Core Indicator 6) **Unit:** CO2e **Cumulative** Definition: This indicator measures CO2 emissions based on the following mitigation actions: energy efficiency and water use according to Resolution 0549/2015 and renewable energy, energy efficiency, and transport electrification.	**Baseline:** 0 CO2e	**Mid-Term:** 462,413 (CO2 mitigation linked to # of households estimated to adopt efficient systems for energy and water at the project mid-term; 30%) **Project End:** 1,541,374	MRV data Datasheets with calculation of CO2 emissions. Project Progress Reports PIRs	Technical skills to conduct CO2 calculations is secured for updating calculations at mid-term and project end, and at other points during project implementation.

Objective indicator 2: Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment. (GEF Core Indicator 11) **Unit: # Of persons** **Non-cumulative** Definition: The GEF defines this indicator as the total number of direct beneficiaries including the proportion of women beneficiaries, i.e., those who receive targeted support from a given GEF project/activity and/or who use the specific resources that the project maintains or enhances.	**Baseline:** Females: 0 Males: 0	**Mid-Term:** Females: 612,902 Males: 546,186 **Project End:** Females: 2,043,008 Males: 1,820,620	Project M&E Reports Gender Action Plan Reports Training Reports PIRs	The project can effectively monitor and record direct beneficiaries disaggregated by sex associated to public and private buildings and public spaces.
Outcome Level Indicators:				
Component 1. Governance for Energy Efficiency in Buildings and Public Spaces				
Outcome 1.1. Capacity of national and local institutions strengthened with technical, normative, and methodological tools to implement strategies for enhanced energy efficiency in buildings and public spaces.				

<u>Outcome 1.1 indicators:</u> *# And frequency of verification reports on implementation of standards and protocols for energy efficient buildings and public spaces* # of *national standards for energy efficiency revised and/or strengthened because of project interventions* *# Of public and private institutions that have institutionalized the national standard for energy efficiency* *# Of financing mechanisms for the replication of project results*	Baseline: 0 Baseline: 0 Baseline: 0 Baseline: 0	**Mid-Term:** At least 2 by government At least 2 by private sector **Project End:** 3 annually by government 3 annually by private sector **Mid-Term:** At least one standard. **Project End:** At least one standard. **Mid-Term:** At least 1 public At least 1 private **Project End:** At least 3 public At least 3 private Mid-Term: At least 1 Financing Mechanism Project End: At least 2 Financing Mechanisms	Government institutional reports Construction Sector Organizational Reports Project Progress Reports Published version of revised standard Public access to verification reports Public/online access to details of financial mechanisms	Government carries through on adoption of standards and protocols for energy efficient buildings. Private sectors embrace benefits of standards and protocols and pursue internal adoption and implementation. Financial mechanisms designed and made operational through triple alliance: government, construction sector, and financial sector

Outputs:

Output 1.1.1. National standard developed and adopted for energy efficiency in buildings and public spaces.

Output 1.1.2. Monitoring, reporting, and verification mechanism to guarantee the implementation of the norms, standards and protocols for energy efficient buildings and public spaces.

Output 1.1.3. Plans for energy-efficient buildings and public space in Barranquilla, Cali, and Pasto formulated and under implementation.

Output 1.1.4. Capacity Building Program inclusive of technical assistance and training for the implementation of energy efficient buildings, public space and green infrastructure developed and implemented.

Output 1.1.5. Virtual platform for the evaluation of projects, works or activities of energy efficient buildings in public space designed and implemented.

Output 1.1.6. Financing strategy for energy efficiency projects with both public resources and financial mechanisms through a triple alliance between the National Government, the construction sector, and the financial sector.

Component 2. Pilots of Energy Efficient Buildings and Public Spaces

<u>Outcome 2.1.</u> GHG emissions reduced, and improved energy efficiency associated with buildings and public spaces in the project intervention areas.

<u>Outcome 2.1 indicators:</u> *tCO2-e reduced or avoided in energy efficient buildings and public spaces by 2030.* *% Reduction in GHG emissions by energy efficient buildings because of project interventions*	Baseline: 0 Baseline: 0	**Mid-Term:** 461,623 **Project End:** 1,541,374 **Mid-Term:** 12% **Project End:** 40%	MRV data Datasheets with calculation of CO2 emissions. Project Progress Reports PIRs Government institutional reports Construction Sector Organizational Reports	Technical skills to conduct CO2 calculations is secured for updating calculations at mid-term and project end, and at other points during project implementation.

Outputs:

Output 2.1.1. Design of (6) projects (in phase I Profile or in phase II Pre-feasibility), on new energy efficient buildings and renovations in public spaces in Barranquilla, Cali, and Pasto.

Output 2.1.2. Three (3) co-financed pilot projects to demonstrate energy efficient buildings in Barranquilla, Cali, and Pasto.

Output 2.1.3. Projects implemented to demonstrate sustainable energy intervention model in public spaces in Barranquilla, Cali, and Pasto and in 11 additional cities in Colombia.

Component 3. Project Management, Dissemination, and Knowledge Management

<u>Outcome 3.1</u>. Informed and adaptive project management

Outcome 3.1 indicators: *# Of PIRs that reflect project performance and lessons learned* *# Of annual reflection meetings to track progress against work plan and results framework*	Baseline: 0 Baseline: 0	**Mid-Term:** 2 PIRs **Project End:** 5 PIRs **Mid-Term:** 2 Annual Reflection Meetings **Project End:** 5 Annual Reflection Meetings	Project Implementation Reports Minutes of Annual Reflection Meetings inclusive of participants? registration sheet, signature, and event photographs Project Progress Reports	Project staff is diligent in implementing the project?s M&S system and generating the associated reports on time and of the required quality. Project staff embrace usefulness of Annual Reflection Meeting and incorporate results in process for Annual Work Plans.
Outputs: Output 3.1.1. Project M&E plan implemented, and Project Progress Reports developed and completed. Output 3.1.2. Annual reflection meeting to track progress against work plan and results framework indicator targets for effective adaptive management				
Outcome 3.2. Knowledge Management, communication, and dissemination				
Outcome 3.2 indicators: *Number of Knowledge Management (KM) strategies developed and implemented.* *# Of exchange programs*	Baseline: 0 KM strategies Baseline: 0 Exchange Programs	**Mid-Term:** *I KM Strategy* **Project End:** *I KM Strategy* **Mid-Term:** 2 exchange programs **Project End:** 4 exchange programs	Knowledge Management Plan containing implementation strategies Audience-specific messaging Minutes of Multi-Stakeholder Dialogue Platform sessions Review of knowledge products of the project to confirm gender sensitive approach.	The project prioritizes the systematization of lessons learned at the project?s onset, with consistent and evolving use of the knowledge acquired to achieve the transformative vision of the project. The project?s Knowledge Management approach truly embraces gender mainstreaming in all its facets
Outputs: Output 3.2.1. Cross-sectoral communication strategy and knowledge products developed. Output 3.2.2. Exchange visits to promote upscaling of project results and lessons learned across other cities of Colombia, and internationally where feasible.				

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

GEF Comments & Observations	Agency Response at CEO Endorsement
GEF Council Comments	
Canada This is the only possible project that may have mercury impacts. It is unclear if the project is only targeted at new building construction or if renovations will also be included. If the project extends to do renovations, proper disposal of any mercury-containing lamps should be discussed in the guide to be developed, as part of good environmental stewardship.	Manuals and guides to be developed will address disposal of mercury-containing lamps according to law and international best practice.

Germany Building materials play a major role in the energy and CO2 balance during the life cycle of a building. Although the importance of buildings materials is mentioned in the in the proposal, it is not entirely clear what specific measures the project intends to undertake for this matter. Germany requests that the use of sustainable and local building materials is more comprehensively integrated into project implementation and addressed in the proposal.	The Cali Sustainable Construction Manual, which clearly addresses sustainable construction materials and sustainable construction practices, will be applied in all three cities in pilot projects.
A better understanding of how the aspects of climate adaptation and resilience can be addressed in the project would also be appreciated.	The concept of carbon footprint and life cycle of projects is considered from the design methodology in the implementation of the criteria "Ecology and Health" which addresses criteria such as embodied energy or energy embedded in materials, reduction of toxic materials, reduction of fossil fuels and conscious water management.
Furthermore, in the sense of an integrated approach, the aspect of citizen participation / civil society involvement, including in the design of residential buildings and public places should be considered in the implementation of the project. This could be accompanied by awareness-raising and educational campaigns to reduce private energy consumption.	Pilot Projects will be accompanied by awareness-raising and educational campaigns to reduce private energy consumption, as part of the projects Knowledge Management Strategy.
Based on the proposal it is not clear why the cities of Barranquilla, Monter?a and Pasto were selected for the implementation of pilot projects. Germany would therefore appreciate a clearer description of the selection process.	A new indicator has been added to the project results framework as follows:
With regards to Output 1.1.1: From the objective of the proposal and the performance indicators, it reads as if a new regulation or standard is to be developed. The proposal further develops the previous context of what has been developed in Colombia in terms of energy efficiency and sustainable construction in buildings, so the indicators should refer more to the improvement, revision, strengthening of current standards without ignoring from the outset that there is a road already covered.	# of *national standards for energy efficiency revised and/or strengthened because of project interventions* Cities were selected first and foremost, if they were para of the government?s Biodiverciudades Initiative, and secondly, progress at the municipal level in energy efficiency projects, as a preferable
In the part on co-financing, although the counterparts of the cities are referred to as mobilized investments, it is not clear from the text of the proposal how the cities count or mobilize such financing for the investment of	baseline upon which GEF investment may held to achieve incremental value.

the projects. Further elaboration on this issue would be appreciated. In most of the proposals, the counterparts of the cities fall due to lack of financial support.	Co-financing from municipal authorities have been classified as public investments by Municipal Governments.
Additionally, the proposal defines the municipal councils as co-financiers. This requires clarification, since usually city councils as entities do not directly receive or co-finance investments or projects. Alternatively, it is suggested to change it to the municipal government entities in charge of the implementation of the projects, for example, environmental or planning secretariats.	Co-financing from municipal authorities have been reclassified as ?Municipal Government.?
The project proposal identifies the Colombian Council of Sustainable Construction, the Colombian Chamber of Construction ? _CAMACOL as a private sector representative and key actor in the implementation of component 1. It would be appreciated if within the identified barriers and risks, the role of CAMACOL could be mapped out and how possible risks and barriers of involving such a strong market player can be mitigated and overcome.	CAMACOL is recognized as crucial to the success of Component 1 from the perspective of its capacity to provide valuable technical advice and sharing of lessons learned from sustainable construction projects, from the perspective of the private sector.

Switzerland How does the project ensure complementarity to and synergies with other EE projects and initiatives on the same subject? The success of the project will to a large extent depend on an active, knowledgeable, and flexible project PEU, which can effectively interact with the various stakeholders including the different Government agencies and entities. How will the PEU be set up and equipped to fulfil this role? The PIF does not focus on thermally comfortable buildings, but rather on energy efficiency and decarbonization. The buildings? owners and tenants might not be aware of the environmental aspects, but have a good understanding of thermal comfort (How does the project plan on addressing this issue, if at all)? The PIF mentions the importance of ?life cycle? approaches which also integrates grey emissions from construction processes and building materials. In future this will be a major challenge for a zero-emission building sector. How does the project plan on addressing this challenge?	The thermal comfort conditions of the buildings are addressed in the integrated design proposal, through the criteria of "Passive Measures", which considers criteria such as control of direct solar radiation, air movement, natural ventilation, passive cooling, thermal insulation of the envelope, which are solved through bioclimatic design methodologies and energy simulation of the projects. The concept of carbon footprint and life cycle of projects is considered from the design methodology in the implementation of the criteria "Ecology and Health" which addresses criteria such as embodied energy or energy embedded in materials, reduction of toxic materials, reduction of fossil fuels and conscious water management.
United States We recommend coordinating with the Ministry of Mines and Energy and Financiera de Desarrollo National (FDN) development bank for Output 1.1.6	Both entities have been identified as key actors in the project implementation.
STAP Comments	

STAP notes and welcomes the inclusion of a theory of change in the proposal. We encourage the proponent to improve it in the following ways: ? Correctly identify the drivers of change leading to the problem that the project seeks to solve. Drivers of change are factors such as population, market demand, urbanization, globalization, climate and other global environmental changes, disruptive technologies, and policy changes that facilitate or reverse the problems being addressed by the project. ? Clearly show the causal pathways and the underlying assumptions upon which they depend, including providing evidence that the assumptions will hold and what will be done to ensure they hold.	The Theory of Change has been revised to better define key drivers; assumptions have been revised to better reflect the intervention logic behind proposed causal pathways.

One key revision that would strengthen the project is incorporating a more innovative technological interface rather than just noting the simple solutions such as LED lighting and other retrofitting efficiency and conservation measures and paths or non-motorized connectivity in public parks. There is a range of other innovative strategies for energy efficiency which need to be considered and benchmarked.	Technological innovation strategies are formulated for the management of buildings and public spaces, based on the energy and bioclimatic simulation processes suggested in the design criteria for the project planning phase, as well as the implementation of management and performance monitoring technologies for buildings and public spaces in the operation phase. For this purpose, 2 fundamental objectives are proposed: - Regarding Monitoring: optimize energy efficiency and thermal, acoustic, and lighting comfort in addition to water consumption in buildings, through the permanent measurement of comfort parameters that allow solving problems in the best way and in less time and cost. To make this objective operational, activity 2.1.2.2 proposes the development of a monitoring platform for environmental and energy indicators of pilot buildings and public spaces. - Regarding Automated Control, the project proposes to implement intelligent controls for energy and water management in the operation of building systems, to reduce demand and consumption of services due to bad habits of use by occupants or inefficient service management systems. This measure points to the possibility of implementing intelligent systems for the management of the building's constituent systems and even the prepaid purchase of energy and water in large cities.

We suggest that the proponent systematically analyse the types of buildings being considered and show how the project will address emissions reduction across each aspect of their life cycle. A systems dynamic approach has been used in this regard already in Colombia ? including in Barranquilla, as noted in the following recent study.	Emission mitigation will be achieved from the planning phase, through the implementation of Integrated Design strategies, from the early stages of the project in which characterization studies of the environmental conditions of the surroundings are requested and subsequently through Collaborative Design activities incorporating integral sustainability standards and simulation of the processes through digital tools for energy and bioclimatic simulation and simulation of future construction processes without losses through the implementation of BIM (Building Information Modelling) technologies. In the Execution or the implementation phase, construction, manufacturing, and assembly processes are developed with BIM and LEAN (Lightweight / Lossless Construction) methodologies, for construction management that seek, through efficient processes, the reduction of carbon footprint and energy efficiency by saving time, resources, and costs of construction processes. In the Operation or Functioning phase, CO2 mitigation is sought through the implementation of sustainable and energy efficient Operation and Maintenance Plans, which can be ensured through the management of environmental and energy monitoring systems in the buildings and automated control technologies for the operation of the building systems.

The proposal could be improved by adding greater specificity on innovations that would be employed in the actual infrastructure delivery of the pilot projects.	Component 2 incorporates sustainability and energy efficiency processes that will result in the reduction of emissions in the Building and Public Space pilots, through the 3 phases of the construction process: Planning, Execution or Implementation and Operation or Functioning. For the pilots 4 types of interventions were identified as follows: - New sustainable social housing pilots. - Improvement of existing social housing - Intervention in public space projects - Energy and/or environmental rehabilitation of existing buildings
There is also opportunity to consider Nature-Based Solutions approach in the urban park redesign for decarbonization through corridor development	The design criteria proposed for both the development of the buildings and the public space incorporate solutions based on nature, which are called ""Passive Measures" where criteria such as bioclimatic design of exterior spaces are considered. These measures will be prioritized from the design process because they do not consume energy and efficiently resolve the relationship of the project with the conditions of the natural environment, for thermal, lighting, and acoustic comfort solutions in addition to the resulting energy efficiency.
The project could incorporate smart building energy management systems which use digital technologies to monitor, control, and manage energy use in buildings.	For the efficient, safe and sustainable operation of buildings, automated control technologies are implemented for active systems, generating the possibility of remote and programmed control of building functions such as; accessibility, thermal, acoustic and lighting comfort indicators, environmental health conditions such as air quality, communications inside the building and between the building and the exterior, control of energy, water and communications consumption and demand, allowing the automation of functional operations and, for example, the prepaid acquisition of services such as energy and water. For this purpose, pilot projects consider "Operational strategies", inclusive of user behaviour, monitoring, and automated control of operations.

The proposed financial mechanism is pertinent to the durability of the expected GEBs, and the sustainability, replication, and scale up of the project. However, the proposal is unclear about the modalities for the financial mechanism or innovation beyond credit lines or subsidies that will guarantee an effective finance or business model. We encourage the proponent to research examples of new financing/business models for this type of project, for example, energy performance contracting, citizen financing, etc. Identifying potential financing mechanisms early on in the project is essential as this information would influence the type of national standards and supporting legislation and governance structure that should be developed in the project.	The initial conceptualization of the Financial Mechanism is presented in Component 1 (page 26 of CEO Endorsement Request) with an illustrative diagram and description of the three stages required to establish the mechanism.
Given the vulnerability of project outcomes to climate risk as identified, a robust climate risk mitigation measure should be developed for the project.	In different parts of the document, reference is made to Urban Solutions based on nature as a climate change mitigation and reduction measure to be considered in the preparation of guides, manuals, and through-out project implementation.
There could be greater detail provided on the pilot project success metrics.	For this purpose, the "Operational strategies" to be employed in pilot projects consider criteria such as user behaviour, monitoring, and automated control of operations, are established. Regarding the success metrics of the pilots, component 2 projects an activity (2.1.3.2), oriented to the evaluation of the environmental and energy balance of the pilots, comparing the input and resultant indicators with respect to the baseline of the 3 pilot cities.

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

Project Preparation Activities Implemented	*GETF/LDCF/SCCF Amount ($)*		
	Budgeted Amount	*Amount Spent To date*	*Amount Committed*
Consultancies and contracts to develop program and/or project options			
Consulting services. outsourcing to elaborate key technical components of CEO Endorsement	110,614.00	85,691.20	24,922.80

Free prior and informed consent and related consultations			
Local stakehoders participations and Consultations	15,000.00	15,000.00	0
Translations of project documents for public consultations	7,000.00	7,000.00	0
Travel expenses	5,000.00	5,000.00	0
Total	137,614.00	112,691.20	24,922.80

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

Please also see maps in project profiles.(Annex J)

IMAGE 1. MAP OF PASTO SHOWING AREA, POPULATION AND COORDINATES

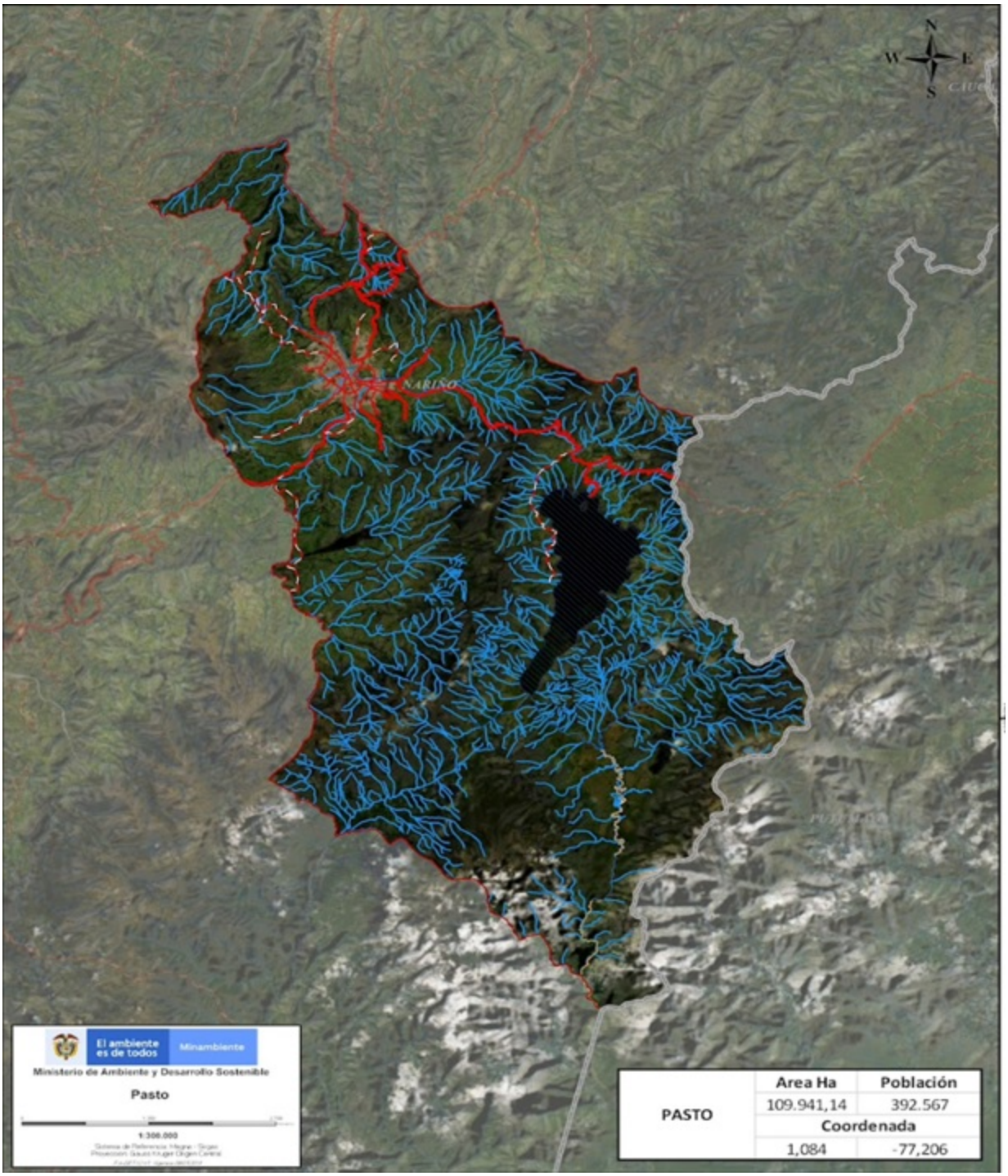
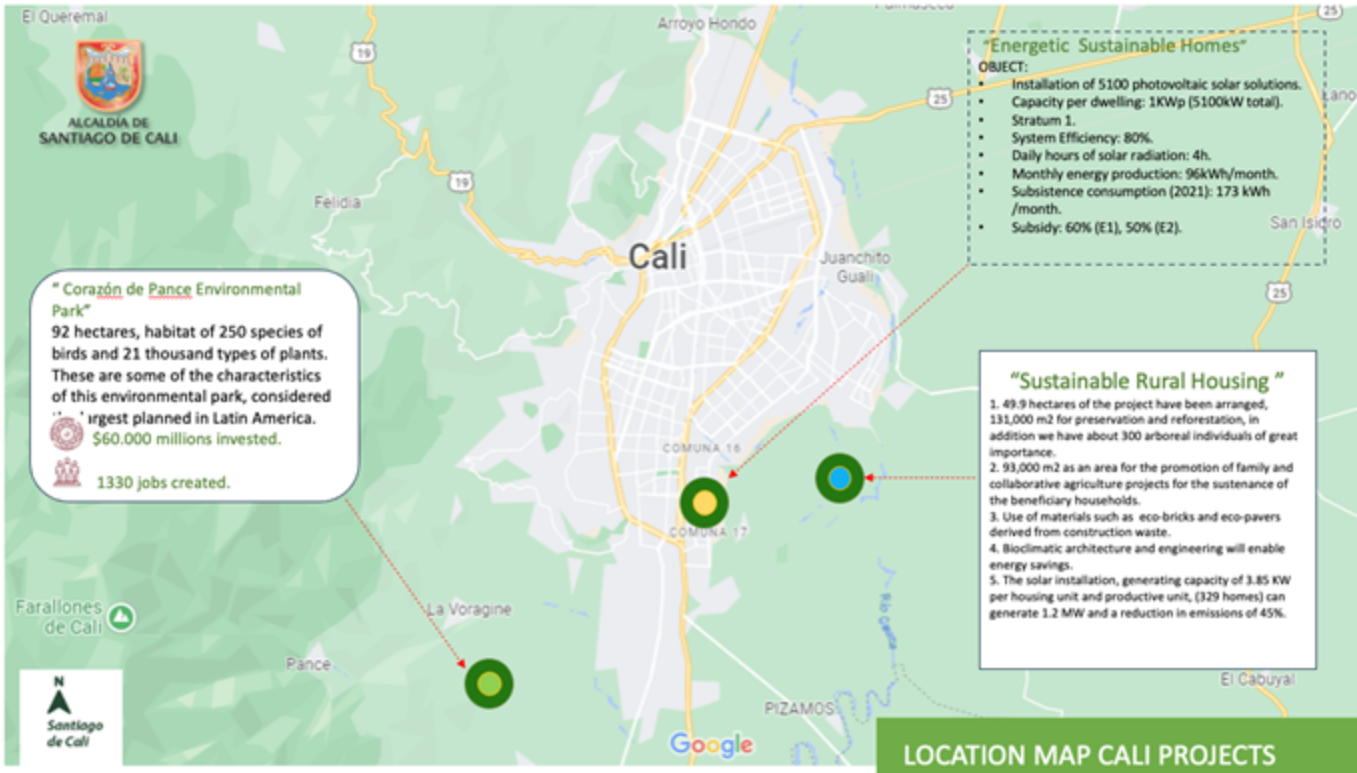
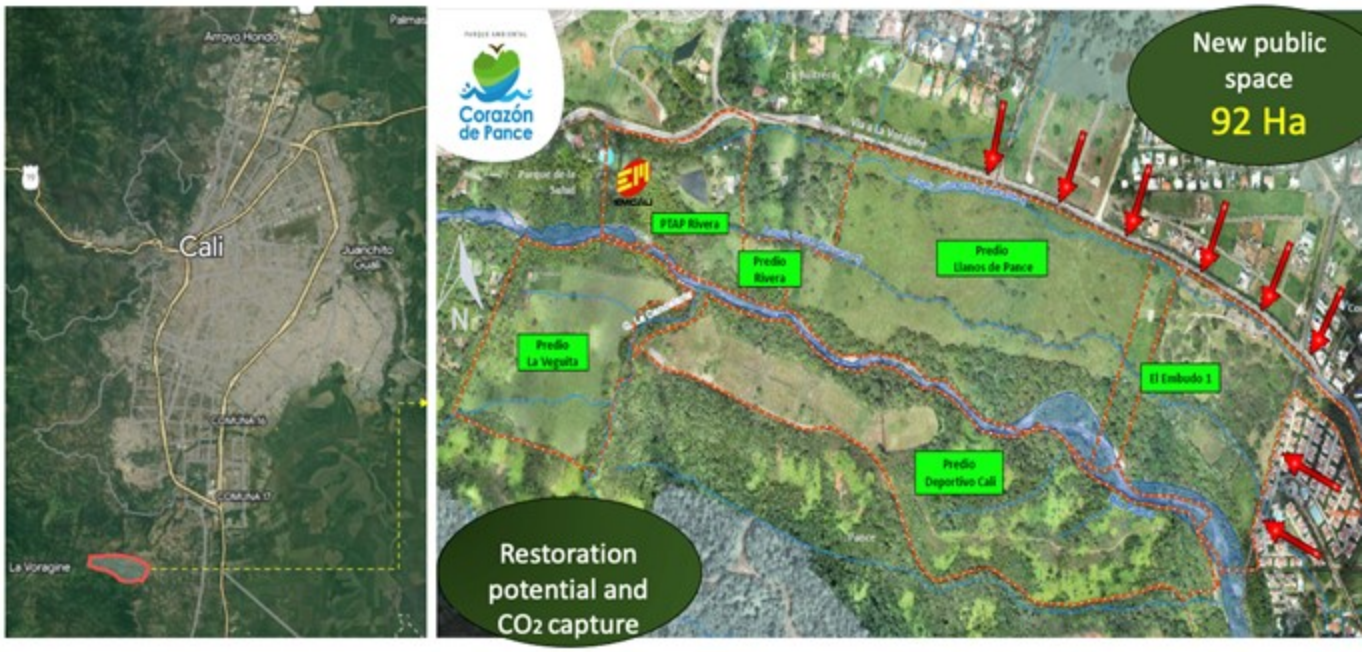


IMAGE 2. MAPS OF CALI SHOWING PROJECT INTERVENTION AREAS



LOCATION MAP CALI PROJECTS



CORAZON DE PANCE ENVIRONMENTAL PARK PROJECT

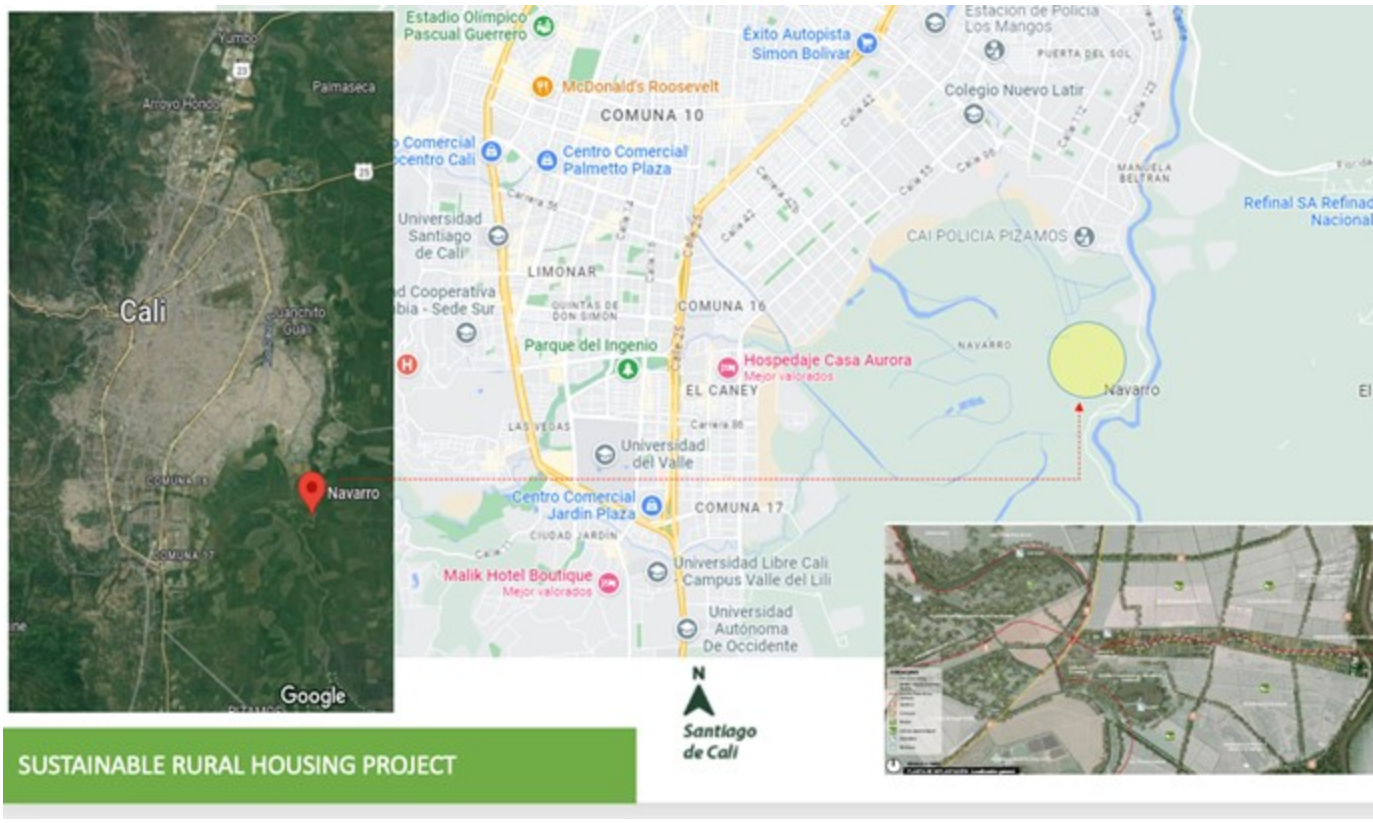


IMAGE 3. MAP OF BARRANQUILLA SHOWING AREA, POPULATION AND COORDINATES


N
W
E
S
MAGDALENA
El ambiente es de todos
Minambiente
Ministerio de Ambiente y Desarrollo Sostenible
Barranquilla
1:120.000
BARRANQUILLA
Area Ha
Población
15.420,21
1.297.082
Coordenada
10,982
-74,828

GEO LOCATION INFORMATION

The Location Name, Latitude and Longitude are required fields insofar as an Agency chooses to enter a project location under the set format. The Geo Name ID is required in instances where the location is not exact, such as in the case of a city, as opposed to the exact site of a physical infrastructure. These IDs are available on the GeoNames? geographical database containing millions of placenames and allowing to freely record new ones. The Location & Activity Description fields are optional. Project longitude and latitude must follow the Decimal Degrees WGS84 format and Agencies are encouraged to use at least four decimal points for greater accuracy. Users may add as many locations as appropriate. Web mapping applications such as OpenStreetMap or GeoNames use this format. Consider using a conversion tool as needed, such as:https://coordinates-converter.com Please see the Geocoding User Guide by clicking here.

Location Name	Latitude	Longitude	Geo Name ID	Location & Activity Description
Barramquilla	10.96854	-74.78132	3,689,147	
Cali	3.43722	-76.5225	3,687,925	
Pasto	1.2136	-77.28111	3,672,778	

ANNEX E: Project Budget Table

Please attach a project budget table.

See Annex E. Indicative Project Budget

Detailed Description	COMPONENT (USDeq.)							Total	Responsible Entity*
	COMP 1	COMP 2	COMP 3		Sub-Total	M&E	PMC	(USDeq.)	
	Outcome 1.1	*Outcome 2.1*	*Outcome 3.1*	*Outcome 3.2*					
Activity 2.1.3.1 Ca?o de la Ahuyama Environmental Park Lighting.		990,171			990,171			990,171	CCCS

Activity 2.1.3.1 Coraz?n de Pance Environmental Park		285,000			285,000			285,000	CCCS
Activity 2.1.2.2 Environmental and Energy Monitoring System for Buildings		245,000			245,000			245,000	CCCS
Energy Sustainable Households for Communities in Stratum 1 and 2 of Santiago de Cali.		2,100,000			2,100,000			2,100,000	CCCS
Activity 2.1.3.1 Zarcillejo Park Sustainable Lighting Project.		620,000						620,000	CCCS
Activity 1.1.1.5 Formulation of guidelines for creating an Energy Labelling System for Buildings (SEEE) to provide users with relevant information on the energy consumption of buildings and promote the adoption of improved efficiency standards in new construction.	100,000				100,000			100,000	CCCS

Activity 1.1.1.6 Design an incentive program targeting small and medium-sized enterprises, subject to compliance with labelling requirements, beginning with certifications and then move on to self-declarations and, eventually, environmental product declarations.	40,000				40,000			40,000	CCCS
Activity 2.1.2.1 Feasibility Study for the Energy Sustainable Homes in the communities of Las Flores and La Playa of the Macro Project Ci?naga de Mallorqu?n in Barranquilla (Intervention of 3,044 Existing Homes)		320,000			320,000			320,000	CCCS
Activity 2.1.2.1 Sustainable Rural Homes for resettlement of Communities in Risk Areas of Santiago de Cali.		245,000			245,000			245,000	CCCS

Activity 2.1.1.2 Feasibility Study for Comfortable Housing in the Rural Area El Encano, Pasto.		45,000			45,000			45,000	CCCS
Activity 2.1.1.2 Technical Study for Public Lighting in the Rural Area of the Municipality of Pasto		53,100			53,100			53,100	CCCS

Activity 2.1.3.2 Study the environmental and energy balance of public space pilot projects in three cities (use the tool to calculate the energy demand of buildings following Activities 1.1.2.2 and 1.1.2.4.) Carry out a comparative analysis of Energy Efficiency and sustainability indicators and their impact on CO2 emissions before and after the execution of the projects (see Activity 2.1.3.1.). Use baseline data from intervention sites in the three cities.		130,000			130,000			130,000	CCCS

Activity 1.1.1.1 Diagnose the current national regulations on Energy Efficiency in buildings and public spaces and formulate a roadmap that outlines the implementation of complementary regulations to enhance energy efficiency.	20,000				20,000			20,000	CCCS
Activity 1.1.1.2 Update and adjust the baseline energy consumption in the three cities (Barranquilla, Cali, and Pasto) using information from R 0549 and actual consumption data in each city.	15,000				15,000			15,000	CCCS
Activity 1.1.1.3 Create a plan to identify buildings that comply with the actions declared in the construction license per RES 0549, Article 12.	20,000				20,000			20,000	CCCS

Activity 1.1.1.4 Create a ministerial table led by the Ministry of Housing and the Ministry of Environment as the entity responsible for RES 549 to ensure the application of the updated regulations.	10,000				10,000			10,000	CCCS
Activity 1.1.2.1 Develop a roadmap clearly defining the processes and actions for monitoring, reporting, and MRV verification of RES 0549 in the country's territories by creating an intersectoral table for sustainable construction to work with the Ministry of Housing to apply an MRV that integrates all the instances and is aligned with the governance system.	20,000				20,000			20,000	CCCS

Activity 1.1.2.2 Develop technical tools for monitoring, reporting, and verifying national and regional energy efficiency regulations.	15,000				15,000			15,000	CCCS
Activity 1.1.2.3 Design a tool for calculating the energy demand of buildings that will allow builders to simulate the application of Sustainable Construction criteria in their projects.	15,000				15,000			15,000	CCCS
Activity 1.1.3.1 Identify energy efficiency strategies in three of the four climate zones of Colombia defined by Resolution 0549 and its Annex 1.	20,000				20,000			20,000	CCCS

Activity 1.1.3.2 Conduct climate micro-zoning studies to understand the variability of the relationship between topography and temperature to facilitate the simulation and calculation processes for compliance with the standard.	20,000				20,000			20,000	CCCS
Activity 1.1.3.3 Assess the Carbon Footprint of at least one public building?s life cycle and one public space pilot project to demonstrate and validate the methodology to be applied to other buildings throughout Colombia.	30,000				30,000			30,000	CCCS
Activity 1.1.3.4 Consolidate a package of Sustainable Construction Manuals for three climate zones of Colombia defined by Resolution 0549.	30,000				30,000			30,000	CCCS

Activity 1.1.3.5 Elaborate Action Plans for energy efficiency based on the Sustainable Construction Manuals of the climate zones for the 3 prioritized cities.	50,000				50,000			50,000	CCCS
Activity 1.1.3.6 Develop tools (handbooks and guidelines) covering all ecosystem types to assess and quantify UNbS impacts to help scale up the implementation of Urban Green Infrastructure UGI.	50,000				50,000			50,000	CCCS
Activity 1.1.4.4 Create a task force led by the Ministry of Education to incorporate the contents of Resolution 0549 within the minimum requirements for architecture and engineering studies.	10,000				10,000			10,000	CCCS

Activity 1.1.5.2 Design and launch the Virtual Platform for the evaluation of projects, works or activities of energy efficient buildings in public space.	30,000				30,000			30,000	CCCS
Activity 1.1.6.1 Conduct technical assessments to identify the finance gaps, review international experiences, and make recommendations to strengthen green finance and collaboration with international organizations to leverage additional funding, technical expertise, and best practices.	20,000				20,000			20,000	CCCS
Activity 1.1.6.2 Identify opportunities for strengthening the current MRV of Climate Finance to enhance monitoring and evaluation.	10,000				10,000			10,000	CCCS

Activity 1.1.6.3 Identify opportunities for strengthening the Colombian Green Taxonomy to include additional criteria for sustainable construction and green financing.	20,000				20,000			20,000	CCCS
Activity 1.1.6.4 Design and establish a financial mechanism aimed at addressing financing gaps and to be capitalized through a combination of public and private resources, with contributions from the National Government, the construction sector, national and international financial institutions, and public and private bilateral and multilateral cooperation	162,000				162,000			162,000	CCCS

Activity 1.1.6.6 Design innovative financial instruments to facilitate public-private partnerships to scale up resources for financing including considerations for joint financing programs, establishment of sustainable investment funds, fiscal incentives for financial institutions, and issuance of green and social bonds by the government to attract private investors.	30,000				30,000			30,000	CCCS
Activity 1.1.6.7 Design and implement strategies that aim to address the perceived risks associated with energy efficiency and sustainable construction projects, making them more appealing to financial institutions.	30,000				30,000			30,000	CCCS
National Project Coordinator**(1)**					-		180,000	180,000	CCCS
Energy Efficiency & Climate Change Expert	70,000	70,000	10,000	30,000	180,000			180,000	CCCS

Public Spaces Expert	70,000	70,000	10,000	30,000	180,000			180,000	CCCS
Safeguards & Gender Specialist						120,000		120,000	CCCS
Financial & Procurement Specialist							120,000	120,000	CCCS
Municipal Technical Liaison - Baranquilla	20,000	70,000	9,000	9,000	108,000			108,000	CCCS
Municipal Technical Liaison - Cali	20,000	70,000	9,000	9,000	108,000			108,000	CCCS
Municipal Technical Liaison - Pasto	20,000	70,000	9,000	9,000	108,000			108,000	CCCS
Inception Workshop						15,000		15,000	CCCS
PSC Meetings						50,000		50,000	CCCS
Activity 1.1.4.1 Design, prepare and conduct education and training courses on sustainable construction topics and issues	30,000				30,000			30,000	CCCS
Activity 1.1.4.2 Design and conduct a training for trainers? program to deliver education and training on sustainable construction and energy efficiency.	25,000				25,000			25,000	CCCS

Activity 1.1.4.3 Create and implement a technical assistance program targeted at construction companies to incorporate sustainable construction and energy efficiency criteria in construction phases.	25,000				25,000			25,000	CCCS
Activity 1.1.5.1 Conduct a symposium to identify user needs and define specific platform characteristics, considering sustainability criteria, CO_2 reduction, and life cycle analysis.	40,000				40,000			40,000	CCCS
National Travel	5,000	5,000	15,000	5,000	30,000			30,000	CCCS
International Travel	5,000	5,000	10,000	5,000	25,000			25,000	CCCS
Stationery and Software licences							27,864	27,864	CCCS

Activity 1.1.4.5 Organize an itinerant exhibition on sustainable construction and an educational seminar focusing on energy efficiency to promote the promotion, distribution, and sale of sustainable and energy efficient products in the construction industry.	40,000				40,000			40,000	CCCS
Activity 1.1.6.5 Promote the scale up of ESG (Environmental, Social and Governance) and ESMS (Environmental and Social Management System) in the financial sector to facilitate access to new sustainable investments and green funds through training and capacity-building programs.	15,000				15,000			15,000	CCCS

Activity 3.2.1.1 Establish a web page for the project, where all milestones are reported and communicated.				10,000	10,000			10,000	CCCS
Activity 3.2.1.2 Develop and conduct a podcast regarding energy efficiency, low-carbon, and sustainable construction.				20,000	20,000			20,000	CCCS
Activity 3.2.1.3 Construct and manage social media where important news, milestones and information can be shared with stakeholders and the public in general.				35,000	35,000			35,000	CCCS
Activity 3.2.1.4 Implement 1 webinar per year inviting national and international experts to discuss relevant and state-of-the-art technologies and advances in sustainable construction and energy efficiency for the sector.				50,000	50,000			50,000	CCCS

Activity 3.2.1.5 Prepare and conduct four events for sharing the results of the Action Plans from Component 1, one in each climate zone.				85,000	85,000			85,000	CCCS
Activity 3.2.1.6 Encourage the use of the platform from Output 1.1.5. by key stakeholders through awareness campaigns, training, and dissemination efforts. Highlight benefits such as sustainability, access to financing, and compliance with regulations and certification standards. Foster collaboration with public, private and allies at local levels.				95,000	95,000			95,000	CCCS

Activity 3.2.2.1 Conduct a "Network of pioneering cities in sustainable construction in Colombia" consisting of workshops and spaces which should also serve as a feedback mechanism to local municipalities and other stakeholders on the results and advances of the implemented initiatives.				65,000	65,000			65,000	
Gender Action Plan						25,000		25,000	CCCS
Monitoring of ESS & Indigenous Framework Plan		30,000		10,000	40,000	25,000		65,000	CCCS
Office Utilities	5,000	10,000	30,000	5,000	50,000			50,000	CCCS
Annual Audit							50,000	50,000	CCCS
Project supervision and performance monitoring (site visits)			8,000	20,000	28,000	50,000		78,000	CCCS
Insurance	5,000	5,000	2,500	2,500	15,000			15,000	CCCS
Activity 3.1.1.1 Development of mid-term evaluation through an external consultancy to monitor progress of the project.						30,000		30,000	CCCS

Activity 3.1.1.2 Development of final evaluation through an external consultancy to assess the accomplishment of the objectives and ToC.						35,000		35,000	CAF
	1,162,000	**5,438,271**	**112,500**	**494,500**	**6,587,271**	**350,000**	**377,864**	**7,935,135**	

***(1)* Please note any budget requirements for the Project Coordinator that exceeds GEF funds will be covered by PMC Co-financing resources.**

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

N / A

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

N / A

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as

established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

N / A