TC ABSTRACT

I. Basic Project Data

▪ Country/Region:	COLOMBIA/CAN - Andean Group
▪ TC Name:	Supporting the Caribe Energy Efficiency (EE) Program
▪ TC Number:	CO-T1470
▪ Team Leader/Members:	Maria Alexandra Planas (INE/ENE), Team Leader; Andrea Giraldo (CAN/CCO); Juan Carlos Cárdenas, Cecilia Seminario y Stephanie Suber (INE/ENE); Misa Haratsu (INE/ENE); Mónica Centeno Lappas (LEG/SGO)
▪ Taxonomy:	Client Support
▪ Number and name of operation supported by the TC:	N/A
▪ Date of TC Abstract:	April 26th, 2018
▪ Beneficiary:	*Departamento Nacional de Planeación* (DNP)
▪ Executing Agency:	Inter-American Development Bank (IDB)
▪ IDB funding requested:	$ 400,000.00
▪ Local counterpart funding:	$ 0.00
▪ Disbursement period:	24 months
▪ Types of consultants:	Individuals and firms
▪ Prepared by Unit:	Energy Division (INE/ENE)
▪ Unit of Disbursement Responsibility:	IDB Country Office in Colombia
▪ TC included in Country Strategy (y/n): ▪ TC included in CPD (y/n):	No Yes
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Productivity and innovation; and climate change

II. Objective and Justification

2.1 The overall objective is to support the Government of Colombia prepare a large-scale Energy Efficiency (EE) Program for the Caribbean region (hereinafter called “Caribbean EE Program”) in order to improve the region’s EE and mitigate climate change by increasing the use of EE technologies in the residential and government sectors.

2.2 The Government of Colombia prioritized the program for co-financing by the Green Climate Fund and requested IDB act as the Accredited Entity for its preparation and implementation. In addition, the Government of Colombia is planning to formally request the IDB to co-finance the Program. The IDB’s energy group has already supported the preparation of a technical concept and Technical Cooperation (TC) funds are being requested to finalize the program's preparation, including the completion of the technical design, the economic and financial analysis, the implementation arrangements and the environmental and social management plan.

2.3 The objective of this TC is therefore to prepare a high-quality Program that supports best practice EE investments in the Colombian Caribbean region that could be replicated throughout the country. The program is consistent with Colombia’s Country Strategy objectives of increasing productivity by progressively reducing the subsidies in public sectors and it will promote economic efficiency in view of life-cycle cost, that matches the principal concept of quality infrastructure. This is also in alignment with the Sustainable Infrastructure strategy of the IDB in terms of supporting ongoing improvements in infrastructure governance to enhance efficiency in the delivery of infrastructure. Moreover, this TC will help develop an efficient implementation scheme and adequate monitoring tools to ensure that energy and subsidy savings are adequately captured.

2.4 The Caribbean region of Colombia includes seven provinces (*Guajira, Cesar, Magdalena, Atlántico, Bolivar, Córdoba, and Sucre*). It covers 132,288 sqm and has a population of about 10 million (around 21% of the total Colombian population). This region presents a high consumption of energy, partly due to the tropical climate conditions of the area, and partly due to a generalized culture of high energy demand and low energy savings behavior. Total power demand for the last 5 years represented 13,632 GWh per year, with a total average consumption of 10,982 Gwh/y and losses averaging 2,650 GWh (23% of total national energy consumption, but over 33% of total losses).

2.5 Most of the energy consumption in households is used for refrigeration (40%), followed by fans (20%), TVs (19%), and lighting (12%). It is estimated that about 30% of lamps are still incandescent (about three million lamps). Total power consumption used for home refrigerators represented 1,862 GWh in 2015, out of which 713 GWh corresponds to small fridges, and 297 GWh are represented by consumption from refrigeration equipment older than ten years (i.e. around 168,000 refrigerators).

III. Description of Activities and Outputs

3.1 The Caribbean EE Program seeks to develop a large-scale energy demand program to promote the adoption of energy efficient technologies by: (i) replacing inefficient household refrigerators and incandescent bulbs, with energy efficient appliances and LED lamps. Also, the project will test the installation of hot air extractor fans, window light filter films, and roof insulating painting measures to reduce the use of indoor ventilator fans and make the performance of energy saving equipment more effective. The benefits will go toward segments of the population with lower income levels where the subsidies are higher; (ii) substitute refrigeration and illumination equipment at select government and official buildings in small municipalities; and (iii) install solar photovoltaic panels in public buildings for self-consumption. It is expected the program will bring the following benefits:

- Replacement of appliances and incandescent bulbs in 800,000 households. Gains in EE in the Caribbean Region of approximately 5,175 GWh over the life of the project;
- Reduction of CO_2e emissions associated with reduced total kWh saved which is approximately 3.1 mtCO_2e over the ten-year project lifespan;
- Enhanced power generation resiliency as lower power demand during peak hours;
- Better energy demand management in official buildings;
- Lower electricity bills reducing the amount of subsidies provided by the Government which can then be diverted to other needs such as education or health care;
- Reduced adverse health effects because of better air quality around the coal and natural gas fired power plants; and
- Global environmental benefits from climate change mitigation efforts resulting from lower energy use, and substitution with renewable energy.

3.2 **Component I: Caribbean Energy Efficiency Program's (CEEP) preparation activities.** It will support the design of the CEEP by: i) completing the technical design; ii) carrying out the financial and economic evaluation; iii) estimating the reduction of electricity consumption and emissions; iv) defining the mechanism for selection of beneficiaries; v) developing energy audits of local government buildings; vi) evaluating the program's impact in the electricity subsidies; and vii) financing studies about the regulatory framework EE programs/tools in Colombia.

3.3 **Component II: Environmental and Social Management Plan.** This component will finance: (i) the preparation of an environmental management plan, including the design

of a system for the adequate collection, transport, disassemble, recycling, and disposal of the replaced equipment, considering ozone depleting substances and other toxic dangerous waste, and the monitoring and evaluation of potential carbon savings; (ii) the design of a communication and promotion campaign; and (iii) the design of a social management plan including education and training on EE.

3.4 **Component III: Communication, Dissemination and Administration.** The administrative component will finance at least two workshops to support the Program dissemination in the Colombian Caribbean Region. It also will finance monitoring activities, such as missions to the towns where the project will be implemented and consultancies in the field that can support the program design implementation.

IV. Budget

Indicative Budget (in US$)

Activities/Components	IDB Funding
Caribbean EE Program's (CEEP) preparation activities	250,000.00
Environmental and Social Management Plan	100,000.00
Communication and Dissemination	50,000.00
Total	**400,000.00**

V. Executing Agency and Execution Structure

5.1. By request of the DNP and in accordance with Point D of Annex 10 of GN-2629-1 and Point D of Annex 10 of OP-1155-2, the TC will be executed by the IDB, to: (i) avoid lengthy internal budgeting procedures that can jeopardize the achievement of its objectives by delaying the start of the TC execution and consultants' payments, as the TC is not included in the DNP 2018 budget, and (ii) facilitate coordination between the different public-sector entities (DNP, Ministry of Mines and Energy, UPME and Renewable Energy and Energy Efficiency Fund (FENOGE)).

5.2. The Energy Division (INE/ENE) will be responsible for its execution, in coordination with the IDB Country Office in Colombia (CAN/CCO). The Bank will contract individual consultants, consulting firms, and non-consulting services in accordance with the Bank's current procurement policies and procedures: (i) the individual consultants will be hired in accordance with the guidelines set out in the AM-650; (ii) the procurement process for consulting firms will follow the Bank Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-1) and the related Operational Guidelines (OP-1155-4), and (iii) the procurement of non-consultant services will follow the Bank Corporate Procurement Policy (GN-2303-20). In compliance with the Operational Guidelines for Technical Cooperation Products-Revised version (GN-2629-1), this TC is classified as Client Support. The technical responsibility is in INE/ENE.

5.3. The focal point designated and sector specialist responsible for executing this TC will be the Senior Energy Specialist based in Bogota, Colombia, with the support of the Bank Country Office in Colombia (CAN/CCO) and the INE/ENE Team.

VI. Project Risks and Issues

6.1 The main risks of this TC are linked to possible problems and delays in the development of the studies, which could arise from difficulties in coordination between the multiple actors that will be involved, among them the National Planning Department, and the Ministry of Mines and Energy. This risk can be mitigated by involving the counterparts from the start of the execution of the TC, presenting and discussing regularly the

progress of the studies and consultancies. Likewise, the execution from INE/ENE, with the support of specialized consultants, will help to mitigate these potential risks.

VII. Environmental and Social Classification

7.1 According to the Environmental and Safeguards Compliance Policy (OP-703), this TC has been classified as Category “B”. The latter ratifies a negative minimum or inexistent environmental, social and/or cultural impact; therefore, no environmental assessment studies or consultations are required for Category “C” operations. (see Safeguard Policy Filter Report and Safeguard Screening Form Report).