

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

COLOMBIA

**FINANCING PROGRAM FOR THE TECHNOLOGICAL
TRANSFORMATION OF BOGOTA'S INTEGRATED PUBLIC
TRANSPORTATION SYSTEM**

(CO-L1096)

LOAN PROPOSAL

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CONTENTS

PROJECT SUMMARY

I.	DESCRIPTION AND RESULTS MONITORING	1
A.	Frame of reference, problems addressed, and rationale	1
B.	Objectives, components, and costs	7
C.	Outcome indicators	8
II.	FINANCING STRUCTURE AND RISKS	8
A.	Financing instrument.....	8
B.	Socioenvironmental risks.....	9
C.	Fiduciary risk	10
D.	Other special considerations	10
III.	EXECUTION AND ADMINISTRATION PLAN.....	11
A.	Execution mechanism	11
B.	Monitoring and evaluation measures.....	13

ANNEXES	
Annex I	Summary Development Effectiveness Matrix (DEM)
Annex II	Results matrix
Annex III	Fiduciary agreements and requirements

ELECTRONIC LINKS	
REQUIRED	
1.	Annual work plan (AWP) http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37760993
2.	Monitoring and evaluation plan http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37761174
3.	Environmental and Social Management Report (ESMR) http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37761176
OPTIONAL	
1.	Estimated reduction in emissions and economic evaluation http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37760915
2.	Financial evaluation: Hybrid and electric buses http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37760922
3.	Evaluation: Financial sector of Colombia http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37760923
4.	Colombian investment plan for the Clean Technology Fund http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37760927
5.	Results of tests on hybrid and electric buses http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37760935
6.	Financial evaluation of Bancóldex http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37760951
7.	Characteristics of Bogota's Integrated Public Transportation System http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37760957
8.	Process for procuring vehicles through the program http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37760963
9.	Alignment with the financing criteria of the Clean Technology Fund http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37792682
10.	Safeguard Policy Filter and Safeguard Screening Form http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37802339

ABBREVIATIONS

Bancóldex	Banco Colombiano de Desarrollo Empresarial y Comercio Exterior [Colombian Business Development and Foreign Trade Bank]
CO	Carbon monoxide
CO ₂	Carbon dioxide
CONPES	Consejo Nacional de Política Económica y Social [National Economic and Social Policy Council]
CPT	Transporte Público Colectivo [collective public transportation (system)]
CTF	Clean Technology Fund
GHG	Greenhouse gas
NO _x	Nitrous oxides
PCR	Project completion report
PNTU	Programa Nacional de Transporte Urbano [National Urban Transportation Program]
SITP	Sistema Integrado de Transporte Público [Integrated Public Transportation System]

PROJECT SUMMARY

COLOMBIA

FINANCING PROGRAM FOR THE TECHNOLOGICAL TRANSFORMATION OF BOGOTA'S INTEGRATED PUBLIC TRANSPORTATION SYSTEM (CO-L1096)

Financial Terms and Conditions			
Borrower: Banco de Comercio Exterior de Colombia S.A. (Bancóldex) Guarantor: Republic of Colombia Executing agency: Bancóldex		Amortization period:	40 years
		Disbursement period:	48 months
		Grace period:	10 years
Source	Amount (US\$)	Interest rate:	Fixed 0.25%
IDB (Clean Technology Fund) *	40,000,000	Credit fee:	0.45% one-time payment
Total	40,000,000	Approval currency:	U.S. dollars
Project at a Glance			
<p>Objectives: The general objective of the program is to improve public transportation in Bogota. Its specific objectives are to reduce transportation operating costs, local pollution, and greenhouse gas emissions associated with Bogota's public transportation system.</p>			
<p>Special conditions precedent to the first disbursement: The following requirements are to be met to the IDB's satisfaction precedent to the first disbursement of program funds: (i) formal appointment by Bancóldex of the program coordinator (paragraph 3.2); (ii) approval by Bancóldex of the program's Credit Regulations (paragraph 3.4); and (iii) approval by Bancóldex of the investment plan for the first 180 days of the program, if there is a disbursement as an advance of funds (paragraph 3.6).</p>			
<p>Exceptions to Bank policies: A partial waiver is required to the IDB operational policy "Guarantees Required from the Borrower" (OP-303), since the Republic of Colombia will guarantee only the financial obligations stemming from the loan contract (paragraph 3.7).</p>			
<p>Project consistent with country strategy: Yes [X] No []</p>			
<p>Project qualifies as: SEQ [] PTI [] Sector [] Geographic [] Headcount []</p>			

* Document GN-2571: "Proposal for the Establishment of the Clean Technology Fund (CTF) in the Inter-American Development Bank."

I. DESCRIPTION AND RESULTS MONITORING

A. Frame of reference, problems addressed, and rationale

- 1.1 **Socioeconomic context.** With 7.6 million inhabitants, Bogota accounts for approximately 16% of Colombia's population. The city accounts for 24.5% of national gross domestic product,¹ and its economic growth rate was 6% in 2011. In terms of the labor market, the economically active population is approximately 54%, and its work force ranks highest in the country in terms of education and training.² Bogota and the surrounding department of Cundinamarca concentrate the largest number of businesses in the country; in 2010, this amounted to 25% of all businesses. The city faces the enormous challenge of providing efficient transportation to enable it to develop its economic potential, boost its competitiveness, and improve the quality of life of its inhabitants.
- 1.2 **Motorization and urban transportation.** Around 8.8 million motorized trips are made daily in Bogota,³ where public transportation is the primary means of travel.⁴ Sixty-seven percent (67%) of households in Bogota lack any type of motor vehicle, and 90% of people who travel by public transportation do not own a car or have one available to them. This notwithstanding, high motorization rates have increased the number of private cars in the city,⁵ with the subsequent increase in traffic congestion. The city's main challenge is to maintain public transportation as the primary mode of transportation in order to ensure efficient and sustainable mobility.
- 1.3 Over the past 15 years, Bogota has invested heavily in developing Transmilenio, its mass transit network. Today, the city has a dedicated network of 102 km for high-capacity buses that serve the road corridors with highest demand. The Transmilenio mass transit system serves 31% of public transportation trips, providing a relatively high level of service due to its organization, regulation, and dedicated infrastructure. The remaining 69% of public transportation trips are served by Transporte Público Colectivo [the collective public transportation system] (CPT), which comprises Bogota's other buses, small buses, and minibuses.
- 1.4 **The problems of the CPT.** Although the CPT services most public transportation travel, historically it has been affected by problems common to other Latin American cities. First, in the past, an oversupply of public transportation vehicles created a problem in which supply exceeded real passenger demand. According to some studies, in 2005 there were more than 7,500 excess buses in Bogota.⁶

¹ Source: Departamento Administrativo Nacional de Estadística [National Administrative Statistics Department] (DANE), National Accounts, 2011.

² Source: Bogota Chamber of Commerce, 2010.

³ Source: District Mobility Survey, 2011.

⁴ In Bogota, 5.2 million public transportation trips are taken daily (58% of all motorized trips).

⁵ Between 2002 and 2010, the number of private automobiles in Bogota rose from 350,000 to 757,000 units.

⁶ Source: Ardila. La olla de presión del transporte público [The pressure cooker of public transportation]; Revista de Ingeniería Universidad de Los Andes (2005).

Oversupply causes increased traffic on the streets and slower traffic flows. Second, CPT buses have traditionally been obsolete both in terms of vehicle age and design. In 2010, the average age of the bus fleet was 11.5 years, and 37% of buses were over 15 years old.⁷ The old age of the public transportation fleet adversely affects the environment because of higher pollution emissions. Third, the CPT lacks a network of bus stops with technical conditions that allow passengers to wait and board safely. This, added to the competition for passengers on the streets among the different public transportation providers, has created serious problems of accidents with other vehicles and with passengers.

- 1.5 The CPT's business model is one of the structural reasons for its inefficiency. The operation has been traditionally in the hands of small-scale bus owners whose remuneration is not linked to service efficiency and quality. Quite the contrary, their remuneration has depended exclusively on the number of passengers transported by each vehicle. Work relations between owners and the drivers are usually informal, and depend on the number of passengers transported, which heightens competition for passengers on the streets. Owners' inability to reinvest in maintaining and renewing their vehicles has contributed to the old age of the public transportation vehicle fleet.
- 1.6 **Environmental impact.** The CPT's inefficiency and the age of the vehicle fleet have aggravated environmental conditions. Bogota is considered one of the Latin American cities with the highest levels of air pollution,⁸ with vehicles contributing nearly half the local air pollutants (nitrous oxides (NO_x), sulfur oxides (SO_x), carbon monoxides (CO), particulate matter).⁹ These emissions are directly related to the number of vehicles, their technology, and traffic levels.¹⁰ Air pollution costs include impact on respiratory morbidity.¹¹ With regard to greenhouse gas (GHG) emissions, Bogota's public transportation contributes approximately 0.6 million tons of carbon dioxide (CO₂) annually. Based on the number of vehicles, the type and their age, public transportation in Bogota has been identified as one of the sectors with the greatest potential for improving local environmental conditions and mitigating the impacts of climate change.
- 1.7 **The country's strategy.** The Government of Colombia recognizes the importance of urban transportation in the competitiveness of cities, improving the environment, and mitigating climate change effects. Its National Urban Transportation Program (PNTU) formulated a public policy to help strengthen urban public transportation programs in the country's main cities.¹² The PNTU supports the development of

⁷ Source: Bogota Chamber of Commerce, 2010.

⁸ Source: Universidad de los Andes, 2011.

⁹ Source: Ministry of Environment, Housing, and Subnational Development; 2011.

¹⁰ Annual average speed. January – December (23.67 km/h). Source: District Secretariat of Mobility, 2010.

¹¹ Around 4,000 deaths in 2007 could be attributed to causes associated with air pollution.

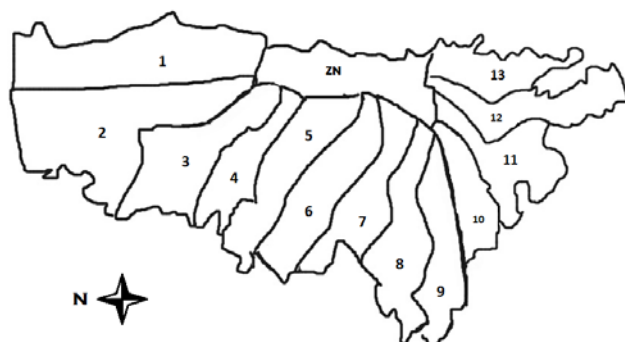
¹² The PNTU comes under the National Economic and Social Policy Council (CONPES) 3167 of 2002, as followed up in CONPES 3260 of 2003, and CONPES 3368 of 2005.

- transportation systems in large and medium cities by participating in infrastructure investments and support for project implementation.
- 1.8 In this connection, in 2010 Colombia submitted its investment plan to the Clean Technology Fund (CTF) to support transformational projects toward low-carbon development.¹³ Under this plan, US\$40 million was assigned to the Integrated Public Transportation System (SITP) project in Bogota, to be executed by the IDB. The project was selected because of its potential to reduce GHG emissions and for the impact it could have on transforming the transportation sector and ultimately other countries.
 - 1.9 **The Integrated Public Transportation System.** Bogota is implementing the SITP in order to improve the quality of public transportation. The SITP will enhance the quality of CPT by eliminating the oversupply of services, modernizing the vehicle fleet, introducing a hierarchical route network, formalizing operators' businesses, and integrating all fares into a unified payment system. When the SITP is fully implemented, the city will have a cleaner and more efficient system operating with an organized network of routes, stops, and terminals. The integrated fare schedule will reduce the cost of transfers from one bus to another, which will benefit users living farthest away and who, in Bogota, tend to be the most disadvantaged economically. The SITP was designed in 2009 and is being rolled out gradually to ensure a smooth transition to the new operational arrangement. See [optional electronic link #7](#).
 - 1.10 The SITP consolidates Bogota's public transportation service in 13 zones. Permits to provide transportation services in each zone were awarded through concessions to transportation service companies, most of which operate within the CPT and which are in the process of migrating their informal organizations to a service delivery business model. The process to award concessions by zone concluded in 2010, and since then the companies have been preparing to make the necessary investments.
 - 1.11 Service quality in the zone concessions will be regulated through the concession contracts that specify the obligations of the concessionaires during the implementation period and during the operation of the SITP;¹⁴ this includes the obligation to purchase new vehicles and to adapt them for service delivery. Unlike in the CPT, SITP service quality will be monitored in accordance with indicators agreed on in the concession contracts, which will ensure that operators' incentives are in line with the quality of service they provide users.

¹³ The plan was recently revised and submitted to the CTF on 3 May 2013. On 29 July 2013, the CTF approved the proposed loan. ([IDBDOCS No. 37760927](#))

¹⁴ Operating contracts are for a 24-year period.

Table 1. The Integrated Public Transportation System of Bogota



- Operating zones**
- | | |
|------------------|--------------------|
| 1. Usaquén | 8. Kennedy |
| 2. Suba Oriental | 9. Bosa |
| 3. Suba Centro | 10. Perdomo |
| 4. Calle 80 | 11. Ciudad Bolívar |
| 5. Engativá | 12. Usme |
| 6. Fontibón | 13. San Cristóbal |
| 7. Tintal | ZN: Neutral zone * |

* Operated by one or more SITP concessionaires in accordance with the route map of the system.

Type of vehicle	Capacity (passengers)	Number of vehicles	Basic characteristics of the SITP: (i) consolidates service in 13 zones; (ii) service regulated by concession contracts with transport operators; (iii) optimizes supply: reduces number of vehicles from 16,000 to 9,900; (iv) integrates fares into a unified payment system; (v) has an organized operational arrangement, with 6,400 bus stops, and nine control centers to monitor operations.
Standard bus	80	2,000	
Medium bus	50	4,400	
Small bus	40	1,500	
Microbus	19	2,000	
Total		9,900	

- 1.12 The SITP will streamline and renew the supply of CPT buses, making it possible to replace obsolete vehicles. The aim is to migrate from a total fleet of 16,000 vehicles to a streamlined fleet of 9,900, with the capacity to serve Bogotá's entire demand for public transportation. In addition, the SITP has set 12 years as the service life for its buses, and all vehicles exceeding that limit will be eliminated. Adding vehicles to the system and properly retiring obsolete vehicles are contractual obligations of SITP concessionaires, which will guarantee modernization of the fleet.
- 1.13 Other contractual obligations of SITP concessionaires include employee training, vehicle adaptation, fleet maintenance, and compliance with environmental regulations. Transmilenio S.A. is the entity responsible for monitoring compliance with SITP contracts; it has been in charge of supervising compliance with Transmilenio operating contracts since 1999. The project is being implemented in a gradual manner, and the process to award contracts for the operating zones began in 2010. Since 2012, Transmilenio S.A. has continued to implement the different elements of the SITP.
- 1.14 **SITP bus types.** The SITP was designed to serve passenger demand in accordance with a hierarchical route system. The corridors with greatest demand are served through Transmilenio's trunk route system. Services outside the trunk routes are called zone services, and will be served by buses with capacity for up to

80 passengers.¹⁵ Transmilenio S.A. regulates the addition of buses to the SITP, pursuant to a vehicle purchase schedule agreed on with each concessionaire.

- 1.15 **Bus technologies.** At the present time, all CPT buses are fueled by diesel. Each time they purchase a new bus that will be incorporated into the system, the SITP's concessionaires may select the type of bus technology so long as it meets the technical weight, capacity, and power specifications set by Transmilenio S.A. Although diesel continues to be the most economical option,¹⁶ cleaner technology options that meet the SITP's technical specifications are available on the market and are immediately available for commercial purposes. Hybrid and electric buses are considered clean technologies because of their low emission levels.¹⁷
- 1.16 Hybrid buses combine a conventional internal combustion engine with an electric propulsion system. The electric power source obtains higher fuel economies than conventional vehicles and does not require additional investments in infrastructure. Electric buses receive power from electric motors that respond to control systems that regulate engine power. These buses use batteries that need to be charged by an external source and must be recharged after several hours. Hybrid and electric buses are being used successfully in several cities around the world. In particular, hybrid technology has been on the market for several years, and hybrid bus fleets exist in several cities. That technology has performed as expected, generating close to 30% savings in fuel consumption. For its part, electric bus technology has been on the market for less time, although cities including Shenzhen and Shanghai are already using electric buses on a massive scale.
- 1.17 **Tests of hybrid and electric buses.** In order to build confidence in clean technologies and demonstrate their performance, the IDB financed tests of hybrid and electric buses¹⁸ in Bogota and other Latin American cities. The tests measured the emissions and energy consumption of 17 buses in 30 hours of tests under real driving conditions along bus routes selected by local authorities and transportation operators in the participating cities. Hybrid bus technologies registered 26% less CO₂ emissions than standard diesel technologies, under comparable weight, route, and traffic conditions. The average reduction in local pollutants, when hybrid technologies were compared with exclusively diesel technologies, were 62% for NO_x, 72% for particulate matter, 73% unburned hydrocarbons, and 80% for carbon monoxide (CO). Average fuel consumption of hybrid technologies was 31% less than diesel buses. In the two cities where completely new electric buses were tested, an average 77% greater efficiency was obtained in equivalent energy consumption.

¹⁵ The capacity of zone-service buses varies according to the type of route. Buses will have capacity for 19, 40, 50, and 80 passengers.

¹⁶ The approximate cost of 80-passenger diesel, hybrid, and electric buses are: US\$180,000, US\$290,000, and US\$450,000, respectively.

¹⁷ The emission reductions of a hybrid bus are significant: 26% CO₂; 62% NO_x; 72% particulate matter_{1.5}; 80% CO. In the case of electric buses, it is almost 100%. In Colombia, emissions related to power generation are relatively low, since 78% of generation is from hydroelectric sources.

¹⁸ [Technical cooperation operation ATN/MC-12152-RG \(RG-T1798\)](#) approved in May 2010.

- 1.18 **Financing of the SITP.** The SITP includes investments in transportation infrastructure, vehicle renewal, and complementary systems. The main infrastructure investments will be for the construction of bus stops, passenger transit terminals, and bus storage lots. These investments will be paid for by the public sector or through public-private partnerships. Investments in vehicles and complementary systems will be financed entirely by the concessionaires, pursuant to the requirements of the SITP concession contracts. Investments in vehicles will amount to approximately US\$840 million over the 24-year life of the concession.¹⁹ To meet these investment requirements, concessionaires have their own capital and access to loans from lenders.
- 1.19 **The proposed program.** This program will finance subloans in order to procure a pilot fleet of clean technology vehicles for the SITP. In this way, the IDB will support implementation of the SITP and promote the adoption of clean technologies in public transportation. The vehicles financed through the program will be new buses that will be included in the SITP by the concessionaires for operating in their respective service zones. The demand for new vehicles is based on the SITP implementation schedule, according to which more than 4,000 new buses will be brought in between 2013 and 2017.
- 1.20 **Participation of the IDB.** The Bank's country strategy with Colombia (document GN-2648-1) identifies low investment rates and deficient business management as the main hurdles to improved public transportation services. In line with that strategy, through this program the IDB is supporting the strengthening and modernization of public transportation companies in order to improve the quality of service provided to users. The program is aligned with the objectives of the Ninth General Capital Increase (GCI-9) (document AB-2764) as it contributes to the corporate priority of climate change mitigation and environmental sustainability. It was prepared in coordination with three IDB divisions: Transportation (INE/TSP); Capital Markets and Financial Institutions (IFD/CMF); and Climate Change and Sustainability (INE/CCS).
- 1.21 In Bogota, the IDB has supported the structuring of the SITP by means of a loan²⁰ and two technical cooperation operations.²¹ The studies conducted under those operations analyzed in detail the opportunities for improving the environmental aspects of public transportation. One of the key recommendations was to take advantage of vehicle renewals in the SITP to modernize the fleet with hybrid and electric technologies that have a better environmental impact.
- 1.22 **Use of concessional funds.** The initial investment in clean technology vehicles remains higher than for the diesel equivalents. Although there are significant savings in operating costs, demand for clean technologies has not yet materialized

¹⁹ Net present value in equivalent 2012 United States dollars.

²⁰ Loan 2136/OC-CO, approved in May 2009 (see loan document [CO-L1076](#)).

²¹ Technical cooperation operations ATN/OC-11321-CO ([CO-T1146](#)) and ATN/MC-12068-CO ([CO-T1202](#)), approved in July 2008 and February 2010, respectively.

in Bogota. CTF funds can serve as an added economic incentive for the adoption of clean technologies in the SITP. In order for technological transformation to take place in Bogota's public transportation fleet, operators will need access to suitable funding. Because of its low interest rates and longer repayment and grace periods, a credit line financed by the CTF can offer financial incentives that will even the scales for concessionaires' choice between a clean technology bus and a diesel bus.

B. Objectives, components, and costs

- 1.23 **Objective.** The general objective of the program is to improve public transportation in Bogota. The specific objectives are to reduce transportation operating costs, local pollution, and GHG emissions associated with Bogota's public transportation system.
- 1.24 **Single component: Financing.** The objective of the component is to finance subloans to purchase clean technology buses for the SITP. Bancóldex will serve as a source of financing by creating a rediscount line of credit for use by eligible lenders under the program, which in turn will onlend directly to SITP concessionaires through credit lines. Under the proposed program, Bancóldex will finance up to 50% of each subloan, with the remainder being financed by eligible lenders. In that regard, the financing under the program will total US\$80 million. Funds will be offered under concessional terms that help offset the difference in the front-end costs of clean technologies.
- 1.25 **Related activities.** This operation will be linked to technical assistance activities²² to strengthen the knowledge of SITP concessionaires regarding the operational and business aspects of clean technologies. The IDB is working with local authorities to develop a business environment for suppliers of clean technologies and SITP concessionaires. With the support of the District Secretariat for Environment and the C40 Cities Climate Leadership Group, working groups are being created that will help operators better understand the vehicle options available on the market, and to afford manufacturers the opportunity to promote their products under innovative business arrangements. These working groups bring together more than 15 clean technology suppliers with all of the SITP's concessionaires.
- 1.26 **Expected outcomes.** The program will finance approximately 282 medium-capacity (up to 80 passengers) hybrid or electric buses.²³ The financing of vehicles will directly support the SITP, as it will contribute to reducing the operating costs of public transportation and improve environmental conditions to the benefit of the entire population. Financing for clean technology buses will increase the benefits offered by the SITP because it will lead to even greater reductions in operating costs and transportation-related emissions.

²² Technical cooperation operation ATN/OC-13086-CO ([CO-T1278](#)) approved in December 2011.

²³ The total number of buses financed may vary in accordance with actual demand. Estimates were made for a total of 282 buses, with the assumption that 50% of the funds will be invested in hybrid buses and 50% in electric buses. Variables such as technical specifications, final market price, and financing arrangements may affect the number of units financed.

- 1.27 In addition, the program will help overcome initial barriers to the adoption of clean technologies for public transportation and build confidence in the market of clean technology suppliers and among concessionaires. The program's impact will not only be the direct financing of buses, but also the transformational effect it can have on the entire sector through its contribution to developing the market for clean technologies.
- 1.28 This operation can also have a replicable impact in other Colombian cities and in the region. Just as the Transmilenio (Bus Rapid Transit) model has been replicated in more than 30 cities around the world, the SITP model has great potential for being adopted by other cities. Cities including Santiago, Chile and São Paulo, Brazil have already taken steps to integrate their various public transportation services in order to offer passengers an integrated and organized multimodal system.
- C. Outcome indicators**
- 1.29 The SITP will benefit the system's users and the city mainly by reducing the oversupply of vehicles and modernizing the vehicle fleet. These benefits will be further increased by the incorporation of clean technology vehicles. The outcome indicators for the program include: (i) lower operating costs (US\$ per year); (ii) reductions in local pollution (tons of particulate matter per year); (iii) reductions in GHG emissions (tons of CO₂ per year); and (iv) number of people with access to low-carbon public transportation.
- 1.30 The results matrix (see [Annex II](#)) shows the baseline values, units of measurement, and corresponding targets. Indicators have been proposed at two levels: (i) impact indicators, to analyze the outcomes of full implementation of the SITP and the credit operation throughout the city of Bogota; and (ii) outcome indicators, to analyze the specific outcomes of establishing the pilot fleet financed with this loan operation.

II. FINANCING STRUCTURE AND RISKS

A. Financing instrument

- 2.1 The program will be financed with US\$40 million from the Clean Technology Fund (CTF). The resources will be executed by Bancóldex, which acts in the Colombian market as a source of financing for lenders. With program resources, Bancóldex will be able to loan funds under suitable terms and conditions to eligible lenders, who in turn, will onlend to the concessionaires for the purchase of clean technology buses. The financing for clean technology buses provided through Bancóldex will be cofinanced *pari passu* by the lenders. The specific conditions of the program will be established in its Credit Regulations. Bancóldex will publicize the specific financing terms in its circulars to eligible lenders. The terms and characteristics of the financing will be set unilaterally by Bancóldex.

- 2.2 The financing offered by the program to lenders will: (i) be rediscounted; (ii) be in Colombian pesos or U.S. dollars; (iii) have a variable rate, the result of the program's borrowing rate plus Bancóldex's spread; (iv) be equal to or lower than the average rate of financing in the fixed-term deposit market or the inter-bank rate; (v) cover up to 50% of the amount of each subloan; (vi) Bancóldex will assume the credit risk of the lenders; and (vii) the lenders will assume the risks of concessionaires that obtain subloans to purchase clean technology buses.
- 2.3 Bancóldex will provide financing to lenders under the following conditions: (i) Eligibility: Lenders that meet the requirements indicated in paragraph 3.3 of this document; investment projects for clean technology buses for up to 80 passengers by concessionaires operating in Bogota's SITP; hybrid and electric bus technologies; (ii) Financing: Bearing in mind demand, the program will finance lenders for a period up to 12 years,²⁴ with a grace period of up to 36 months, and a discount rate equal to or lower than the average financing rate of the fixed-term deposit market or inter-bank rate; and (iii) Characteristics of subloans granted to concessionaires: (a) denominated in Colombian pesos or U.S. dollars; and (b) at final interest rates freely negotiated between the final beneficiary and the lender.

B. Socioenvironmental risks

- 2.4 Given that this program provides financing to Bancóldex for second-tier credit operations, environmental and social impacts and risks will occur at the subloan level. According to Directive B.13 (operational policy OP-703), the operation does not require classification. Its socioenvironmental impacts are expected to be mainly positive, with adverse impacts being low and manageable. Replacement of old buses with new, clean technology buses will reduce GHG emissions and local contaminants. However, the project can have adverse environmental effects if the replaced vehicles are not properly removed from circulation, and if certain parts of the new units (e.g., the batteries of hybrid and electric buses) are not properly disposed of once their service life has expired. To mitigate this risk, a waste management protocol will be included as an integral part of the program's Credit Regulations, identifying potential environmental and social risks associated with the replacement of bus technologies. It will also ensure implementation of the protocol and related mitigation measures by lenders and subloan beneficiaries. In general, these are already provided for in the contracts with the SITP's concessionaires, who will be the subborrowers eligible to Transmilenio S.A., the lead entity of the SITP. Mitigation measures will be verified in accordance with Bancóldex's own standards on environmental and social risks, as well as the waste management protocol agreed on with the IDB. The specific requirements to be included in the Credit Regulations are set out in the Environmental and Social Management Report (see [required electronic link #3](#)).

²⁴ The term of the loan can only be extended when the SITP authorizes a service life for clean technology vehicles that exceeds 12 years.

C. Fiduciary risk

- 2.5 Bancóldex already has recognized, solid experience with the implementation and execution of IDB resources. The financial management evaluation concluded that Bancóldex has sufficient capacity to carry out the loan's financial management activities and to administer the loan proceeds. Fiduciary risk in financial management is low. The institution has experience with IDB loan operations: currently, it is satisfactorily executing operation 2193/OC-CO "Loan for Financing of Investment Projects and Productive Restructuring and for Business and Export Development," and in December 2012 the IDB approved loan 2886/OC-CO "Program to Promote Outsourced Services," which will begin execution in 2013. Bancóldex is overseen by the Financial Superintendency of Colombia, the Office of the Comptroller General of the Republic, the General Accounting Office of the Nation, and the Stock Market Regulator of Colombia. Internal control is exercised by the Office of Internal Auditing and Office of the Fiscal Auditor. Bancóldex has experience with IDB loan operations and has demonstrated its capacity as a borrower and executing agency (see [Annex III](#)).
- 2.6 **Procurements.** The financing will be channeled by a financial intermediary (Bancóldex) to private banks, and from these to private companies. No procurement risks are expected inasmuch as the operation does not involve direct procurements or the contracting of consultants. Subloans will follow procurement processes consistent with market practices acceptable to the IDB, pursuant to the Policies for the Procurement of Works and Goods Financed by the IDB (document GN-2349-9).

D. Other special considerations

- 2.7 Two financial risks have been identified for program implementation: (i) demand cannot be structured, and/or it is difficult to demonstrate the existence of demand, which it is an indispensable requirement for Bancóldex to request funds, and for the IDB to disburse them. To mitigate this risk the IDB has tested hybrid and electric buses and is supporting Bogota in organizing the working groups described in paragraph 1.25; and (ii) the loan's dollar resources cannot be placed in the market to ensure returns that will enable concessional terms to be offered for the peso credit lines. To mitigate this risk, Bancóldex will need to actively promote the dollar resources in the market during the project implementation period.
- 2.8 **Economic feasibility.** The program's economic feasibility within the SITP was evaluated by means of an ex ante cost-benefit analysis. The analysis demonstrated the program's return with a cost-benefit ratio of 1.6, and a net present value of US\$419.8 million. This analysis took into account all of the SITP's costs, including investments in infrastructure, training, technology, and new buses, including the clean technology vehicles to be financed under this program. It also considered all associated benefits stemming from the reductions in operating costs, fuel consumption, particulate matter, and GHG emissions. The sensitivity analyses

demonstrated that the program is profitable with different investment and operational cost scenarios (see [optional electronic link #1](#)).

- 2.9 **Financial feasibility.** The program's financial feasibility was analyzed from the standpoint of the concessionaires that purchase clean technology buses. The outcomes show high returns on investments in hybrid and electric buses, with internal rates of return of 31.9% and 25.1%, respectively. The analysis took into account the costs related to the investment in and operation of the buses, including vehicle value, fuel costs, and other operating costs, within the framework of the SITP. The analysis also considered: (i) operational savings; (ii) variations in the remuneration formula for concession contracts adjusted for clean technology buses; (iii) the concessional financing terms to be offered under this program; and (iv) the recent reforms that lowered import duties on hybrid and electric buses from 15% to 5% (see [optional electronic link #2](#)).
- 2.10 An analysis was also performed of the profitability of diesel buses, taking into account current conditions of costs, financing, and operation, within the framework of the SITP. Investments in diesel buses continue to be highly profitable, with an internal rate of return of 32%, which is comparable to investments in hybrid buses and greater than returns on investments in electric buses. While this operation was being prepared, Bogota indicated that it was designing economic incentives to complement this program and searching for suitable sources of funding to enhance the attractiveness of adopting clean technologies as compared to diesel buses. The IDB is assisting Bogota in this process to implement feasible measures that are fiscally sustainable in the medium and long terms.
- 2.11 **Sustainability.** Once the resources of this concessional credit line have been exhausted, investments in clean technologies may continue. For one thing, the introduction of this pilot fleet may arouse interest among manufacturers to assemble hybrid and electric buses in Colombia in order to reduce production costs. In addition, the batteries industry is growing rapidly, and the price of buses will likely continue to fall during program execution. Finally, some SITP concessionaires are involved in bus operations in other Latin American cities, which increases the potential for replicating this pilot program in other countries.

III. EXECUTION AND ADMINISTRATION PLAN

A. Execution mechanism

- 3.1 **Borrower and executing agency.** Bancóldex will be the borrower and executing agency for the program and has the mandate and financial and operational capacities needed to implement it. Bancóldex: (i) was established to promote foreign trade and business development through the provision of financing; (ii) is governed by the Law on Banks and Financial Institutions; and (iii) is a second-tier bank that channels its resources to lenders to meet the credit needs of all economic sectors; (iv) has the necessary fiduciary and operational capacity to successfully implement this program; (v) is solvent and has exemplary risk management

- practices; (vi) has been an effective executing agency for IDB programs; and (vii) was selected by the government as one of the entities to support its efforts to reduce GHG emissions.
- 3.2 **Execution and administration.** For purposes of this program, Bancóldex will be responsible for: (i) executing and supervising appropriate use of the loan proceeds; (ii) furnishing the human, technological, and budget resources necessary for its execution, on time and in due form; and (iii) submitting to the IDB the documentation required to satisfy disbursement conditions, as well as other operational documentation required for execution (see [optional electronic link #8](#)). **As a special condition precedent to the first disbursement, Bancóldex will formally appoint a coordinator for the program, who will serve as the counterpart with the IDB for purposes related to program execution.** The specific functions of the program coordinator will be established in the program's Credit Regulations and will be consistent with Bancóldex's responsibilities.
- 3.3 **Authorization of lenders.** First-tier lenders regulated by the Financial Superintendency may participate as intermediaries in the program. As such, they will be responsible for: (i) evaluating the risk of subborrowers and making lending decisions pursuant to the program's Credit Regulations and the operational standards of Bancóldex; and (ii) assuming responsibility, vis-à-vis Bancóldex, for the service on and repayment of the subloans, regardless of subborrowers' fulfillment of their obligations.
- 3.4 **The Credit Regulations:** (i) will be consistent with Bancóldex and IDB policies and operational standards, as well as Colombia's financial legislation and practices; (ii) will contain the program's main characteristics; (iii) will stipulate that noncompliance with its provisions will bar access to financing; (iv) **will be approved by Bancóldex, following the no objection of the IDB, as a special condition precedent to the first disbursement;** (v) will require the IDB's no objection for amendments; (vi) will include the waste management protocol (paragraph 2.4); (vii) will include an agreement or other appropriate mechanism between Bancóldex and Transmilenio S.A., for the latter to provide, semiannually, the information needed to evaluate compliance with the program's environmental commitments.
- 3.5 **Commitment and amortization of resources.** The program's resources must be fully committed within four years as of the date the loan agreement enters into effect.
- 3.6 **Disbursements.** Disbursements will be made into a U.S. dollar account in the name of Bancóldex, by means of advances of funds. Given the nature and characteristics of the operation, the loan will be disbursed in accordance with the demand for hybrid or electric buses, which will be begin to be structured in the first year of program execution. The IDB will make the first disbursement in the amount of the structured demand. For each disbursement, Bancóldex will demonstrate the existence of demand by submitting letters of intent signed by the beneficiary

cessionaires interested in financing clean technology buses. In addition to cash flow projections, each disbursement request should be accompanied by a status report on the implementation of technical and financial performance commitments. **Bancóldex approval of the investment plan for the first 180 days of the program will be a special condition precedent to the first disbursement, if a disbursement is made as an advance of funds.**

- 3.7 **Retroactive financing.** The Bank will provide retroactive financing (out of the loan proceeds) for eligible expenditures made during the 18 months prior to the date this loan is approved but after 3 April 2013 (the date on which the project profile was approved). Those expenses will be for up to US\$8 million (20%) and are to be made in keeping with the Bank's procurement and contracting policies or procedures substantially similar to them. Retroactive financing is justified because, in order to deliver buses in 2014, manufacturers may require prepayments in the third quarter of 2013.
- 3.8 **Guarantor of the program and debt authorization.** The Republic of Colombia will serve as guarantor, exclusively relative to financial obligations associated with the loan, pursuant to Decree 2681 of 1993, and Article 40 of Law 80 of 1993. Accordingly, a request is made for a partial waiver to the IDB policy "Guarantees Required from the Borrower" (OP-303). This waiver has been requested for earlier credit operations with financial institutions in Colombia. The program is protected by the debt authorization granted to Bancóldex in 2008 by the Interparliamentary Public Credit Commission, for the purpose of contracting external public credit operations with multilateral banks for up to US\$650 million (CONPES 3546).

B. Monitoring and evaluation measures

- 3.9 **Monitoring.** The program will be monitored by means of semiannual reports prepared by the executing agency, and submitted to the IDB within 60 days after the close of each six-month period. The reports will measure the progress achieved with regard to the output and outcome indicators, and to meeting the program's eligibility criteria.
- 3.10 **Evaluation.** The borrower and the IDB will perform a midterm evaluation 24 months after the first disbursement, or once 50% of the loan has been committed, whichever occurs first. The midterm evaluation will focus on the progress made to achieve the program's objectives and outcomes, keyed to the results framework, in order to identify any corrective actions that may be needed. The monitoring and evaluation arrangements will also include an impact assessment to confirm fulfillment of the development objectives, in accordance with impact and outcome indicators (see [required electronic link #2](#)). The IDB will prepare a Project Completion Report (PCR) within three months after the conclusion of the execution period. Bancóldex will collect and make available all the information required by the IDB to prepare the PCR.
- 3.11 **Financial audits.** The program's financial statements and expenditure eligibility will be audited every year by an independent audit firm acceptable to the IDB,

which will be commissioned and paid for by Bancóldex. The audit firm will submit a report on program expenditure eligibility, confirm the existence of promissory notes endorsed to Bancóldex, and make in situ physical inspections to confirm the existence and operation of the hybrid or electric buses. The program's audited financial statements will be sent to the IDB no later than four months after each close of the executing agency's fiscal year, in accordance with the procedures agreed on with the IDB.

Development Effectiveness Matrix			
Summary			
<i>I. Strategic Alignment</i>			
1. IDB Strategic Development Objectives	Aligned		
Lending Program	Lending to support climate change initiatives, renewable energy and environmental sustainability.		
Regional Development Goals	Stabilization of CO ₂ equivalent emissions (metric tons per habitant).		
Bank Output Contribution (as defined in Results Framework of IDB-9)	i) Number of people given access to improved public low-carbon transportation systems, and ii) Climate change pilot projects in agriculture, energy, health, water and sanitation, transport, and housing.		
2. Country Strategy Development Objectives	Aligned		
Country Strategy Results Matrix	GN- 2648-1	Implementation of National Urban Transportation Policy.	
Country Program Results Matrix	GN-2696	The intervention is not included in the 2013 Country Program Document.	
Relevance of this project to country development challenges (If not aligned to country strategy or country program)			
<i>II. Development Outcomes - Evaluability</i>	Highly Evaluable	Weight	Maximum Score
	8.5		10
3. Evidence-based Assessment & Solution	8.4	33.33%	10
4. Ex ante Economic Analysis	10.0	33.33%	10
5. Monitoring and Evaluation	7.1	33.33%	10
<i>III. Risks & Mitigation Monitoring Matrix</i>			
Overall risks rate = magnitude of risks*likelihood	Medium		
Identified risks have been rated for magnitude and likelihood	Yes		
Mitigation measures have been identified for major risks	Yes		
Mitigation measures have indicators for tracking their implementation	Yes		
Environmental & social risk classification	B.13		
<i>IV. IDB's Role - Additionality</i>			
The project relies on the use of country systems (VPC/PDP criteria)	Yes	All financial management systems will be used.	
The project uses another country system different from the ones above for implementing the program			
The IDB's involvement promotes improvements of the intended beneficiaries and/or public sector entity in the following dimensions:			
Gender Equality			
Labor			
Environment	Yes	Hybrid and electric buses reduce 30% - 100% GHG emissions compared to buses fueled by diesel.	
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	Yes	In Bogota, the IDB has supported the structuring of the SITP by financing institutional loan CO-L1076 and two technical cooperations (CO-T1146 and CO-T1202). This operation is related to parallel activities of technical assistance financed by the IDB aimed at deepening the knowledge of the concessionaires of the SITP regarding operational and commercial aspects of clean technology. In particular, the Bank funded hybrid and electric bus tests in Bogota and other Latin American cities (RG-T1798). Also, in conjunction with the Department of Environment and the C40 Cities Climate Leadership Group, workshops are being developed to enable operators to better understand the alternatives of clean technology vehicles available on the market, and at the same time incentive manufacturers to promote their products with innovative business schemes (CO-T1278).	
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan	Yes	The ex-post- cost benefit analysis will contribute to the knowledge of effective reductions in operation costs, CO ₂ and PM emissions from clean technology buses in the public transport system in Bogota.	

The overall objective of the program is to improve public transportation in Bogota. The specific objectives are to reduce transport operating costs, reduce local pollution and greenhouse gas emissions (GHG) associated with the public transport system in Bogota. This program will fund the acquisition of a pilot fleet of clean technology vehicles for the Integrated Public Transport System (SITP for the initials in Spanish). Through this program, the IDB will support SITP implementation and encourage the adoption of clean technologies in the public transport. Vehicles financed by the program correspond to new buses to be added to the SITP by the concessionaires to operate in their respective service areas.

The intervention is composed of one component whose objective is to finance sub-loans whose purpose is the acquisition of clean technology buses. The resources, executed by Bancoldex, will be offered in attractive financial terms in order to contribute to compensate the different initial costs of green technologies and hence incentive their acquisition.

The results matrix presents outcome indicators and associated products for all objectives of the program. The indicators are SMART. The program includes an economic analysis. The monitoring and evaluation plan is based on an ex-post cost-benefit and a before-after comparison that should contribute to the knowledge of effective reductions in operation costs, CO₂ and PM emissions from clean technology buses in the public transport system in Bogota.

The main risks are identified as well as their mitigation measures.

RESULTS FRAMEWORK

Objective	The program's general objective is to improve public transportation in Bogota. The specific objectives are to reduce operating costs, local pollution, and greenhouse gas (GHG) emissions associated with the public transportation system in Bogota.		
Impact indicators	Baseline (2013)	Target (2017)	Comments
Reductions in the operating costs of public transportation in Bogota (US\$/year)	US\$472,885,250	US\$439,751,215	This indicator considers the savings in operating costs (fuel, labor, maintenance, etc.) associated with a reduction in the supply of vehicles and the upgrading of bus technology from implementing 100% of the Integrated Public Transportation System (SITP) and the pilot fleet of clean technology vehicles. The baseline is the annual operating costs of 16,047 conventional buses in the collective public transportation (CPT) system. The target scenario is the annual operating costs of a fleet of 9,838 SITP vehicles, 282 of which correspond to the pilot fleet of clean technology buses.
Reductions in local pollution (particulate matter) produced by public transportation in Bogota (tons/year)	360,263,547	144,710,756	This indicator considers reductions in local pollution (particulate matter) associated with a reduced supply of vehicles and the upgrading of bus technology in Bogota from implementing 100% of the SITP and the pilot fleet of clean technology vehicles. The baseline is the annual operating cost of 16,047 conventional buses in the CPT. The target scenario is the annual operating cost of a fleet of 9,838 SITP vehicles, 282 of which correspond to the pilot fleet of clean technology buses.
Reductions in GHG emissions (CO ₂) in Bogota (tons/year)	528,773	470,662	This indicator considers the reduction in greenhouse gases associated with a reduced supply of vehicles and the upgrading of bus technology in Bogota from implementing 100% of the SITP and the pilot fleet of clean technology vehicles. The baseline is the annual operating cost of 16,047 conventional buses in the CPT. The target scenario is the annual operating cost of a fleet of 9,838 SITP vehicles, 282 of which correspond to the pilot fleet of clean technology buses.
Number of persons with access to improved low-carbon public transportation systems in Bogota (daily number)	807,242	2,046,229	This indicator considers that, at present (2013), 1,775,933 trips are made per day in the Transmilenio system, which is a low-carbon system. When the SITP is implemented throughout the entire city (2017), an additional 2,725,771 daily trips will be made in improved, low-carbon public transportation systems. To convert number of trips to number of persons, a factor of 2.2 trips/person/day was used (District Mobility Survey).

Outcome indicators	Baseline (2013)	Target (2017)	Comments
Reduction in operating costs associated with the introduction of a pilot fleet of clean technology buses. (US\$/year)	US\$13,554,954	US\$8,728,408	This indicator considers the savings in operating costs (fuel, labor, maintenance, etc.) associated with the implementation of the pilot clean technology fleet and the corresponding reduction in the supply of vehicles (1.6 conventional buses eliminated for each new bus added). The baseline is the annual operating cost of a fleet of 460 conventional buses in the CPT. The target scenario is the annual operating cost of a pilot fleet of 282 clean technologies vehicles.
Reduction in local pollution associated with introduction of a pilot clean technology fleet. (tons/year)	10.3	1.7	This indicator considers the reduction in local pollution (particulate matter) associated with the introduction of the pilot clean technology fleet, and the corresponding reduction in the supply of vehicles (1.6 conventional buses eliminated for each new bus added). The baseline is the annual operating cost of a fleet of 460 conventional buses in the CPT. The target scenario is the annual operating cost of a pilot fleet of 282 clean technology vehicles.
Reduction in GHG emissions associated with the introduction of a pilot clean technology fleet. (tons/year)	15,157	8,095	This indicator considers GHG (CO ₂) reductions attributed to the implementation of the pilot clean technology fleet, and the reduction in the supply of vehicles (1.6 conventional buses eliminated for each new bus added). The baseline presents the annual operating cost of a fleet of 460 conventional buses in the CPT. The target scenario is the annual operating cost of a pilot fleet of 282 clean technology vehicles.
Number of persons with access to a pilot clean technology fleet (daily number)	0	33,566	This indicator considers the number of persons who will use the clean technology fleet. Currently the number is zero since no such buses are operating at this time. In order to calculate the indicator, a fleet of 282 clean technology buses was considered (of a total of 9,900), which will provide approximately 73,846 daily trips in 2017, depending on the final size of each bus. To convert number of trips to number of persons, a factor of 2.2 trips/person was used (District Mobility Survey).

Output indicators	Baseline	2013	2014	2015	2016	2017	Target	Comments
Number of program-financed clean technology buses to be included in Bogota's SITP	0	0	80	80	80	42	282	The estimated total number of vehicles financed was calculated with the assumption that 50% of the funds will be invested in hybrid buses and 50% in electric buses. Other variables such as technical specifications, final market price, and financing arrangement for each unit may also affect the number of units financed. This target will be adjusted in accordance with market demand.
Intermediate output indicators	Baseline	2013	2014	2015	2016	2017	Target	Comments
Amount in U.S. dollars of loans granted by the program to lenders for the purchase of clean technology buses (US\$ million)	0	0	11.3	11.3	11.3	6.1	40	
Amount in U.S. dollars of resources leveraged by the program for the purchase of clean technology buses (US\$ million)	0	0	11.3	11.3	11.3	6.1	40	

Notes:

The following assumptions were used to calculate the output indicators:

- Financing structure for each bus: 20% own capital – 40% program financing – 40% financing leveraged through the lenders.
- Distribution of funds according to bus technology: 50% for hybrid buses (172 units), 50% for electric buses (110 units).
- Cost of each type of technology: US\$290,000 hybrid bus; US\$450,000 electric bus.

The impact indicators were calculated using the following figures:

- Reduction in the size of Bogota's bus fleet: from 16,047 buses (2013) to 9,838 (2017) – replacement factor (1.6:1).
- The figures for 2017 correspond to scenario 2C in the economic evaluation.
- Annual operating costs correspond to the total from the following rows in the economic evaluation: “Fuel consumption,” “Electricity consumption,” and “Operating costs”.
- Annual emissions of local pollution correspond to the “Particulate matter” row in the economic evaluation.
- Annual GHG emissions correspond to the “CO₂” row in the economic evaluation.

Outcome indicators were calculated using the following figures:

- Size of the fleet of conventional buses to be replaced by the pilot fleet: 460 buses (using 1.6:1 as the replacement factor).
- Average operating costs of a bus in the conventional bus fleet: US\$0.53/passenger (2013).
- Average local pollution emissions (particulate matter) of a bus in the conventional bus fleet: 0.402 g/passenger (2013).
- Average GHG emissions (CO₂) of a bus in the conventional bus fleet: 0.00059 tons/passenger (2013).
- Passenger demand in the CPT in 2013: 895 million passengers/year.

- Size of the pilot clean technology fleet: 282 buses
- Average operating cost of a bus in the pilot clean technology fleet: US\$0.32/passenger (2017).
- Average local pollution emissions (particulate matter) of a bus in the pilot clean technology fleet: 0.062 g/passenger (2017)
- GHG (CO₂) emissions of a pilot clean technology fleet bus: 0.0003 tons/passenger (2017).
- Passenger demand in the SITP in 2017: 953 million passengers/year.

Source of data: [Analysis of emissions reduction and economic evaluation](#).

FIDUCIARY AGREEMENTS AND REQUIREMENTS

Country:	Colombia
Project number:	CO-L1096
Name:	Financing Program for the Technological Transformation of Bogota's Integrated Public Transportation System (Clean Technology Fund)
Executing agency:	Banco de Comercio Exterior de Colombia (Bancóldex)
Prepared by:	Mylenna Cárdenas García, Fiduciary Financial Management Specialist; and Rodolfo Gastaldi, Fiduciary Procurement Specialist

I. EXECUTIVE SUMMARY

- 1.1 Bancóldex, the program borrower and executing agency, was submitted to a fiduciary evaluation using the Institutional Capacity Assessment System (ICAS) and Project Risk Management (PRM) tools. Bancóldex has experience with the execution of IDB loan programs and has demonstrated its capacity as a borrower and executing agency through two programs under the conditional credit line for investment projects (CCLIP). Currently, it is satisfactorily executing operation 2193/OC-CO "Loan for Financing of Investment Projects and Productive Restructuring and for Business and Export Development," and in December 2012, the Bank approved loan 2886/OC-CO "Program to Promote Outsourced Services," which will begin implementation in 2013. The evaluation concludes that Bancóldex has the capacity to carry out the financial management activities and to administer the loan resources. The fiduciary risk for financial management is low.
- 1.2 Bancóldex is a second-tier financial institution with legal standing, administrative autonomy, and own assets. It is overseen by the Financial Superintendency, and is linked to the Ministry of Trade, Industry, and Tourism (MCIT). Because Bancóldex is not a part of the General Budget of the Nation, it is not required to do its accounting records and budgetary control in the public financial management systems (SGFP). Bancóldex uses a reliable integrated system with Web-based accounting, treasury, and budget execution modules.
- 1.3 The total cost of the program is US\$40 million, financed by the IDB. The program does not involve financing from any other multilateral institutions, and it will be executed over a 48-month period.
- 1.4 The financing will be onlent by Bancóldex, a second-tier financial intermediary, to private banks, and by them to private enterprises. No procurement risks are envisaged inasmuch as the operation does not include direct procurements.

II. THE EXECUTING AGENCY’S FIDUCIARY CONTEXT

- 2.1 Bancóldex uses a reliable integrated accounting system, in AS/400, called the Financial and Accounting Information System (SFC) with Web-based accounting, treasury, portfolio, and budget applications; it receives information from the investment (Alfyn) and payroll applications. This system maintains, manages, and monitors independent accounting accounts, which makes it possible to record program resources, facilitating the control and identification of those resources.
- 2.2 Bancóldex has well defined policies, procedures, and processes; this was examined and confirmed during the institutional capacity assessment and as part of the supervision of the loans in execution. Its strengths include its skilled personnel, functional information systems, and clear and specific procedures for each programmed activity. Moreover, it has technical staff with good experience, tenure, and seniority in each area of the institution, which ensures the quality of its fiduciary and administrative processes, as well as responsible and efficient execution of its functions.

III. FIDUCIARY RISK EVALUATION AND MITIGATION ACTIONS

The following financial risks were determined and require mitigation:

Risk	Type	Rating	Mitigation action	Budget
Demand cannot be structured, and it is difficult to demonstrate its existence, which is an indispensable requirement for Bancóldex to request funds, and for the IDB to disburse them.	Inherent	High	Publicize the economic and environmental benefits of adopting clean technologies, through workshops, visits, etc.	Bancóldex
The U.S. dollar resources from the loan cannot be loaned in the market to ensure suitable returns so concessional terms can be offered for the peso credit lines.	Inherent	High	Bancóldex will promote the U.S. dollar resources at market rates.	Bancóldex

- 3.1 The plan to mitigate these risks will be implemented as part of the loan preparation process. The structuring and identification of demand for the peso credit line, and certainty in loaning the U.S. dollar resources at the required rate, are requirements for Bancóldex to be able to request disbursement of the loan. No procurement risks have been identified because the program does not include procurements.

IV. CONSIDERATIONS FOR THE SPECIAL PROVISIONS OF CONTRACTS

- 4.1 The following are special conditions precedent to the first disbursement of the loan: (i) formal appointment of the program coordinator by Bancóldex; (ii) approval of the program’s Credit Regulations by Bancóldex; (iii) approval by Bancóldex of the investment plan for the first 180 days of the program, in the case of a disbursement

- as an advance of funds; and (iv) entry into force of an agreement or other suitable mechanism between Bancóldex and Transmilenio S.A., for the latter to provide, semiannually, the information needed to evaluate compliance with the program's environmental commitments.
- 4.2 The exchange rate used in the requests for advances of funds will be the one in effect on the date the disbursement request is submitted. Bancóldex is to submit supporting documentation for expenditures, using the exchange rate in effect on the date Bancóldex disburses the operations in Colombian pesos to the financial intermediary.
- 4.3 The program's financial statements are to be audited annually.

V. AGREEMENTS AND REQUIREMENTS FOR PROCUREMENT EXECUTION

A. Procurement execution

- 5.1 In accordance with paragraph 3.12 of document GN-2349-9 (March 2011), procurements in loans to financial intermediaries that are onlent through other loans to beneficiaries to finance subprojects may use customary private-sector procurement practices for goods and related services acceptable to the IDB. It is requested that these procurement procedures honor the principles of quality, economy, efficiency, competition, and transparency. Procurements will be reviewed ex post by the program's auditor.

VI. FINANCIAL MANAGEMENT

B. Programming and budget

- 6.1 Bancóldex is not a part of the General Budget of the Nation, which means its expenses are not defrayed with resources from the Public Treasury but rather with resources it earns from its operations as a lending institution. Therefore, its budget control is not required to be performed through the public financial management system. Bancóldex's budget is structured in accordance with a strategic action plan that sets the course of action for its business fronts for the programmed year, the subsequent definition of loans by line (credit disbursement needs), and operating expenses. The latter are covered by internally generated funds, deposits, and obligations acquired with financial institutions. For both budget preparation and monitoring, Bancóldex follows clear policies set out in the budget planning and budget management processes established in Bancóldex's value chain, which are approved by senior management. Budgets are approved for each fiscal year by Bancóldex's board of directors. To monitor budget management, Bancóldex uses a business projection tool (Cognos Planning), an expenditure monitoring tool (Cognos Finance), and a tool to monitor the different credit lines and other business units (DWH-Data warehouse). Budget execution is monitored by the President's Committees and the board of directors of Bancóldex. Program resources will be used in executing the institution's budget.

C. Accounting and information systems

6.2 Program accounting will be the responsibility of Bancóldex, which will use the accrual method of accounting when recording information in Bancóldex's reliable integrated system with Web-based accounting and treasury applications. Bancóldex follows the standards established by the Financial Superintendency of Colombia to record its operations and prepare its financial statements; for anything not covered thereby, it follows Colombia's generally accepted accounting practices (GAAP), established by Decree 2649 of 1993. The program's audited financial statements will be prepared according to the cash-based accounting method, using information generated by the portfolio application, which identifies loan-financed operations. Its integrated management system also includes internal accounting policies. Bancóldex uses the financial sector's chart of accounts. This notwithstanding, and pursuant to Law 1314 of 2009 and Decree 2784 of December 2012, Bancóldex is in the process of implementing the International Financial Reporting Standards (IFRS), which will be reported in parallel to the Colombian GAAP in 2014, and will enter into full effect in 2015. It should be noted that, although the core of the system will initially maintain the Colombian GAAP, gradual adjustments will be made in the systems so that separate IFRS-based accounting will enter into full effect in the indicated year.

D. Disbursements and cash flow

6.3 Disbursements will be made into a U.S. dollar account in the name of Bancóldex as advances of funds. Given the operation's nature and characteristics, the loan will be disbursed in accordance with the demand for hybrid or electric buses, which will begin to be structured in the first year of execution. The IDB will make the first disbursement in the amount of the structured demand. Bancóldex will demonstrate the demand for each disbursement by submitting letters of intent signed by beneficiary firms interested in financing clean technology buses. In addition to cash flow projections, the disbursement request will include information on the status of compliance with the technical and financial performance commitments. **As a special condition precedent to the first disbursement, Bancóldex will approve the investment plan for the first 180 days of the program if a disbursement is made as an advance of funds.**

6.4 Bancóldex can justify the investment to the IDB when it transfers the resources in pesos to the intermediary financial institution. Bancóldex will make available to the auditor and to the IDB the promissory notes endorsed in its name for all credits being accounted for, and evidence that the resources have been transferred in Colombian pesos to the intermediary financial institution. These documents will be reviewed ex post by the auditors.

6.5 For more information on the special conditions precedent to the first disbursement and the exchange rate, see Section IV, subparagraphs (i) and (ii) of this annex.

E. Internal control and internal auditing

- 6.6 Bancóldex has an Office of Internal Control that reports to the Audit Committee of the board of directors and administratively falls under the Office of the President of Bancóldex. The institution has implemented the Standard Internal Control Model (MECI 1000:2005) for State agencies, based on the COSO world standard, and which is aligned and articulated with the internal control system established by the Financial Superintendency in its Basic Legal Circular. Bancóldex has a code of good corporate governance, an audit committee of three members of its board of directors, a control policy, audit statutes, an audit manual, and a quality and operations manual. It also follows the standards of the Institute of Internal Auditors. Because it is subject to oversight and control by the Financial Superintendency, Bancóldex applies the risk management methodologies and manuals prescribed by law (for risks related to credit, market, liquidity, operations, asset laundering, terrorism financing, and information security). Annually, Bancóldex submits to its board of directors and the General Shareholders' Assembly its evaluation report of the management of its internal control system, pursuant to a legal requirement of the Financial Superintendency set out in External Circulars 14 and 38 of 2009, included in Title I, Chapter IX, Section 7 of the Basic Legal Circular.
- 6.7 In accordance with the principles of self-regulation, self-management, self-control, and continuous improvement, Bancóldex conducted an independent evaluation of its internal audit system (SCI), which returned satisfactory results in 2012. As strengths, the institution is evidently committed to maintaining and continuously improving the SCI, which demonstrates its responsibility vis-à-vis the plans and directives proposed by the national government on internal control and quality management, which are supplemented by Bancóldex's own risk management systems.

F. External control and reporting

- 6.8 The program's financial statements and expenditure eligibility will be audited every year by an independent audit firm acceptable to the IDB and commissioned by Bancóldex. This may be the same firm that audits the financial statements of Bancóldex and of the other programs in execution, provided it is eligible to the IDB. This will optimize costs and offer a comprehensive overview of the executing agency and its management of the program. The auditor will submit a report on expenditure eligibility in the program, confirm the existence of promissory notes endorsed to Bancóldex, and make in situ inspections of the beneficiary firms that purchased the clean technology buses financed by the loan to confirm the existence and operation of the hybrid or electric buses. The audit services, budgeted at approximately US\$28,000 per year, will be financed by Bancóldex. The program's audited financial statements will be sent to the IDB no later than four months after the executing agency's close of each fiscal year, in accordance with the procedures and terms of reference previously agreed on with the IDB.
- 6.9 The IDB will request from the borrower the audited financial statements, as well as financial information that supplements those statements, during the program

implementation period until all program resources have been disbursed. These will be sent to the IDB no later than four months after the executing agency's close of each fiscal year, beginning with the fiscal year in which program implementation begins.

G. Financial supervision plan

- 6.10 Taking into account the findings of the institutional capacity assessment, the financial management supervision of the first and second loans under the CCLIP, and the program's risk assessment, the financial specialist will perform, at the very least, one in situ review per year, and desk reviews on the audited annual financial statements and final statements. The auditor will perform in situ visits to the beneficiary firms that purchased clean technology buses. The fiduciary supervision visits on financial management will include verification of the financial and accounting arrangements used in administering the program, and monitoring of implementation from the recommendations of the program's independent auditor.

H. Execution mechanism

- 6.11 Bancóldex will be the borrower and executing agency, and will be legally responsible to the IDB for repayment of the debt, with the guarantee of the Republic of Colombia; it will also be responsible for execution of the program's technical and financial activities. Bancóldex will receive the resources in a U.S. dollar account and will loan them out in the market such that the present value of financial returns can be used to offer the required concessional conditions in terms of amount, term, grace period on principal, rediscount rate, amortization and currency for the peso credit lines. The loan proceeds will be disbursed by Bancóldex to intermediary financial institutions, using its customary rediscount mechanism or another mechanism agreed on with the IDB, which will be backed by a promissory note endorsed to Bancóldex. These will be stored in the systems so they will be available for ex post review by the IDB or the auditor. Bancóldex may justify the investment to the IDB when it transfers the resources in pesos to the intermediary financial institution. Bancóldex will be responsible for financial management.

I. Other financial management agreements and requirements

- 6.12 **Retroactive financing.** The Bank will provide retroactive financing (out of the loan proceeds) for eligible expenditures made during the 18 months prior to the date this loan is approved but after 3 April 2013 (the date on which the project profile was approved). Those expenses will be for up to US\$8 million (20%) and are to be made in keeping with the Bank's procurement and contracting policies or procedures substantially similar to them. Retroactive financing is justified because, in order to deliver buses in 2014, manufacturers may require prepayments in the third quarter of 2013.
- 6.13 There are no additional agreements to the foregoing; however, the fiduciary agreements and requirements set out in this annex may be adjusted in accordance

with the program's dynamics, taking into account the risk analysis and institutional capacity assessment updates performed during program implementation.